"THE FARMER IS THE FOUNDER OF CIVILIZATION."—WEBSTER.

A MONTHLY NEWSPAPER:

DEVOTED TO

AGRICULTURE AND HORTICULTURE, PRACTICAL ENTOMOLOGY, DOMESTIC ECONOMY AND GENERAL MISCELLANY.

EDITD BY PROF. S. S. RATHVON.

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19-4.
EDITORIAL.

OUR FOURTEENTH VOLUME.

Like the “Ghost of Banquet,” here we are again, in response to many friends who have greeted us with the significant greeting—

"May your shadow never grow less!" This would be a dreadful greeting to a fat man; but, then dear reader, we are not fat—never have been fat, and, without any double meaning whatever, we never expect to be fat at our present rate of feeding. Cesar is said to have said, "Let me have men about me that are fat," Mark Antony was fat and was popular—Catus was lean and was unpopular, if not hated by Cesar. Now we want to get out of the category of leanness, since leanness works such disarrangement to its possessor—or rather its victims; and, it seems to us the shortest and surest road out, would be for thousands of our subscribers to our volume for 1882. Two hundred contributors, one hundred correspondents and one dozen reporters, or communicators. We are not very particular where these subscribers, correspondents, contributors, &c., are from, so that they are not representatives of districts in which a "Kilkdee" could not live; for, we don’t care to know how poor soil may be, and how lean its cultivators may become and yet have the power to breathe; but, how rich the one may be, and how fat the other. But this is not all. We want to know how they have become rich and fat, that we may be able to instruct others to "go and do likewise." These we consider very moderate wants, in such a magnificent "Kingdom" as Lancaster county, and where people are reputed to live on "the fat of the land."

It would be a most laudable ambition for the farmers of Lancaster county, just to see how fat they can make us and their representative journal, within the year 1882. It would be something to jolly over next Christmas, and enhance the pleasures of the occasion. Dear public, try it "for once."

We have nothing in the form of premiums or bribes to offer, but would rather that every one should be bribed by his own feelings of right, of justice, and of humanity, when he contemplates his duties toward the institutions and enterprises of his county, his state, or his entire country. It may require a greater struggle, a larger quantity of self-denial and self-compulsion, to obey the dictates of his unstanding—

"Unbought by conquest
And unaided by gain."

but then, after the deed is accomplished, the sloe of it will feel just so much the better than he would have felt had he yielded to the flattering inducement to do otherwise.

We are not so exceedingly selfish as to admonish our patrons and readers to patronize no journal but ours. That is not at all our meaning; for, we would have them patronize all they can afford to, and ours too—especially ours. "Eat them all yourself, and give me some," was the "small boy's" advice to his "chum," when other "small boys" were begging his sugar plums. So we advise, when other publishers are trying to obtain your patronage through a premium, take them all if you can, but don’t forget to take the FARMER; for it is "bone of your bone and flesh of your flesh," and like you, "to the manor born"—a local anchor, mooring you to local homes, wherever you may be.

There is no love more ennobling than pure unselfish dom-stic, or local love. Men often in the heyday or prime of life indulge in the glittering sensation of foreign loves, foreign scenes and foreign festivities; only to return in mature life, or in life’s decline, to the loves, the homes, and the afflications of their earlier days. It is very much the same in regard to home literature, home publications. Publications that contain a record of the local doings and sentiments of those who represented the local industries and enterprises of a district where we have, or once had, our local homes, possess a local value far beyond that of more dollars and cents. And, if perchance, we should become possessed of an old volume, or even a single paper, that recorded the events of our early days, and the names of our contemporaries, we are apt to peruse it from "end to end" and gaze upon it with all the fond affection that a grandparent does upon the tiny shoes of the first born. And why? Because they are ours—part and parcel of our local history, local experience, and local memories, however common-place and humble they may appear to others.

By the generous assistance of local contributors and local correspondents we desire to make the Lancaster Farmer for 1882 a local hand-book of Agriculture, Horticulture, Floriculture, gardening, domestic employment, preparation of our cyclopaedia, that will always be referred to with pleasure and with profit, long years after its projectors, its editors and its publishers are "gathered to their fathers."

At no period in the history of agriculture, is a publication of its development and progress considered of more vital importance than the present period. Agricultural and Domestic journals are springing up almost everywhere in our broad land, and by a reference to our " Literary and Personal" columns, it will be perceived that our own Pennsylvania furnishes several new enterprises of the kind. We sincerely hope they may all realize their most sanguine expectations; and, that they may all become "fat," and—if they prefer it—also "ragged and sassy."

We cannot indulge in any special promises for 1882. We hope to be all that you see fit to make us; but, under any circumstances, we think we can with confidence point you to the past as a guarantee for the future.

Of course, the opening year is still one of undeveloped anticipation, and as the tide of time flows on, it will become manifest who is to be carried successfully on its flow, and who buried beneath its flood. But, whatever woes betide us, both religion and philosophy admonish us to reconcile ourselves to "the things that be," as the best condition in which to learn the lessons which experience teaches.

In conclusion, may one and all be blessed with a prosperous and Happy New Year.

THE MOOSE-DEER 100 YEARS AGO.

"Captain Harrison," stated to Judge Henry in 1773, that the moose-deer reigned the master of the forest at that period, about Fort Halifax, at the junction of the Susquehanna and Kennebec rivers; but that when he first settled there, about 1745, the common deer (Cervus elaphus) which now inhabits our more southern climate, was the only animal of the deer kind found in all those regions, to their knowledge, unless it was the Elk (Cervus canadensis), and those only occasionally.

In a short space of time after his location in the country the Moose-deer (Alces americanus) appeared in small numbers, but increased annually afterwards, and as the one species became more numerous, the other diminished, so that the common, or Virginia deer, at the time of this information (1775), according to Captain Harrison, was totally driven from that quarter.

This, in the mind of the narrator seemed to imply that animals, like human beings, whether forced by necessity, or from choice, do emigrate.

Perhaps the most notable instance of one species of animal displacing another, is to be found in the Rat, immediately around us, that was not a matter of choice, for the intruder and usurper was brought here, perhaps against his will.

The Rat that now predominates Lancaster county, and perhaps the entire State of Pennsylvania, if not the whole country, is the "Norway Rat" (Mus rorcutus) and he has almost entirely displaced the "Black Rat" (Mus rattus) which is our native species—indeed we do not remember to have seen but one (dead and partly decayed) specimen in all our life, and that was forty years ago. The reader will please not infer (from a similarity of sound in name) that we refer to the "Mask Rat" (Fiber zibethicus) for that animal is now almost as common as ever it was.

It may seem singular that an animal apparently so slow and stupid as the Moose, should have supplanted one so bright and swift as the Virginia deer; but it has been said that the dull, slow "Gray Fox," which was once very abundant in Pennsylvania, has retired further north on account of the invasion of the swift, cunning and sprightly "Red Fox;" but the cases, in regard to special characteristics, are here reversed. It occurs also that one species of plant will displace another. Permit "Canada Thistle" to dominate itself in the soil, and soon nothing will be found growing but the thistle.
KILLEKINIC

"The 'Red Willow,' (Salix purpureo) which is a native of the United States, is spread throughout our climate. The outer bark is of a deep red color, peeled off in a very thin scale, the inner is scraped off with a knife, and is dried either in the sun or over the fire. The scent, when burning, is delightful. To increase the flavor, the Indians pile the current year's branches of the 'Upland Sumac,' and dry it in bunches over the smoke of a fire. An equal part of the Red willow bark added to as much of the dried Sumac forms the Killekinic of the Indians. One third part of leaf tobacco added to the above ingredients, and the mass rubbed finely together in the palms of the hands, makes that delicious fume, so fascinating to the 'red, and also to the white men. Great care, however, must be taken, not to use the 'Swamp Sumac' (Rhus vernix) instead of the Upland (Rhus glabra) as the former is most poisonous, and resembles the latter in the bark and leaf so much that an inexperienced eye might be deceived. The difference may be distinctly marked by observing that the bunch of berries of the Upland Sumac, is a cone closely attached to each other, and when ripe of a reddish color. The berries of the Swamp Sumac hang loosely pendent from a lengthy foot-stalk, and when ripe are a greenish grey. On this account the variety of Natives and "Corn Plavers," distinguished Indian chiefs, it is stated, that the person who should smoke the Swamp Sumac would forfeit his eyesight. The Vanilla of South America has been applied by the Spanish manufacturers of tobacco in various ways; it is strange that we have never assayed "Killekinic."

The above, from Judge Henry's "Campaign against Quebec" in 1775, we reproduced, merely to admonish the lovers of the weed of a resource, should the tobacco crop at any time totally fail, or be so "cornered" that poor people could not afford to use it. Surely the white man ought to be as great a botanist as the Indian, and not make the mistake of getting the Swamp instead of the Upland Sumac.

We hazard the suggestion that the above compound might be superior to the "stuff" now sold as smoking tobacco; although so far as concerns ourselves personally, we prefer the pure, simple tobacco to any compound, whatever it may be scented with. To us, any outside ingredient added to tobacco to give it quality, indicates that it is not good tobacco.

THE VALUE OF SNOW.

If snow possesses no properties that are valuable to the soil as a fertilizer, such an opinion has at least long existed among men of intelligence. We have just finished reading "An interesting account of the hardships and sufferings of a Band of Heroes who traversed the wilderness in the Campaign against Quebec in 1775," written by Judge John Joseph Henry, of Lancaster, and published by William Greer, in 1812. In speaking of the immense and long continued snows of Canada, where he was held a prisoner for seven months in 1776, the writer remarks as follows: "An observation may be made in this place with propriety, that is, that in the climates of all high southern or northern regions, the soil is very rich and prolific. The beneficial operation of nature is, in all likelihood attributable to the nitrous qualities which the snow deposits. Of the fact, that nitre is the principal ingredient which causes fertility in the earth, no man of observation, can at this day, reasonably doubt. The earth is replete of it. Wherever earth and shade unite, it is engendered and becomes apparent. This idea is proved by the circumstance, that nitre may be procured from caves, the earth of cellars, outhouses, and even from common earth, if kept under cover. During the Revolution, when powder was so necessary, we everywhere saw the good effects of this mineralogical discovery; it gives me pleasure to say, that it is most fairly ascribable to our German ancestors. The snows which usually fall in Canada about the middle of November, and generally cover the ground until the end of April, in my opinion, fill the soil with those negative salts, which forward the growth of plants. This idea was evinced to my vague and inexperienced mind, from observations then made, and which were more firmly established by assurances from Captain Prentis, that muck or manure which we employ in southern climates is there (in Canada) never used. In that country, the moment the ground is freed from snow, the grass and every species of plant, springs forward in the most luxuriant manner.

These observations were made over a hundred years ago, and although Canada may have, in the mean time, learned to recuperate her soil by "muck or manure," it does not obliterate the fact that a good bed of snow during a long, cold winter, is of immense benefit to the soil and winter crops.

KITCHEN GARDEN FOR JANUARY.

In the Middle States, January is unfavourable to out-door labor; in the garden especially, little can be usually done. The forcing-beds and green-houses will of course, require particular attention, and the active man may find something to do in preparing for a more congenial season.

Poles and rods for beans and peas may be made ready to be used when needed; and compost heaps formed. Compost is beyond all comparison the very best form in which to apply fertilizers to most vegetable crops, and any manure that may be readied by proper attention, as the materials present themselves from time to time during the year.

Fruit trees may be pruned; hedges clipped — those formed of evergreens not till after frost has disappeared.—Asparagus-beds topped, preparatory to being dug when frost has ceased. When new ones are to be made, plant the colossal. Hot-beds for early forcing may be made, and other jobs will present themselves in anticipation of spring. Where there exists the will to work, the opportunity for the useful disposition of time is ever present.—Landrith Rt. Reg.

These measures are applicable to any kind of garden, whether a kitchen garden, flower garden, or large market garden; and yet there are many gardens that receive no attention whatever until the planting time is immediately at hand; in the mean time they are the common depositories of boxes, weeds, old cans, broken crockery, coal ashes, oyster-shells, sticks and stones, and any and every kind of rubbish that people wish to expel from their sheds, yards and houses; unless they may choose to erect a pyramid of such trash convenient to their kitchen doors. Doubtless some will allege that all this rubbish contains fertilizing substances that will be imparted to the soil during the winter, and hence they take that slovenly way of recuperating their gardens. Even admitting that, to some extent, such is the case, it must be remembered that such matters are usually irregularly distributed, and may not be supplied where it is most needed. The January work on either a farm or a garden will depend a great deal on the kind of weather we have. If there is three feet of snow on the ground during the entire month, much of the work of order must be deferred to a more "convenient season."

WINTER BLOOMING.

Up to the incoming of the new year the season has been a remarkably mild one, although not by any means a unique one. Apples, pears, peaches and cherries have bloomed, and in some instances have borne fruit, in the months of October, November and December. Delications and other flowering plants have also bloomed in the open air. Snakes and other reptiles have gone abroad, ants have swarmed and large fungi have sprung up as late as the third of November. This illustrates that the whole living world is always ready for vital action, as soon as heat, light and air supervene, no matter what period in the year it may be. The old theory that the sap descends to the roots of all perennial vegetation, and the vital functions are entirely suspended, and the plant world indulges in a long winter sleep, has no existence in fact, as a universal condition. It seems as if nature was always in a state of watchfulness for the opportunities engendered by heat, light and air. We have seen enterpries revive in January and feeding as voraciously as they do in July and August, when food was obtainable, and perhaps within three days thereafter they have retired and recluses into their winter hibernations. Trees seem to be always full of sap, which is ready to swell or break forth from their leaf and flower buds, whenever the atmospheric condition is favorable to their infusion and fructification, either in late autumn, midwinter or early spring. Nevertheless the intervention of winter in our climate is necessary to that repose and recuperation which plants require, to enable them to bear a prolific and perfect crop of flowers or fruit. Even if summer was prolonged during the whole year, it is doubtful whether a second crop would pay for gathering or possess the requisite quality when gathered. Second blooming, and second crops are usually abnormal and abortive. Vegetation tends to be suppressed in such a manner that it cannot successfully carry out in practical results. Rest and recreation is something that is needed. The winter bloomer may not be worth much next summer.
A Distinguished editorial contemporary, in reviewing the present status and the past progress of his journal, very significantly remarks:—

"That our labors have been duly appreciated is abundantly evinced by the assistance we have had, the able and progressive men and women who have contributed their best thoughts to its pages, and by their kindly and zealous efforts continuously put forth for the extension of its circulation."

Any publication that is fortunate enough to realize the foregoing text, comes within the possibility of ultimate success; for, single handed and alone, either a publisher or an editor, "can do nothing." "Variety, is the spice of life," which adds interest to a journal, especially when that variety consists of the "best thoughts" of zealous and intelligent men and women contributors. The Lancaster Farmer has been long enough before the public to entitle it to the methpismen of the best thoughts of the agriculturists of Lancaster county, and that it is, not so is one of the things that is incomprehensible to those who reside beyond its borders. With perhaps a single exception, the Lancaster Farmer has lived longer than any other agricultural paper ever published in Pennsylvania. There is not a more convenient, a safer, or a more permanent record of the best thoughts of the people of the county and the State, than is to be found in the columns of the Lancaster Farmer; and the citizens of the county had "better believe it." There is as much agricultural, mechanical, professional and scientific thought—and as much of the substance upon which thought exercises itself—in Lancaster county, as in any other county in the State, and our local journal is the book in which they should be recorded and transmitted to posterity. The text we quote above, is the language of an octogenarian, who has occupied the chair editorial for more than half a century, and he virtually acknowledges that his success is due to the assistance which he has received from contributors of both sexes. This is the same with every periodical publication in the land. The greatest flow of thought must come from other sources than the minds of their editors only, or they will lack that favor which renders them agreeable to the public.

**HOW DO EELS BREED?**

In the *New Era* of December 10, I saw a communication, signed by Mr. William Neal, of Port Deposit, in reference to the eel-breeding question. The Susquehanna is the largest river in the United States, and the Susquehanna eel is probably the most abundant of all American eels. It is found in all the streams of the state, and in many of the smaller ones. The eel does not live in the Susquehanna, but it migrates up the river and downstream at night. Its breeding habits are known to all fishermen.

**EXCERPTS.**

**MISCELLANEOUS.**

The great gray slug has a supply of 28,000 teeth.

There are forty-six species of the English cuckoo.

Dusters were at first made of the tails of oxen or foxes.

The earliest mention of parks is among the Persians.

The beech has eight or ten eyes set in its back near the head.

Gaze is said to receive its name from Gaza, in Palestine, where it was first made.

The part of the human body which shows the greatest variety of color is the iris of the eye.

The moon was pronounced by Anaxagoras, 500 B.C., to be an earth having mountains and valleys.

King Alfred used to measure time by a device of twelve candles, graduated so as to burn two hours each.

The cochin insect is very small, a pound of cochin being calculated to contain not less than 70,000 in a dried state.

A peculiar violet odor is emitted from the male of some species of Brazilian butterflies, the female being not at all fragrant.

To neutralize the sting of gnat and mosquitoes, English sportsmen rub the part affected with cumin, or the wax of the ear.

The fashion in men's hats changes far more often in England, France, and America than in other countries. The sombrero worn in Don Quixote's time is in fashion in Spain to-day.

Within the past sixty years the value of gold has fluctuated from 16½ to 17½ times that of silver, over averaging about 14½ time and never falling so low as that of fifteen times such value.

Among the early Romans a kind of festi, or anuals, was kept by driving nails into the wall of the Temple of Minerva; and in public calamities, in time of pestilence, etc., a nail was fastened in the Temple of Jupiter.

Christian names are so called by having been given to converts in baptism as substitutes for their former pagan appellations, many of which were borrowed from the names of their gods, and were therefore rejected as profane.

The institution of the "Order of the Bath" originated in the custom of the Franks, who, when they conferred knighthood, bathed them in scalding water, which made them sing, and put the mother of the common eel than she is the mother of the blacksnake, or the boa constrictor, and it is a matter of surprise that any one living near the lands and rivers of our country should for a single moment entertain such a falacy. The question of eel breeding must be decided without the aid of the lamprey.

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**THE LANCASTER FARMER.**

1882.
THE STEEL needles were invented by the Spanish Moors, before which thorns or fish bones, with a hole pierced for an eye, were used. The first needles made in London were made in the reign of Henry VIII by a Moor.

The first book published in the North American colonies was, it is supposed, an "Almanac calculated for New England, by Mr. William Pierce," which appeared in Cambridge in 1632. It was printed by Stephen Daye, but not a copy of it now exists.

Those of us who in winter complain that the sun has not power of warmth should bear in mind Professor Young's recent remark, that if we could build up a solid column of ice from the earth to the sun, two miles and a quarter in diameter, spanning the inconceivable abyss of 93,000,000 miles, and if then the sun should concentrate its power upon it, it would dissolve and melt, not in an hour nor in a minute, but in a single second; one swing of the pendulum and it would be water seven more and it would be dissipated in vapor.

ECONOMICAL.

A teaspoonful of saltwater to a pint of water will kill worms in the roots of squashes.

Pros are able to consume far more food in proportion to their weight than either sheep or oxen.

Sheep provided with cotton-seed meal as an auxiliary feed are the best restorers of worn-out pastures.

Combs and wattles of fowls may be prevented from freezing by oiling them so as to prevent their getting wet.

Sweet apples are an excellent feed for cows, if supplied in moderate quantities and under favorable circumstances.

GREEN manuring, or the plowing in of green crops, is especially adapted for light sandy soils, which need humus to increase their retentive power.

At some time, during the fall or winter give the thin spots in meadows and pastures an even coat of manure. Harrow in spring and sow grass seed.

A farm can be stocked with sheep cheaper than with any other animals. Sheep will come nearer to utilizing everything which grows on the farm.

Joseph Harris says that we can make our lands poor by growing clover and setting it, or we can make them rich by growing clover and feeding it out on the farm.

Add a little glycine to the grass applied to harness, and it will be kept in a soft and pliable state, in spite of the ammonical exhalations of the stable, which tend to make it brittle.

All noxious weeds, such as dock, skunk cabbage and others may be killed by pouring a small quantity of kerosene oil over the young plants. They may also be cut off with a hoe several inches below the surface and salt dropped on the cut-off root.

Some people think that grapevines will grow anywhere because in their boyhood they found strong, luxuriant wild vines growing in damp places. Do not make a mistake. Vines on low lands suffer much by the winter. Hillsides and lean soils are good for grapes for hard winters. For manure that of the cowyard is good.

Grease, says a writer in the Rural New Yorker, is fatal to all insect life. Insects breathe by means of small pores on their sides. Grease or oil that comes in contact with the insects closes the pores and stops the breathing. Mercurial ointment kills as much by the land in it as by the mercury—that is, so far as the vermin are concerned, but not as to the animals that lick it off from their bodies, so that almost any oily or greasy application will be destructive to insect vermin that infest animals if it is applied where it will do the most good.

The implantation of opium by this country which in 1861 was 109,551 pounds, in 1871 had grown to 315,121, and in 1880 amounted to 533,451 pounds. These figures indicate an immense increase in opium eating. In 1870 it was estimated that the number of people having the habit was 225,000, and now it is thought to be fully 500,000. Some persons become so accustomed to the drug as to take immense doses. A Missouri farmer took forty grains of morphia at once without apparent injury, and there are several cases reported in which sixty grains a day were taken regularly.

A statistician has been figuring upon the annual consumption by American manufacturers of the precious metals, which he estimates as $18,000,000 silver and $3,000,000 gold. Two-thirds of the latter is used in making plate. Of the gold, the greater part goes for rings and watch cases. It is estimated that there are about 240,000 wedding rings given in this country every year, averaging $2 each in cost. There are 100,000 more rings given as joye d'amour and a still larger number bestowed in holiday presents.

MORAL ECONOMY.

People's intentions can only be decided by their conduct.

STRIVE for the best, and provide against the worst.

Be grateful if you can; but if you can't be grateful, be true.

He who throws out suspicion should at once be suspected himself.

An effort made for the happiness of others lifts us above ourselves.

There is always room for a man of force, and he makes room for many.

Time once passed never returns; the moment which is lost is lost forever.

Pride breakfasted with Plenty, dined with Poverty and supped with Infamy.

There is a past which is gone forever. But there is a future which is still our own.

There are few occasions when ceremony may not be dispensed with; kindness never.

A father's blessing builds houses for his children, but a mother's curse tears them down.

Reading, study, thinking, observation and sensible conversation makes the mind grow.

Argument in company is generally the worst sort of conversation, and in books the worst of reading.

The discovery of what is true and the practice of what is good are the two most important objects of life.
We can’t be too much on our guard against reactions, lest we rush from one fault into another contrary fault.

Nothing so adore the face as cheerfulness. When the heart is in flower, its bloom and beauty pass to the features.

A wise man in the company of those who are ignorant has been compared by the sages to a beautiful girl in the company of blind men.

A person that secure to himself great deference will, perhaps, gain his point by silence as effectually as by anything he can say.

No school is more necessary to child than patience, because either the will must be broken in childhood, or the heart in old age.

**DOMESTIC ECONOMY.**

Add all refuse matter to the compost heap.

English farmers use bone dust on pastures, but prefer superphosphates for sown crops.

The addition of charcoal to the soil deepens the tint of dhalias, hyschaths and petunias.

Scones, it is claimed, carry with them the bearing year of the tree from which they were taken.

SHELTER and warmth, with regularity in feeding, are essential to success in the management of cattle.

Clear the ground now on which you expect to put small fruit plants next year. Do it thoroughly, too.

All that you wish to know of any new breeds of fowls will not be learned from those who are anxious to sell them.

Scrub sheep are dear even for no price at all. On a good farm they are as bad as rusty nails on a new house.

Feed windbroken horses frequently and little at a time. Grind the food. Give plenty of salt and little water at a time.

Teach your children not to annoy or maltreat the toad. Try rather to coax him to your garden. He will destroy many insects.

A little grease or kerosene on the legs of fowls will remove scales in a short time. Two applications are sometimes needed.

As a partial antidote for drought, keep the land rich, plow deeply, and cultivate as often as possible. Cultivation always tells.

On many farms there are some old cattle and old sheep that can only be kept at a loss. It is economy to fatten them for the butcher.

Those who have been feeding the surplus fruit to hogs say that their stock are in excellent and healthy condition. Fruit makes fine sweet pork.

Where the ground is infested with white grubs it would be advisable to mix salt sparingly with the soil before setting out strawberry plants.

An offensive odor from decaying vegetables will be absorbed by milk. A pair of old shoes or a pair of barnyard overalls in a cellar where there is milk are likely to contaminated it.

Put your stock in a good condition to stand the winter by giving a little fodder of some kind early in the morning. A slight breakfast

of cornstarch or some other food will be greatly relished while the air is cold and the grass frozen. Colts, calves and lambs need particular attention at this season.

A CONNECTICUT farmer says that the butt ends of potatoes and the kernels of corn from the butt ends of the ears, each produced crops that were materially better than where the opposite course was pursued. In the case of potatoes the stalks from the butt end were much the larger and more forward at the first hoeing. The increase in corn was some twenty per cent, in favor of the butt end kernels.

The most profitable way to raise beef cattle is to keep them constantly in a thrive and improving condition. It is not necessary to keep very young stock rolling in fat, but there should always be an abundance of nutritious food to help nature in its development. To allow stock to run down in flesh and become ill-conditioned, simply because it is not designed for market for some time, is the height of folly.

**OUR RESPONSIBILITY.**

We are not at all responsible for the non-appearance of papers read before the Agricultural and Horticultural Society, in the columns of the Lancaster Farmer, unless immediately directed to us. Under present circumstances, it is almost impossible for us to attend a meeting, and very unfortunately for us we cannot hear what is said and done when we do attend, but we nevertheless feel, and ever have felt, a deep interest in our welfare here and we never have said or done any thing, or intended to do anything prejudicial to its standing and its usefulness in the community.

The publisher of the Farmer sends his reporter to the meetings of the society, to report its proceedings for his daily and weekly papers, and when that part of the Farmer (which we do not profess to control) is made up, his foreman very naturally selects the proceedings found in the paper issued from the same office. These details are not due to our specialty as editor. If any member of the society discovers that the papers he has read before it are omitted, neglected, or suppressed, he must hold the publisher, the reporter, or both, responsible, and not the editor, for we can under no circumstances be held accountable for that which has never come into our possession.

Any intelligent person who reads the prospectus of the Farmer will find that all communications, contributions and essays should be sent to the editor, and all subscriptions, advertisements and business matters to the publisher, in order to insure attention.

The charge against us in the proceedings of the last meeting, under the caption of "Insents," (which, by the way, is like the play of Hamlet, with the part of Hamlet left out)) is a dishonest one, and not one with which the character we thought we had been endeavoring to cultivate; and the author of the charge is consciously or unconsciously excising himself unnecessarily on our account.

So far as the matter relates to ourselves individually, we attach little or no importance to it; but the attribution to us of motives which we never for a single moment entertained, and the feeble attempt to create the impression that we have been acting prejudicially to the interests, the effacement, and the dignity of the society, imposes upon us the necessity of making this explanation—especially as the association is one of those with which we have been identified from its very origin, and which we have always esteemed.

**EDIBLE FUNGI.**

The Book on the Fungi of the United States has not yet been written, it seems—at least, it has not yet been published—and especially the book on the edible fungi. Such a book is needed, but possibly the enterprise of publishing it "would not pay." On the night of the 3d of November, 1851, a fungus sprang up in our garden nearly twelve inches in height, belonging to the order Agaricina, which differed from any we had before noticed. The pileus, or hood, was tall bell-shaped—nearly a cone—flaring a little at the bottom, which was surrounded with a broad fringe, and was nearly six inches in height. The gills, inside, were of a purplish rton in color, and rather finer than the common species. The stock or stem was over ten inches high and tapered to the top, and the pileus was so delicately poised on its upper point, that the least draft of air caused an active oscillation. The color, externally, was a tarnished white, and the surface of the pileus was covered with fine fibers, gathered in tufts, giving it the appearance of disordered phsh. The diameter at open mouth of the pileus was 3 inches. After we first discovered it, it did not increase in size and we let it remain three days before we took it up, and then only to prevent it from freezing, as the weather had suddenly changed to cold. We referred a drawing of it to Professor Farlow, of Cambridge, Mass., and he kindly determined it for us as Coprinus comatus, and further informed us that it was excellent when cooked. And there is just the "rub," for doubtless we have many edible fungi in our country, if we only could tell "other from which."

Many long years ago, when large districts in our county (that are now cultivated meadows and fields) were woodlands, we were familiar with a white species of fungus, which was commonly called "pipe-straws," because they grew in clusters, or bunches, from six to a dozen grouped together, and bent at top like a common white clay pipe. These were gathered by a few knowing families, cooked, and much relished. But the people generally did not trust them, although the common "Mushroom" (Agaricus campestris) and the "Morell" or "Maurice" (Morchella conica) were in very common use.

We have now before us a catalogue of the "Pacific Coast Fungi," giving a list of the species systematically arranged, their localities, their authorities, and the simple fact of the edible species, together with their technical names, without any descriptions whatever. This catalogue is published under the auspices of the California Academy of Sciences, and is, perhaps, the first attempt of the kind in this country.

The catalogue includes 750 species, only 61 of which are edible: but even this is an immense number, compared with the popular knowledge on the subject. It is not claimed...
Contributions.

HYBRIDISING FRUITS AND FLOWERS.

DECEMBER 28, 1881.

Mr. Editor—Dear Sir:—If I were a young man, as you know I am not—I would go strongly into this interesting operation. What a number of new and superior grapes, pears, and peaches have been already produced by this truly interesting process! But great improvements are yet to be made. I well remember Van Mons' experiment in producing many new fruits by only made progress by raising seedlings, and grafting the seedlings on older trees, thus causing them to bear in advance of the seedlings—then again planting the seeds of these and going through the same operation, until the sixth and seventh generation, each generation an improvement on the original—thus producing many superior pears. But we do not know that Van Mons practiced crossing his fruits, and as far as we know, Mr. Rogers, of Salem, Mass., was the first who practically proved that the grape could by thus crossing the grape, during its flowering, transfer the pollen from one flower to another—

and in this way he has originated over fifty new varieties! Yet many good botanists, at the time, denied that the Rogers grapes were crosses. But though they were all seedlings of a Fox grape crossed with a pollen from the exotic, or vineerla species—these grapes all lost their foxiness, and are now among our best grapes—vigorous, healthy, hardy and great bearers of delicious grapes, half native and half foreign.

Since Mr. Rogers' successful experiments, many others have tried the same, with more or less success. Notably Mr. Campbell of Ohio, Mr. Ricketts of Newburgh, New York and Dr. Wylie, of Chester, South Carolina.

There is yet plenty of room and time for our young horticulturists to "go and likewise!" All fruits and flowers may be changed in this way, and if carefully performed, the seedlings will be different and some very superior varieties may be thus produced.

As stated above, if I yet had the hope of living many years (which of course I have not) what an interest and pleasure it would be, to thus spend my leisure time producing new fruits, vegetables and flowers. J. B. G.

For The Lancaster Farmer.

PERSIMMONS.

DECEMBER 29th, 1881.

Editor of the Farmer—Dear Sir:—In the December No. of the Farmer, page 184. L. S. R. speaks highly of our native Persimmons and says "he has some very superior varieties," which is interesting to lovers of that fruit. I fully agree with him, so far as our natives are concerned. But when he says "it is useless to waste our time, trying the Japanese varieties, it reminds me of the story of the "Fox and the grapes." Poor Reynard saw some very fine grapes on a high tree, and as he could not get them, he passed along, saying "they were only sour grapes," so he did not want them.

I am fully of the opinion, that if L. S. R. would once get a taste of these Japanese varieties, he would change his opinion. 'Tis true, they are not in the northwest what they call "iron clads," but even our natives are frequently injured by severe cold winters. My own trees, some half a dozen—apparently not injured by the last severe winter, yet they, the trees, must have suffered some, as none of my trees bore any fruit this last season. The same happened with all my Chinese and hybrid pears—as none of the trees had a single fruit—while last year, two trees had ever a bushell; but yet these Chinese varieties are remarkable for bearing large crops every year; the trees appear all right, but the flowerbuds must have suffered. I have had the "Shalee," or Chinese pear near fifty years, off and on. Sometimes the trees were killed by severe winters, but I usually grafted them from friends to whom I had given grafts. These varieties of pears always produce heavy crops of large and showy pears, as do also the Kiefer hybrids, and several others no doubt would also be crossed by bees and insects. No blight on these pears.

But the Japau persimmons are very different from our natives; even before fully ripe, they have none of that astringency so peculiar to our natives. The fruit is larger and I believe they will in time be acclimated in our middle States. A friend tells me he had several varieties, and the trees froze down to the ground, but the fruit got on the sprig, and a graft on top of a native was not injured.

By planting the trees on high ground, they might live; but as many people grow orange and lemon trees in tubs, or boxes, these Japan persimmon trees can easily be grown in the same way.

J. B. G.

Selections.

FARMING ABOUT THE ROCKY MOUNTAINS.

Those of us who have become accustomed to green fields and shady woods—who have been helped by the rainfall and have done little of our own to water the crops—could not easily bring ourselves to think much of those dry regions where little but cactus and other succulent plants grow naturally; where all is gray and cheerless, and artificial watering alone produces all a human being is to eat. Yet these apparently inhospitable places are paradises for some people, and in many respects have advantages which we do not enjoy.

In the ages of the past we look to Egypt as the place in work of civilization; and yet her vast agriculture was solely artificial. There was little rain, and the mighty Nile river, as the poet says, had to bleed through a thousand pores in order to make the grain and the grass to grow. Dependent solely on their own resources, they always had bread to eat; while the countries supposed to be more favored of Nature often left their people to starve. Joseph's brethren heard the good news that there was corn in Egypt, when famine stalked all over their fair land.

There is no danger in these days of railroads and electric telegraphs that this story will ever be repeated, as "history repeats itself" in our lands. The day after the Mississippi overflowed, Massachu-
sets ships food for the inundated ones; and if the grasshoppers eat up the crops of Nebraska, the loss is made within a few days by the sympathies of Eastern brethren. But if ever a general Eastern destruction of crops should occur, who knows but these despised arid western plains would not be fully able to come to our rescue?

People often suppose that where crops are raised by irrigation, the land under culture must necessarily be limited; but this is not the case. At the very base of the Rocky Mountains most of the farmers work forty acres lot; many one hundred and fifty; while some are reported as having over three hundred acres in wheat. Of course this is nothing in comparison with what many Western people have in the more nature-avored regions; but it is very large for artificial work, and quite large enough.

As we have said, the natural charms of nature-watered lands will ever have the greatest charm for the average man; but it is a matter of great interest to watch what other places can do and are doing, and this Colorado illustration gives a new one of a point we now and then make, that, whatever may be local ills, every part of the world has its own advantages.

"GO TO THE ANT." 

Rev. Dr. H. C. McCook, a Presbyterian minister of Philadelphia who was entertained by Dr. J. A. Ehler during the meeting of students in Lancaster, has for years made close study of the ant a specialty. It has been known a long while that an ant exists in New Mexico, and devotes itself to the honey after some fashion. Travelers have told of Indian feasts in which the ant was served up "in her own honey" as a species of animated honey-cell.

But there was need of a careful examination of the habits of these ants in the part of same one who had the scientific spirit and some training in the observation of insect life.

Dr. McCook undertook the long journey from Philadelphia to New Mexico for the sole purpose of studying Paul Pry on the interiors of the honey-ants—the interiors in two senses, for his purpose was not alone accomplished by observing them at work in their underground burrows, or rather in the singular galleries which they drive through soft sandstone rock; it was also necessary to examine their anatomy and find out how and by what organs they secrete the liquid honey. All of which Dr. McCook has done, and curious enough are the habits of these little favorites of ,Esop. The sluggard would hardly profit were he enjoined to go to the honey-ant of the garden of the Gods (Myrmecocystis hastatolamia). Could he see the galleries made specially for those ants which secrete the honey, and note the care taken of them by the worker ants, and witness the absolute quiet in which these honey makers loot away the entire day and night, the moral would not be what it was intended. He would regard with envy the swollen crop of the honey-maker, the assiduity of its servants and attendants both to keep it neat and to feed it with fresh honey from the neighboring oaks, and the laziness with which, when it does move at all it pushes itself or is dragged by the busy workers from one gallery to another. And even the slender worker might not seem to the sluggard so bad an ant, for none goes out by daylight, and it is only when the sun sets that these peculiar creatures, turning night into day, sally out for food. Hereafter the revised reading will be: "Go to the ant, thou sluggard, but not to the Myrmecocystis hastatolamia."

In this place the ant has been for a century, and yet there seems no end to the variety of their tricks and performances. Till found in the Garden of the Gods, it was not supposed that the honey ants existed further north than New Mexico. They have been found at Brownsville, Santa Fe, Matamoros and the City of Mexico. Dr. McCook found their nests on the tops of dry ridges in the picturesque section on the Ean qui Bouille, Colorado, called the Garden of the Gods. He followed them at night, in the hand, for several evenings in succession before discovering what they fed on. The long trains of workers was easily traced to thickets of scrub oaks. Finally, on the third night, they were seen on the oak twigs running from one oak gall to another and sucking a juice secreted by the gall. Each active gall had the larva of the gall fly within; the ants passed by those from which the mature insect had escaped. Nests were then laid bare with pick and shovel and the workers caught in the act of feeding the honey bearers. These apparently were of the same breed, even the same cast, as the workers, and only different in the monstrous swelling of an anterior stomach, which Dr. McCook calls a crop. Like a crop, this part distends and enlarges, under the action of insects, and purifies it; and worker ants when hungry will go up to a honey ant and ask for honey from its crop, just as a young pigeon is fed from the crop of its mother. Among the many plates in this volume, which show the habits and dwellings of the ants so clearly that the story hardly needs the aid of text, we see workers feeding the honey bearers with the contents of their own little crops on returning from a midnight foray, and others taking toll both from the raiders and from the disturbed honey-bearers. These latter are seen hanging from the rough ceilings of the larger galleries in a half-torpid state, for all files look like single Delaware grapes. Dr. McCook describes them as very light of color, shining and transparent. The honey is singularly pure and liquid. In summer it has a slight tartness that is very refreshing, but in winter even this is not tasted. The Indians serve them up as a delicacy exactly like very tender fruit. The Mexicans are said to press the honey bearers exactly as if they were grapes, and even to make a sort of wine or liquor from them. Dr. McCook dissents from another observer who recommends that attention should be given to the ants as honey-producers for the market. He is of the opinion that the honey produced by honey ants is too small in each community. A large colony would not have more than 600, which would yield not more than half a pound. But it is likely that any one who should experiment with them would devise means of doubling the number of honey-makers. Dr. McCook's other argument is stronger, namely, that the destruction of insect life involved in obtaining the honey will be likely to prejudice people against it. He might have also remembered to mention the natural disgust which most people have towards insects like the ant, which are never associated in their minds with food otherwise than as corrupers and pilferers. To many people the smell of ants is intensely hateful.

It would take too much space to follow Dr. McCook through the variousntes of the intimate life of these ants; their care for each other and their occasional adulteration; their sloth and activity; their ferocity and apparent good temper under provocation. On the whole, the report is extremely in their favor. They are hard-working, stubborn, long-suffering when other ants run their mines among their galleries, and so prudent in laying up stores of food for a bad day that they actually store it in living kgs, which move, indeed, with difficulty, but still can drag themselves out of the way of immediate danger. Notwithstanding all the doctor has done, there is yet one thing. Which of the workers are they that begin to get swelled crops and finally take to the honey room? What do the honey bearers look like after several months during which the colony has not stirred abroad? Do they find other honey food beside the galls on the oak? Do the Southern colonies secrete more honey or less? How much of the honey habit is voluntary in the individual? How much chance? There is no end to the problems before the students of this singular little creature. The second part of the book relates to another Western ant, Polyommatus occidentalis, the form which would have been found in the prairies might have formed the models on which some of the earthworks of the mound-builders of the Mississippi valley were arranged. Every night these ants close their gates with large pebbles, thus reversing the habit of the Myrmecocystis. They are continually attacked by a very minute ant called the Erratic, which fastens on like bull-terriers to an ox, and are greatly dreaded by the large ant. Ants of other species run their burrows into those of the Polyommatus, "jumping their claims," but the latter do not mind. Even the eggs and larvae of two kinds have been seen in one gallery. Dr. McCook will doubtless find a prospectus for a large work on American spiders, to be printed if sufficient subscribers send in their names.

A GREAT SOUTHERN FARMER.

Brains will find or make a pathway to success under any conditions, and brains have been the wealth-creating factor in the case of the large planters. It is by business shrewdness and the economy of wholesale dealings that E. F. Bailey, of Jefferson county, Fla., succeeded in making money, though he has never improved upon the old methods of cultivating his 0,000 acres; it is by brains that the managers of the Capehart plantation near Alabamau are able to add constantly to the number of their acres, the land added last year being valued at $72,000; and it is by brains, and not by the mere vastness of his farming operations, that Edward Richardson, of Mississippi, the greatest cotton-raiser in the world, has amassed his immense fortune, now estimated at $15,000,000 to $20,000,000. The means by which Mr. Richardson has achieved phenomenal success as a
The Lancaster Farmer.

January.

Wheat Crop of the United States.

The following is the estimated wheat crop of the United States for 1881, according to the figures furnished by the department of agriculture at Washington. The figures for 1879 are from the census returns:

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<tr>
<th>State</th>
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<th>1879</th>
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<tr>
<td>Maine</td>
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<td>Total United States</td>
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A Plain and Easy Way of Curing Hams.

The principle thing in curing hams is to get them just salt enough to keep them and not so salt as to injure the flavor and cause them to become hard. Hams should be neatly trimmed and cut rounding, to imitate as closely as may the hams of commerce. Trim closely, so there shall be no masses of fat left at the lowest extremity of the hams. The shoulders may be cut in such a way convenient for packing, and they should be salted in separate packages from the hams.

Hams are cured by both dry salting and brining. When dry salting is employed, the hams are rubbed often with salt and sugar. Between each rubbing they are hunged up on platforms or tables, the surface of which is spread with a layer of salt, and each ham is also covered with salt. When taken up to rub, which is usually done five or six times, a shallow box is at hand in which to do the work.

When brine is used, prepare a pickle strong enough to float an egg and stir into it a sufficient amount of sugar and molasses to give it a sweetened taste. Some add a little salt-peter to color the meat. In moderate quantity it is commonly accepted as beneficial. Cover the hams with the pickled plate and packages where the temperature is uniform and above freezing. For hams of twelve pounds, four weeks will be sufficient; larger hams must remain in the brine a longer time. In general, three to seven weeks embraces the extreme of time required for domestic curing of hams, varying as to the size of the hams, temperature and time when they will be required for use. When it is designed to preserve hams through the summer they must not be removed from the pickle too soon.

Shoulders require much the same treatment.
as do hams, and both should be carefully smoked. The preservative principle of smoke is known as creosote. Smoke made by burning corn-coals is highly esteemed, but those engaged in curing meats on a large scale prefer the smoke obtained from dry hazelwood that have been stripped of its bark. The smoking process must not be too much hurried or the creosote will not have time to penetrate the entire substance of the meat.

Ten days’ smoking is usually sufficient, unless the pieces are very large and thick.

A process in ham-curing practiced by some of the leading packing-houses consists in creating the smoke in an oven outside of the smoke-house and passed through underground pipes into it. The smoke, rising from the floor to the top of the house, encounters two or more currents of air drawn from the outside. These currents cause the smoke to form into a rapidly revolving horizontal column which passes among the hams. The smoke is not warm, and there is no heat to melt the hams or hot air to blacken them. The hams under this process are smoked in very much less time than by the old method.

While canvassing hams has nothing to do with their flavor, it is a protection from insects, and will pay the farmer for the extra labor. It should be done before warm weather. Wrap each ham in coarse brown paper and then saw it up in cotton cloth cut to suit the size, following the shape of the ham. Wrap each one in a well-washed muleteer of lime-water and colored with yellow ochre. Hang up in a cool place to dry. The wash closes the intestines of the muslin, and the whole forms a perfect protection against insects. The room in which any kind of cured meat is stored should be dry and cool, and the darker the better.

THE PART WHICH WORMS PLAY IN NATURE.

The latest fruit of Charles Darwin’s labors in the field of physical research is presented in a volume treating of The Formation of Vegetable Mould Through the Action of Worms. The research resulted from an idea applied to that superficial layer of soil, generally of a blackish color and a few inches in thickness, which covers the whole surface of the land in every moderately humid country. The uniform fineness of the particles of which it is composed is one of its chief characteristic features, and this may be well observed in any recently ploughed field, where the top layer is exposed on the sides of a furrow.

It is the object of this book to show that the fine earth composing this superficial layer has been brought up to the surface by worms in the form of castings or excrement. We are thus led to conclude that all the so-called vegetable mould which is spread over the surface of the ground has passed many times through the intestinal canals of worms, and hence the term “animal mould” would be in some respects more appropriate than the term in common use.

Some of the conclusions reached in this volume were suggested in a paper published by Mr. Darwin many years ago, but many scientists rejected his conclusions with respect to the part played by worms in the formation of the mould, on account of their assumed incapacity to do so much work. This seems to have been an instance of that liability to sum up the effects of a continually recurring cause which has often retarded the progress of science. In order to meet the objection raised, Mr. Darwin resolved to make more observations of the same kind as those previously published, and to attack the problem on another side by weighing all the castings thrown up within a given time in a measured space, as well as by ascertaining the rate at which objects left on the surface are buried by worms.

It appears that near Mount Halli, in Staffordshire, quick lime had been spread, about the year 1827, thickly over a field of good pasture land, and which had not since been ploughed. Some square holes were dug in this field, in the beginning of October, 1837, and the earth removed to a lade, and mould, or turf formed by the putrid roots of the grasses, half an inch in thickness, beneath which, at a depth of three inches from the surface (the 2. inches intervening being vegetable mould), a layer of the lime in powder or in small lumps could be distinctly seen running all round the vertical sides of the holes. Coal cinders had spread over a part of this same field in the year 1834, and when the holes mentioned were dug—that is, after an interval of three years—the cinders formed a layer of black spots round the holes at a depth of one inch beneath the surface, parallel to and above the white layer of lime. Over this the cinders had been strewn only about half a year before, and these either lay on the surface or were entangled among the roots of the grasses. Here Mr. Darwin saw the commencement of the burying process, for worm castings had been heaped on several of the smaller fragments. After an interval of 41 years this field was re-examined and now the two layers of lime and cinders were found almost everywhere at a greater depth than before by nearly an inch. It follows that mould to an average thickness of one-fifth of an inch had been annually brought up by the worms and spread over the surface of the field. In some fragments in which he was able to compute the rate of mould formation by worms, which of course, must vary according to the nature of the subsoils, the rate, for example, must become very much slower after a bed of mould several inches in thickness has been formed; for the worms then live chiefly near the surface and burrow down to a greater depth so as to bring up fresh earth from below only during the winter, when the weather is very cold, or during midsummer, when the earth is very dry. Of course, too, relatively few worms would be found in stony ground, and their production of mould would be comparatively slow. The effect, however, of their action, even in such cases, is astonishing when extended periods of time are considered, as the following example shows. We are told that a field near Mr. Darwin’s house was last ploughed in 1841, then harrowed, and left to become pasture land. For several years it was clothed with an extremely scant vegetation, and was so thickly covered with small and large flints (some of them half as large as a child’s head,) that it came to be known as “the stony field.” Mr. Darwin says he can remember doubtless whether he should live to see these larger flints covered with vegetable mould and turf. But the smaller stones disappeared before many years had elapsed, as did every one of the larger ones after time; so that after thirty years a man could gather over the turf from one end of the field to the other and not strike a single stone with his shoes.

This was certainly the work of worms, for though castings were not frequent for several years, yet some were thrown up month after month, and these gradually increased in numbers as the pasture improved. Still more striking was the burying of a path paved with flags, stones, which in 1813 ran across Mr. Darwin’s farm. The worms threw up many castings in the interstices of these stones, and although during several years the path was weeded and swept, yet ultimately the weeds and worms prevailed, the path became covered up, and after several years no trace of it was left. On removing in 1877 the thin overlaying layer of turf, the small flagstones, all in their proper places, were found covered by an inch of fine mould. It will surprise most readers to learn how large an amount of mould may be formed by worms on the surface of a field in a single year. Mr. Darwin calculates that the castings ejected annually by each earthworm weigh, on an average, more than twenty ounces. It has been estimated by other observers that 53,707 worms exist in an acre of land; but the estimate is based on the number found in gardens, assuming that only half the number named, or about 27,000 worms to the acre, live on pasture land, and that each worm annually ejects twenty ounces, we should have fifteen tons as the weight of the castings annually thrown up on an acre of land, and helping to form the layer of vegetable mould.

Archaeologists are probably not aware how much they owe to worms for the preservation of many ancient objects; coins, gold ornaments, stone implements, etc., if dropped on the surface of the ground will infallibly be buried by the castings of worms in a few years. With worm burrows for instance, some years ago a grass field not far from Shrewsbury was ploughed up, and a surprising number of iron arrow heads were found at the bottom of the furrows, which no doubt had been left strewn on the battle-field of Shrewsbury in the year 1403. In Abinger, Surrey, on a trench being dug in 1576, the concrete floor of the atriun or reception room belonging to a Roman villa was disclosed at a depth of two or two and one-half feet. At first sight it appeared impossible that the vegetable mould covering the pavement could have been brought up by worms, but upon close inspection the concrete was found decayed and completely permeated with worm burrows. Through these channels in the softened mortar the worms have been throwing up their castings from the ground beneath, and heaping on the concrete pavement a layer of fine earth, during many centuries and perhaps for a thousand years. The coins discovered in this place dated from 133 to 755 A.D. The pavement of Beaulieu Abbey in Hampshire now lies at a depth of from 69 to 117 inches beneath the surrounding turf-covered surface. A part of this pavement has been uncovered, but re-
That this is no exaggeration may be understood from the fact that it was recently reported at the annual meeting of the Geographical Society of Vienna by Counselor Wetx, that the Volgs is decreasing in volume, owing to the destruction of wood in its valley, so as to materially affect the level of the Caspian Sea and the Sea of Azal. It is apparent therefore, that the most vital question in connection with that wonderful domain beyond the Rocky mountains is the preservation of its forests. As long as it is possible for one adventurer to build his camp fire in the wood and leave it to the mercy of the winds, thus laying waste what would be a respectable county in New York, this destruction and consequent physical disorder will go on. Appropriate legislation sternly exerted is only a partial remedy. The science of forestry, as studied and applied in the older countries of Europe, must be introduced and cultivated here.

In nearly all of the countries of the Old World forestry, in connection with climatology, geology and kindred branches, is taught in nearly all the universities, and the several governments take an especial interest in expert graduates in this branch. Particularly is this true, curiously enough, in countries where is the largest proportion of woodland, as in Russia, Sweden, Germany and Austria. The lowest occurs in Great Britain, Denmark, Spain and Holland. Over forty-two per cent of the acreage of Russia is forest, while Britain has but a little over three per cent. In Germany more attention is given to arboriculture than in any other western power.

America, of all quarters of the world, is the most thickly wooded with the prairie forest, and was of vast extent and contained a great variety of species, covering, with insignificant exceptions, all that portion of our continent which was occupied by the colonists; but now it is doubtful, according to the very best authorities, if any State of the Union save Oregon, Washington and New Jersey, has a fair share of its early woodland left untarnished. Our Eastern and Middle States were at one time dense forests, while now Pennsylvania alone has preserved her timber. The other States are compelled to send to Canada and the West to supply their market. Our government, however, began early to perceive the danger of indiscriminate forest felling.

In 1817, and again in 1831, statutes were passed to restrict spoliation. Yet it may be judged that the woodland is largely suffering when we remember that there are over 39,000 saw mills in the United States, nearly all doing a flourishing business. In some States the special legislation provides for adequate protection, and in California, a State forester has been appointed. The devastation in that State has been enormous, and in Texas also, where the supply of trees is totally inadequate and where destructive torrids prevail, together with extensive fires.

In view of the facts stated, it is plain that intelligent and prompt action should be taken by Congress to prevent further spoliation. The absolute necessity is apparent in the not encouraging fact that already over two-fifths of the entire area of the United States is so arid that even artificial irrigation cannot now redeem it; indeed, west of the Mississippi, owing to the forest fires largely, one-sixth of the entire territory alone is susceptible to cultivation. In Colorado, New Mexico, Arizona, Nevada, Utah, Wyoming, Idaho and Montana, not one-fifth of the area can ever be rendered available, and it is doubtful without expedients now unknown, if any of these territories will support more than 300,000 people at a time; and in Wyoming not over 5,000 square miles in the 100,000 square miles of area can be termed arable land.

The question then arises: What is the best method of achieving practical results for the preservation of whatever physical advantages we possess in our national domain, and no inquiry of greater magnitude can be addressed to the Forty-seventh Congress.—New York Sun.

LET THE FROST HELP YOU.

Few fully appreciate how much a freezing of the ground does to set at liberty the plant-food locked up in almost all soils. Water, in freezing, expends about one-eighth of its bulk, and with tremendous force. Water, if confined in the strongest rock and frozen, will burst it assuuer. The smallest particles of soil, which are in fact only minute bits of rock, as the microscope will show, if frozen while moist are broken still finer. This will go on all winter in every part of the field or garden reached by the frost; and as most soils contain more or less elements that all growing plants are crops need, a good freezing is equivalent to adding manure or fertilizers. Hence it is desirable to expose as much of the soil as possible to frost action, and the deeper the better, for the lower soil has been less drawn upon and is richer in plant food. Turn up the soil this month whenever practicable. If thrown into ridges and hollows, in field and garden, the frost will penetrate so much deeper. Further, plowing or spading the soil now exposes insects and weed roots to killing by freezing. Still further, soils thrown up loosely will dry out earlier in spring, and admit earlier working, which is often a great gain when a day or two may decide in favor of a successful crop.—American Agriculturist.

The great wheat exporters of Russia are becoming alarmed at the tremendous competition they have to encounter. Hungary and the Danubian principalities were the first to appear in the Western markets, but the construction of a railroad to Odessa restored the equilibrium. Then the American competition commenced, and has ruined the inhabitants of the wheat-producing districts of the Muscovite empire. Wheat is abundant in the interior—more so than for many years past—but there is scarcely any communication with the seaboard. The great military railways run right through the country, but there are few feeding lines. The roads and canals and the core of the wheat in transport are as primitive as when Russia had no competitor in the field. If a prize is to be made by the government which is scarcely to be expected present—Russian wheat will soon be driven out of the Western markets by United States enterprises and the new field opening up in India.
TOBACCO REVIEW—THE OLD YEAR AND THE NEW ONE.

We take the following excellent review of the seed leaf trade during the past year from the Tobacco Leaf Growers' Association as the ground very fairly as we think, and will be found to be of unusual interest to all persons interested either in growing or manufacturing seed leaf tobacco:

The year 1881 opened with an estimated stock of seed leaf of 127,000 cases, consisting of 52,000 cases of all kinds and 75,000 cases of the growth of 1880. The product of 1880 was estimated as follows:

- New England, 40,000 cases
- Pennsylvania, 110,000
- New York, 20,000
- Ohio and Indiana, 50,000
- Wisconsin and other Western States, 55,000

Total, 275,000 cases.

The sales in the New York market during the year were 139,096 cases, of which 13,128 were exported.

Consumption in 1881.

According to the returns to the offices of Internal Revenue at Washington, there were consumed in the making of 2,642,528,130 cigars in the fiscal year ending June 30, 1881, 90,924,000, pounds of leaf tobacco, which, at 350 pounds per case, are equal to 168,078,080 cases. This allows 224 pounds of leaf to a thousand cigars. The case is here reckoned at 550 instead of 400 pounds, both because the various packings may average that, and because the revenue calculations are based upon net weight.

From the 168 cases of tobacco must be deducted Havana, Sumatra, and other varieties of leaf used in making cigars. Substitutes for Havana are latterly used with freedom by manufacturers, and we subtract for surrogates of all kinds the equivalent of one-ninth; in other words, 18,754 cases, or about 35,000 bales, leaving about 150,000 cases of seed leaf converted into cigars; in precise figures, 149,974 cases.

The fiscal year equally divides the calendar year, and it will be a modest assumption to say that, if 75,000 of 150,000 cases were consumed in the first half of 1881, the last half, just ended, certainly approximates as many more. It is well known that the manufacturing trade was more active in the latter than in the former period. Besides the 168 judgments for cigars, not less than 25,000 cases of seed leaf were embarked in the exportation of p pipes and smoking tobacco in the past year.

Stock on Hand on January 1, 1882.

From New York there were exported in 1881 36,504 cases, and from Baltimore 3,905—total, 40,456 cases. Tabulating the disappearances, the exhibit is as follows:

- Home consumption: 175,000 cases
- Export: 40,552 cases

Total 215,552.

Accepting the estimate at the beginning of the year, namely, 3,700 cases, the above totals indicate a remainder of seed stock on the Ist of January, 1882, amounting to 111,478 cases—not an inconveni ent quantity, though large. Pennsylvania, it will be noticed is credited with a crop of 110,000 cases in 1880, and there are traditions who assert that several thousand cases might properly be taken from that figure. Those so inclined may do so.

The Crop of 1881 and Visible Supply.

Among experienced packers and samplers opinion differs widely respecting the quantity of seed leaf harvested in 1881. Maximum estimates place it at 250,000 cases; minimum at 220,000, the majority according on the latter, which sums up as follows:

- New England: 40,000 cases
- Pennsylvania: 75,000
- New York: 25,000
- Ohio: 50,000
- Wisconsin and other Western States: 50,000 cases.

Total: 220,000.

Low as this total may seem; it is probably not greatly at variance with the actual fact. Assuming that it is an approximate, the visible supply appears to be as follows:

- Old stock: 111,478 cases
- New stock: 220,000 cases

Total old and new: 331,478 cases.

Receipts in 1881.

Of seed leaf tobacco there were received in New York in 1881, 90,801 cases: 79,792.

Sales Each Month.

Cases:
- January: 7,000
- February: 10,000
- March: 9,500
- April: 6,500
- May: 7,925
- June: 17,490
- July: 10,174
- August: 11,400
- September: 22,200
- October: 17,650
- November: 5,482
- December: 4,550

Total: 139,096.

The total sales of seed leaf in this market in 1880 were 92,157 cases, showing an increase of 1981 in 38,539 cases.

Comparative exhibit of the export of seed leaf and cuttings in New York since January 1, 1881:

Cases:
- New Year: 35,504
- Same time in 1880: 7,817
- Same time in 1879: 23,923

Remarks.

The year has closed with the largest volume of sales on record. The highest previous figure was reached in 178, when 124,502 cases were sold. There is reason to believe that dealers in this staple have, as a rule, enjoyed a prosperous trade, and it is to be hoped and expected that they will have similar good fortune in this year now entering upon. Against the close of this year commences with a little larger stock than last year did, but it must be borne in mind that crop estimates are not based upon positive data, and the figures set down for the several producing sections mentioned above may be too high in some instances, as well as too low. Possibly Pennsylvania is credited with 15,000 cases too much. When the writer saw the 1881 crop in the field in the latter part of August, he would have been reluctant to believe that it would yield 90,000 cases, the droning seeming to have dawdled beyond salvation much of that which was then standing. Succeeding rains and a late growing season helped to improve the situation very materially. This fact, and the circumstance that a larger acreage than ever before was planted, incline many to the belief that the product of the state will not be far from 75,000 cases. Some estimate it at 90,000.

The above estimates for the other States are certainly not in excess. If the writer were to express his own opinion, he would credit New England with 45,000 rather than 40,000 cases. For when he saw the New England crop, which, also, was late in August, it had the promise of unimpaired fullness and excellence.

It is not necessary to refer here to the characteristics of the new crop as a whole. Some of it will be good and some indifferent, as is always the case. By and by it will come forward for sale, when its merits and demerits will be made manifest. The growing season began and ended well, but its perfection was marred by the want of rain when the rains was most needed. It need surprise no one, consequently, if some of the crop shall hereafter be found defective. Good tobacco is grown only in good conditions, and these were wanting in the hot and dry month of August, in most of our tobacco growing regions.

The premature buying and high prices paid for some of 1881 crop in the field are likely to be obstacles in the way of a completely satisfactory trade in the crop. They are surely going to impede the export trade, which is to be regretted for commercial reasons. This year it is to be hoped there will be less haste than there was last year. Yet, when early and extravagant buying commenced, the situation seemed to justify the movement. With the va

Prices.

Prices continued steady throughout 1881. Except the slight advance effected on some grades in August when only a half crop was anticipated, no change is perceptible in the year’s tables of quotations. The market commenced and closed strong. Ohio shipping sorts are a trifle lower than they were, but all other kinds rule at the long prevailing rates.

Quotations January 1, 1882.

New England—Crop 1880, wrappers:
- Common: $150
- Medium: $158
- Fine: $200
- Selects: $245

Seconds: $110

Havana, unselected: $50

Pennsylvania—Crop 1880, assorted lots:
- Low: $109
- Fair: $135
- Fine: $190
- Wrappers: $30

Ohio:
- Crop 1880, assorted lots: $145
- Wrappers: $11 to 20

Wiscosin:
- Crop 1880, assorted lots: $125
- Wrappers: $12 to 20

Havana seed: $15

Bucks County Agricultural Society.

At the annual meeting of the Bucks County Agricultural Society, held at Reading on Saturday afternoon in the Courthouse, the old officers were re-elected, to wit: President, Jacob G. Zerr; Treasurer, William S. Kitter; Secretary, Cyrus T. Fox. There were present for the business, also, a large and effective list of the stockholders, representing a capital of about $10,000, and with a balance of $1,500 in its treasury. A resolution was adopted authorizing an agreement with the Park Commissioners to open the fair ground for the purpose of a public park, provided the consent of the County Commissioners be obtained, and that the county councils appropriate the money necessary to the improvement of the premises.

OUR LOCAL ORGANIZATIONS.

LANCASTER COUNTY AGRICULTURAL AND HORTICULTURAL SOCIETY.

The regular monthly meeting of the Lancaster County Agricultural Society convened in this city, Monday, January 22. The following named persons were present: M. D. Keeling, Creswell; Daniel Smyeck, city; H. M. Engle, Marietta; Dr. C. A. Greene, city; Casper Hiller, Comestoga; Henry Kurtz, Mount Joy; W. W. Grist, city; Hebron Herr, West Lampeter; Eno. Weaver, Strasburg; F. R. Difenderfer, city; Calvin Cooper, Birn-In-Haud; Johnson Miller, Lilith; William H. Brosius, Liberty square, John H. Landis, Millersville; J. H. Hershey, Salunga; S. A. Hershey, Salunga; S. P. Elzy, city; C. L. Hunsecker, Manheim township; Wash L. Hershey, Chickies; R. H. Hoover, Manheim township, J. M. Johnston, city.

President J. F. Wilter being absent, Vice Pres. dent Henry M. Engle swung the gavel.

Enos H. Weaver of Strasburg, and Hebron Herr, of West Lampeter, were elected members of the society.

Crop Reports.

Calvin Cooper reported the grain fields in fine condition; abundant rain has fallen and everything promises well.

Henry Kurtz, of Mount Joy, never saw better wheat and seldom saw the grain so promising as at present; especially is this the case with wheat sown on tobacco land; from which fact Mr. Kurtz concluded that tobacco does not injure the land. There is considerable short leaf about his neighborhood and much of the tobacco does not color much.
John H. Landis, of Millville, said dandelions in bloom in Bucks county, last week, and saw good wheat on his own native Manor. Half the tobacco is stripped.

Marvin D. Kendig remarked that a neighbor seeded eye in the latter part of November, and it came up well.

The normal wheat is good, said H. M. Engle, but much freezing and thawing during December may have endangered it more or less; and as young clover is pastured closely Mr. Engle feared the effects in spring. Rain fall for December was 5.61 inches; for the year 38.54 inches.

Election of Officers.

On motion of Johnson Miller, the regular business was then suspended and the society proceeded to nominate and elect officers for the ensuing year.

For president, Joseph F. Witmer, of Paradise, was renominated.

For vice presidents, Henry M. Engle, of Marietta, and Jacob B. Garber, of Columbus, were renominated.

For recording secretary, M. D. Koehler, John H. Landis, M. B. Cooper, positively, and permanently declared nominated, and finally the honor was cast upon John C. Linville, of the gap, who was absent.

For corresponding secretary, Calvin Cooper, of Bird Township, was renominated.

For treasurer, M. D. Koehler, of Creswell, was renominated.

There being no more than the constitutional number placed in nomination for the office above the nominees were declared elected:

For members, the following were nominated and the figures indicated designate the number of votes each received: Wm. H. Brosius, 11; John H. Landis, 5; Casper Hiller, 7; Calvin Cooper, 6; Enoch H. Weaver, 6; Hebron Herr, 5; Daniel Smeych, 4; Johnson Miller, 4; E. S. Hoover, 4. The first five named were declared the daily elected members.

Casper Hiller, of Cootesport, read an essay entitled "Can the Grain Grower Dispense with Nitrogenous Fertilizers?"

In order to have a proper understanding of the subject it may not be amiss to give the analysis and cost of several of the principal manures in the market.

A ton of well prepared bone contains about 400 pounds of phosphoric acid, valued at about 380 pounds of nitrogen, valued at $15.

A ton of well prepared rock phosphate contains about 340 pounds of phosphoric acid, which can be bought for $8.50.

A ton of soda ash costs about $90 and contains about 20 per cent of nitrogen.

These figures show that nitrogen adds one-third to the value of a ton of bone, and in the allusions to soda the nitrogen makes up the whole cost, showing that nitrogen is an expensive ingredient, and for that reason the question put to me is worthy of consideration.

My experiments have been on too limited a scale to be of any value, as far as the corn only the indications are that nitrogenous fertilizers are non-paying on my soil.

In view of this I think it probable that phosphate rock: raw bone, dissolved bone, and a nitrogenous flesh meal would be the desire to correct.

In the first place he accusers Dr. Rathvon of intentionally omitting his (Dr. Greene's) name from the reports. The Farmer takes his reports from the Enquirer, and whatever blame is attached to the omission of Dr. Greene's valuable essays from the reports, must therefore be borne by the editor.

We tried to give a faithful report of the proceedings, and only determined to exclude Dr. Greene's name after he had taken us to task for maliciously misrepresenting him by publishing a stricture upon the tobacco buyers in this city, which he now says was not his fortune but the editor's fault. The society had decided upon the omission of Dr. Greene's name from the reports, after the editor had given him notice of the omission, and had taken him into his confident previously.

The comments of the essay as corrected, and the subject of the matter as corrected are published, the former being delivered at the February meeting, and if the chances not to be noted, let him bring some other congenial companion.

The motion was not pressed to a vote, but it was favorably regarded by the members present.

Mr. Engle suggested competitive essays as a means by which to awaken some activity.

C. L. Hunsheeter spoke the strictures of some of the reporters on the political discussion at the last meeting both severe and unkind. He had yet to learn that farmers are not allowed to express their opinions to their neighbors. Dr. Greene's essays could well be dispensed with, and was favorable to Mr. Engle's suggestion in regard to competitive essays.

Calvin Cooper suggested that the chair appoint an essayist at every meeting and accept no excuses however.

Ephraim S. Hoover thought that none but agricultural and horticultural subjects should be introduced for discussion—no politics; he also thought if an essayist was appointed, the appointee would feel it was a duty to respond.

Mr. Hunsheeter observed that the chair be empowered to appoint an essayist at each meeting, the appointee to choose his own subject; provided, however, it is germane to agriculture and horticulture, not politics, for then the "reporters would catch us by surprise."

Calvin Cooper moved to amend by imposing a fine of fifty cents for failure to perform the duty assigned, and Ephraim Hoover, by proposed amendment, increased this sum to $1.00. Both of these amendments were voted down, and the main question then came up for discussion.

C. L. Hunsheeter was appointed essayist for the February meeting.

The State Grange.

The ninth annual session of the State Grange of Pennsylvania was held in the parlor of the Park Hotel, in the city of Williamsport, Pa., during the week beginning at 10:30 o'clock p.m., on Tuesday, December 15th, 1881. About four hundred Patrons were in attendance during the session, representing one hundred and twenty-seven Granges, located in fifty counties of the State.

On Tuesday evening an address of welcome, was delivered by Hon. C. D. Eldred of Grange No. 71, Lycoming county, which was responded to on the part of the State Grangers of Pennsylvania, of which county. The annual address of State Master L. Rhone was delivered the same evening.

Wednesday's Proceedings.

On Wednesday morning the various committees were announced by the Master, and reports were heard from the different officers, the latter showing the order in the State to be increasing in membership and improving in efficiency of work.

W. A. Armstrong, Master of New York State Grange, addressed the afternoon meeting. Also Dr. Calder, of Dauphin county, State lecturer.

A public meeting was held in the Court House on Wednesday evening, with Hon. Wm. J. Wood, of Sharpsburg, Pa., the first speaker, referred to the importance of protecting the agricultural interest, showing that all other business is greatly dependent upon the prosperity of the farmers, and stated briefly the objects of the organization there represented.

A gentleman, who had been an agent of the Department of Agriculture, also spoke. The Rhone, he asserted, had submitted to the hospitality and persistence of the Grangers. He did not propose to discuss the technology of the farmer's occupation. He hoped to see the Pennsylvania farmer put on an equal footing with the Western farmer. Improved methods here would soon make Pennsylvania soil as productive as the thin exhausted soil of the West.

He congratulated them present for the manifest indication of a revival of the farming interest, referring to the large audience of farmers before him.) Dr. Calaver spoke of the relation of farm work to the daily evening of the farmer, and contrasted it with the East, where the farmers live in villages, thus affording better opportunities for social intercourse and mental improvement. He claimed that the Patrons of Husbandry had done much toward making up this deficiency. He referred to the great wealth of information amongst farmers, citing numerous instances where this want was most noticeable.

He believed there was no better way of inducing
THE LANCASTER FARMER.

PAPERS READ.

Prof. Storke read an interesting paper on the swarming of the "Brown Ant," (Formica Rufa) early in the month of November last. This was some weeks later than the usual period of swarm- ing, but the present past season has been rather extraordin- ary for its mildness—causing many trees to re-blos- som, and in some instances to bear a second crop of fruit. As there was no weather during which ants could have swarmed at their usual period (August and September) the phenomenon might well arise, "had the same colony swarmed a second time, as the apples, pears, cherries, &c., blossoms.

Prof. Rathvon read an illustrated paper on a spe- cies of fangus (Ophiopium Canxus) which sprung up in his garden on the night of November 5th, 1881. This fungus was described by Mr. H. E. Young. At a meeting of Teachers in Ireland, the chairman put the negatve only, and if no one voted "ay" he would declare the motion "passed unanimously."

Elections.

Mr. H. M. Herr was balloted for and unanimously elected an active member of the Society.

The annual election of officers resulted as follows: President, Prof. T. E. Bailer and J. H. Dubbs; Vice-President, Dr. K. H. K. Tripler; Secretary, Dr. M. L. Davis; Treasurer, Prof. S. T. Rathvon; Librarian, Mrs. L. M. Zell; Curators, S. T. Rathvon, C. A. Helmuth, Jno. B. Kevinski and Wm. L. Gill.

New Business.

Being the annual meeting, and reports and elec- tions occupying the morning, no business other than the ordering of bills reported to be paid, was brought before the Society.

Extract from a Report on General Finance.

"We have tabulated these financial statistics of the Society merely to show by comparison with other associated enterprises in the city and county of Lancaster, what a little wheelbarrow we have been pushing forward during the last twenty years, when ac- cording to the magnitude of the subject, we should have been enabled to drive a six-horse Conestoga Team."

"It would be quite safe to say, that such a collect- ion as the society possesses, could not now be made for ten times the amount it has cost us; and this fact should stimulate a desire for its preservation and perpetuation, among the intelligent and moneyed citizens of Lancaster; for, extinguish this institution and its magnitudes, and we are assured, the archives could not be formed again for fifty years to come. No future scientists would feel encouraged to begin such a work again. The public seems to have very little comprehension of its magnitude, especially since the new halls have been so largely crowded away in drawers and boxes. Indeed, there are people who seem to think, that we are in some way, peculiarly enriching ourselves."

After a very pleasant meeting, and a general inter- change of sentiment, the society adjourned to meet on the last Saturday in January, 1882.

Now is the time to subscribe to The Farmer for 1882. Subscription price only $1 per year, the cheap- est Agricultural Journal in the country.

the acquisition of knowledge and of retaining it than in imparting it to our associates, and that grange meetings afforded an excellent opportunity for doing this.

Anna Holstein, of Montgomery county, read an essay on "Woman's Work in the Grange."

Past State Master V. E. Pleolet discussed the rela-
tions of the Grange to corporations. He said the Grange grew out of necessity for some association of farmers and mechanics to protect their interests.

Twenty-five out of the fifty millions of people in our county are directly interested in agriculture, yet we have almost no voice in legisla-
tive bodies, where corporations are regulated. It is- thought the corporation laws, if properly regulated, they might be made by law more effectually. Transpor-
tation companies should only be allowed to charge what would be a fair compensation, and not "what the traffic will bear." Effective laws have been es-
tablished in Illinois and even in Georgia, where the railroad companies are required to post up their rates of freight and fare in their station houses. He wished it understood that the patron made no tax on associated capital, but demanded their rates without unjust discrimination.

The courthouse was crowded with citizens of Will-
grams and farmer from the vicinity.

The Proceedings on Thursday.

On Thursday the Secretary made his report, showed the active Grange Literature in the State and about 12,000 members.

The Park Hotel has ample accommodations for entertaining the entire State Grange, as well as affording a suitable place for meeting, and nearly all the members availed themselves of its hospitality. The citizens of Williamsport have shown a lively interest in making our sojourn here as pleasant as possible, and through their instrumentality and the kindness of Superintendent Neilson, of the Elmhurst Division of the Northern Central Railway, a free ex-
cursion was tendered members to the dairy farm of Judge Smith, several miles south of the city, where the Cooly system of setting milk is being tested in connection with the soiling method of keeping cows.

The representatives in attendance from Lancaster county are John H. Eplar, of Coway Grange, No. 67, and W. P. Bolton and wife, of Fulton Grange, No. 86. The State Grange adjourned at noon on Friday.

THE POULTRY SOCIETY.

The regular monthly meeting of the Lancaster county Poultry Association, not having been held on the first Monday of the month, as is customary, was held Monday morning, January 9, 1881.

The meeting was called to order by President Theo.

The following members were present: H. H. Tchahy, Lititz; J. B. Lichty, city; George A. Geyer, Silver Spring; T. Frank Evans, Lititz; F. F. Dillen- derfer, Charles E. Long, city; J. A. Tobler, Schoeneck; John A. Schum, W. A. Schon-
berger, city; Thomas A. Monthoy, J. B. Long, city; T. D. Martin, Lititz; Dr. E. H. Witmer, Neffs-
ville; J. A. Garman, Leacock.

The minutes of the last meeting were read and ap-
proved.

J. B. Lichty gave notice that he would offer an amendment to the Constitution providing for the an-
nual election of the officers of the society in Feb-
rury of each year, instead of in January as now.

Treasurer's Report.

T. Frank Evans read his annual report, by which it was shown there is present in his hands the sum of $0,25.

The Secretary appointed Messrs. Stobler and Long to audit the Treasurer's accounts. This was done, and they were found to be correct. This report was received and the committee discharged.

Election of Officers.

H. H. Tchahy withdrew from the candidacy for President. An election being had, the result scot

Millennial Business.

Charles E. Long offered a resolution that exhibi-
tors from a distance drawing premiums be paid in full.

A resolution was offered instructing the Secretary to notify members who have not paid their annual dues to do so by March first. Carried.

The new president, George A. Geyer, assumed the duties of his position.

On motion the old Executive Committee were in-
structed to hold the next regular meeting.

The Secretary stated that 350 entries have already been made, and a good many more are expected.

The Lancaster county exhibitors have not come out so strongly. There will be 300 entries of pigeons.

The varsity fair is much larger than last year.

The
tllevoing of the Colorado potato beetles. An annual meeting of the society was held at the residence of Mr. Chas. A. Heinich, East King Street, on Thursday evening, December 29, 1881, and was well attended. The president, Prof. Stahr and the secretary, Mr. T. B. Geyer, conducted the business.

As the proceedings of the Society are generally published in three different newspapers, they are usually not read, unless to correct errors. After the customary opening and collection of dues, the fol-

Liberal.


Annual Report of Commissioner of Patents, for 1880, 470 pages quarto.

Alphabetical list of Patents and Inventors, January to June, 1881, 236 pages quarto.

Proceedings of Academy of Natural Sciences, for January, February, and March, 1881.

Catalogue of the Fungi of the Pacific Coast, 46 pages, med. octavo, from California Academy of Natural Science.


Lancaster Fair, for December, 1881.

Four Books Catalogues and safety Circulars.

One Envelope, containing 19 Historical and Bio-

The following were entered: 160 books, pamphlets and serials to the Library during 1881, besides a large number of catalogues and circulars; also, 37 enve-

Topological; 100 in Pe-

The Curators reported 2,500 plants added to the Herbarium in 1881, besides the 5,100 original species, and 300 in Botany; 1,000 in Geology; 50 in Historical specimens; 150 Entomological; 500 in Pa-

The Curators reported the receipts, including the balance on hand last January, for the year 1881, and the expenditures $25,114 leaving a balance in the Treasury of $18,755. The whole amount of cash received by the society during 20 years was $28,856, and the expenditures the same, less the balance now in the Treasury.

Papers Read.

Prof. Storke read an interesting paper on the swarming of the "Brown Ant," (Formica Rufa) early in the month of November last. This was some weeks later than the usual period of swarm-
AGRICULTURE.

Look After the Implements.

As winter approaches we cannot refrain from say-
ing that the careful, thoughtful farmer never allows his plows, harrows, cultivators, mowing and reaping machines, hay tedders and other implements and machinery, to be exposed to the weather, or where they can be damaged by fowls or stock. It provides a covered place for them all where the rains and snows cannot penetrate, with either board flooring or placed on scantling to raise them from the ground. In this manner the implements and machinery will be better preserved for another year, and likely should be painted over slightly with any cheap oil paint, and it will add to the preservation and appearance of all implements and machinery, especially if the woodwork is also painted. When this is incond-
venient the iron should be cleaned of dirt and grease, and given a coat of oil or paint. Almost every blacksmith at any time can supply the farmer with the general summing up of the business of the year, let the farmer take into account the return from the garden and orchard or fruit garden. We do not propose to advise the farmer to extend this or that kind of crop, or to grow a large variety of garden vegetables is living behind the age. The man who sees only the market value of the crops, or makes the most of the yields of his rakes, hand-
some lawn and a flower garden filled with choice plants; but he only half lives who is blind to the beauty of these things.

Making Butter.

The following method of making butter was pur-
sed by the Farmington Creamery Company, Farm-
ington, Conn., in the production of a premium lot: The butter was made at the creamery, was received once a day, was mixed at once in a receiving vat, thence drawn into deep, open vats, and buttered by revolving, and boiled in a pool of cold spring water. It was skimmed in twenty-
hours, the cream again mixed in a vat and all buttered, and boiled in the same manner. The butter was worked by a lever worker, and took twenty-two hours to be worked. It was allowed to stand in the creamery, was received once a day, was mixed at once in a receiving vat, thence drawn into deep, open vats, and buttered by revolving, and boiled in a pool of cold spring water. It was skimmed in twenty-
hours, the cream again mixed in a vat and all buttered, and boiled in the same manner. The butter was worked by a lever worker, and took twenty-two hours to be worked. With the butter being twenty-two hours it was again worked over and packed in tubs. If our butter has any particular merit we think it is the result of a few simple precautions, better butter

How to Make Tea and Coffee.

The Scotch do not say "to make tea," but "to brew the tea." They say "to make coffee," but they say "to brew the coffee." Good tea is an infusion, not a decoction. By boiling the tea leaves are bruised, and the principle, the tannin, is taken off the delicate "fumes" or vapors of the leaf. For this reason, the tea-pot should never be kept hot by letting it stand on the top of a cooking stove or a lamp, or where it is likely to be made to boil. Excess-
ively bad tea is made in some parts of the country by boiling it in a saucepan for an hour, often until it is a small piece of tea into a large kettle of water, and letting it boil till they have extracted all the coloring matter, in which they boil till you have extracted all the coloring matter, in which they boil till you have extracted all the coloring matter, in which they boil till you have extracted all the coloring matter, in which they boil till you have extracted all the coloring matter

Ensilage Solus.

There has been of late considerable falling off in the talk about silos and the value of ensilage as a separate food. At the beginning of the mists the preserved cornfield in its perfectly fresh, green state, has been the object of the greatest attention. Milk, butter and cheese were to be produced, consequ-
ent action of the cattle maintained, and health secured solely by the feeding of ensilage; and, altogether, it was to be effected at a rate of economy that must satisfy every one at short notice that this newly discovered method of feeding the products of the earth at the least expense must com-
mand itself to the favorably attention of every agri-
culturist.

But has it done so? We need hardly say that it has not. Ensilage by itself, as a food for even milk cows, is not recommended by those who seem to be mostly experienced in the use of it. Almost all ex-

HORTICULTURE.

Rosebushes.

A correspondent of the New York Observer says: Never give up a choice but destroying rosebush till you have tried watering it two or three times with pure water. For instance, the bushes of roses which grow in hot and dry weather should never be watered with pure water, as this would burn up the roots of the plant, and the flowers on the bushes would be much reduced in size and beauty. It is important to keep the plants clear of insects by spraying them with rose oil. Quercus chias can be obtained at the apothecary's.

Pears.

The pear as a fruit stands next in popularity to the apple, and has, like it, been known and cultivated from time immemorial. It is mentioned by the ear-
liest writers as a fruit growing abundantly in Syria, Egypt, as well as Greece, and it appears to have been brought into Italy from these places about the time that Sylia made herself master of the latter country (65 B.C.), and from thence it spread over Europe to Britain. Homer mentions the "peasant pear" as one of the fruits of the orchard of Laertes (Odys. 24. 2901). Theophrastus often speaks in terms of the abundance of different kinds of pear trees in his works. That learned physician of ancient times, Galen, considered pears as containing in a greater degree more strengthening and astrin-
gent virtues than apples. The Greeks and Romans have several kinds of pears whose names included their taste and form. Pliny describes about forty varieties cultivated in Italy. Of all pears, he says, the Crustumine is the most delicate and agreeable; this fruit Columella places first in his catalogue. Then there was the Falerian pear, which was especially esteemed for its abundant juice, which Pliny com-
pares to wine.

The Tiberian pears were so named because they were the sort Tiberius, the emperor, preferred, and they grew to a larger size than most pears; others were named after the persons who had introduced or found the pears. The pear known to us is the pear named after Cato, and associated with the name of proud pears, because they ripened early and would not keep. There were also winter pears, pears for baking, etc., as in the present day. Nevertheless, Pliny did not consider this fruit, in an uneaten state, good for the cold season, for he states all pears whatever are good for a beefy meat, even to those in good health, unless boiled or baked with honey, when they become ex-
tremely wholesome to the stomach. Some pears were used as counter-poison against venomous musk-
rooms; the ashes of pear trees were also used for the same medical purpose. The ancients appear to have had a curious notion respecting the effect of this fruit on beasts of burden, for Pliny tells us a

load of apples or pears, however small, is singularly fatiguing to them. The best way to counteract this, they say, is to give the animal some tea, or at least some water, which is often in two feeds per day; but to secure proper results "some concentrated feed must be added," such as cakemake bran, etc. And this is why the question is now treated. We don't pretend to say that this combined food is not better than what is given in two feeds per day; but we beg to be allowed to say, without being much abused for it, that we doubt the economy involved, or that any labor is saved, or that any profits are obtained over the system in vogue before a silo ever was built.

Bad Seed.

It should be remembered that it is easier to de-
terminate a crop by choosing bad seed, or even
carelessly neglecting the selection of good seed, than it is to improve upon a variety already acknow-
ledged to be good. The down hill road is the easiest traveled.

Notes on Orchard and Garden Work.

One who depends upon a garden and orchard for his living will be very apt to know which products bring him the best returns. With the farmer the orchard and the garden are often looked upon as of little importance, if not regarded as necessary evils. Both masculine and labor are grudgingly supplied and these fields are often left till up in summer. The general summing up of the business of the year, let the farmer take into account the return from the garden and orchard or fruit garden. We do not propose to advise the farmer to extend this or that kind of crop, or to grow a large variety of garden vegetables is living behind the age. The man who sees only the market value of the crops, or makes the most of the yields of his rakes, hand-
some lawn and a flower garden filled with choice plants; but he only half lives who is blind to the beauty of these things.

January
BETTER. It is only a healthy amusement to give a coffee mill a full turn. Coffee is easily roasted at home by putting a coffee-funnel in the top of a steel or iron cylinder or barrel of small diameter, standing on two feet, over a copper pan or pot filled with burning charcoal. A handle like that of a griddle.

If you make the coffee in a griddle, put into the glide a groove of coffee which lies between the first of all only four a few spoonfuls of boiling water, sufficient to it, and after letting it stand 1.5 years. Coffee is made in the rest of the boiling water, and let it percolate. The time to take coffee is either in the morning (with a large supply of water) or for an early dinner. To the evening it is to be avoided, unless you intend, like Lady Mary Sackville, to serve dinner in which you are sure to be punished next morning.

BUTTER EASILY POISONED.

A farmer's wife writes: Of all the products of the farm, cream is the one which attracts the most noxious odors floating in the atmosphere. Our people hold some real in the cellar, from which a little black smoke, and the shadow of a long plume of smoke, issue from the milk-room when the wind was in a certain direction, the atmosphere was heavy, and the cheese was being made. It would taste like the disagreeable odor coming from the pond. As soon as the pond was drained there was a change of a pleasant odor. It is remarkable how easily butter is spoiled.

HOUSEHOLD RECIPES.

LIGHT GINGERBREAD.—Three cups of flour, one of sugar, one of eggs. Mix well in a saucepan, add milk, half a table-spoonful of ginger, one teasp. of sour molasses, a little lemon extract, a pint of sour milk, and a pint of water. Boil these ingredients together until the mixture is nearly solid. Then add the flour and a half, which is sifted. Let this mixture come to a boil and stir in sour cream enough to make it the consistency of thin batter, add salt and salt, another tumbler of sour milk, and smaller tumbler of sour cream. Let the mixture cool off, and then remove from the fire and beat it, with three or four egg yolks, and sprinkle the top with two pounds of sugar. Pour into an earthen baking dish and bake moderately three fourths of an hour.

LIVE STOCK.

The Cow of Cares. The comfort of the cow has much to do with the milk it yields, and the anxiety of the dairyman, produced by flies and excitement caused by fighting them, makes the night's milk still poorer than it otherwise would be. Chemical analysis has shown a great falling off of fat in the milk in the same cow when chopping and fighting are evidence of the cow affects the fat in her milk. Extremes of heat and cold also affect the milk. In a case where a cow was brought from New York to Albany, a difference of several hours in the water above the knees, there was a falling off of the butter produced from the same milk. For this reason it is necessary to keep up the animal heat by carrying off the water. When we consider the fact that in boiling milk or boiling a soup the effect that must be produced by excitement on the nervous system of the cow. In a case occurring here, where a cow was milked by a passionate man, who whipped and cajoled the cow into giving milk, the milk given to a child who had been healthy, but after using the milk, became ill and suffered from intesinal irritation, favored by the medical men who thought it blamed the milk. This sickness was attacked directly by the milk of the ill-treated cow. National Live Stock Journal.

Charcoal for Sick Animals. In nine cases out of ten when an animal is sick the digestion is wrong. Charcoal is the most efficient and rapid corrective. The bled man came in with the intelligence that one of the finest cows was very sick, and a kind neighbor proposed the usual drone and an old established formula of meat and water to examine the cow, concluded that the trouble came from the milk, and the physiologist painted the cow with partially carbonized charcoal to be given in water. It was mixed in a junk bottle, the head turned upward in the scantiest water possible, and the improvement was visible, and in a few hours the animal in the pasture quietly grazing. Another instance of a sick cow that received a year's milk, which had become badly blotted by eating green apples after a hard wind. The bilat was so severe, it was necessary to use charcoal and brandy in old rum, and with the charcoal a cupful of fresh powdered charcoal was given. In six hours the appearance of the bilat had gone, and the heifer was well.

HINTS ABOUT HORSES.

One should be restricted for an old horse, but not for a little former, through age and defective teeth, cannot chew them properly. The young horses can do so, and they are thus protected against malnutrition, and obtain all the nourishment. There is no nourishment in bad hay, and cheapness should never tempt you to use it. Old horses can be starved on hay with salted water. It is more easily digested.

For a saddle or coach horse half a peck of sound eighty-fourteen or good hay is sufficient. If the hay be of good quality and fed regulary, a little more may be used. A horse which works harder may have rather more; but let it be mixed with other food. Hard feeding is wasteful. The better plan is to feed with chipped hay from a manger, because the food can be seen about, and is more easily chewed and digested.

Hay for Swine.

In the opinion of an exchange buy is very beneficial to swine. Swine need rough food as well as horse feed. To prepare for it you should have a cut box or hay box to keep it airtight, and a manger. The hay to be cut as short as possible; or cut off in a short time, to keep it dry. It is easy to make, and cooked cannot be wholesale. Take a pound of juicy from which all the juice is taken, and return it to an inch square; salt and pepper it slightly, take a large jar to hold two pints; pour into it a pint and a half of boiling water, and after you have removed the skin, pour over the jar a sauce and let it boil slowly for four hours; remove any fat present.

There are many recipes for making of milk, one cup of molasses, one quarter pound scone dipped fine, half teaspoonful salt, one cup of milk, one cup of molasses, and one teaspoonful of salt. Let this mixture come to a boil and stir in sour cream enough to make it the consistency of thin batter, add salt and salt, one pound of sour milk, and smaller tumbler of sour cream. Let the mixture cool off, and then remove from the fire and let it become partially cool then stir in sour cream to the consistency of thin batter, and pour into an earthen baking dish and bake moderately three fourths of an hour.

WARS ON HORSES.

These fungous growths appear in the horse most frequently about the mouth, nose and lips, but they are also found about the tail and perineum. They are sometimes found in large numbers about the lips of mules, and are generally rubbed off, or dried up by hoof, or hoof. But when the horses are deep-rooted, they may be cut off by passing a needle through the water, armed with double thread and tied tightly. After this, they may be removed. They prevent the possibility of the ligatures being rubbed off. Or they may be painted over with the permanent natile polish, which will entirely destroy warts of a large size, or they may be removed with a knife. —Natl. Agr. J.

The Horse Shoe and its Application.

The number and disposition of the nails depend upon the kind of soil. For speed the light draft, the horse shoe serves best, and for heavy horses can be used for short draught. They are sometimes used in large numbers about the lips of mules, and are generally rubbed off, or dried up by the horses. But when the horses are deep-rooted, they may be cut off by passing a needle through the water, armed with double thread and tied tightly. After this, they may be removed. They prevent the possibility of the ligatures being rubbed off. Or they may be painted over with the permanent natile polish, which will entirely destroy warts of a large size, or they may be removed with a knife. —Natl. Agr. J.

The Guardian, a monthly magazine for young men and women, Sunday-schools and families. Edited by Rev. J. H. Dubs, D.D. It is a long time since we have seen the face of this "old familiar," which, if we recollect rightly, originated here in the city of Lancaster, under the editorial auspices of the Rev. E. L. White. It has been published nineteen years ago, and for a time was also printed here.

That the Guardian should have been permitted to exercise its vigilant functions for such a long period without break or interruption, evinces that it has been faithful to its trust, or has had a cordial support from the public, and that it has been unable to compete with the other periodicals. (January 1882) of this excellent publication has found its way to our table; and we scan it with more than ordinary interest, not only on account of old memories, (for some years it was on our exchange list) but also for its healthy tone, its undoubted moral and intellectual attitude, and its continued editorial ability. It is an octavo of 36 pages, in tinted covers, and is issued by the Reformed Church.
THE LANCASTER FARMER.

Publication Board, 507 Arch Street, Philadelphia, Pa., at the very low price of $1.25 per year in advance.

We congratulate the board in securing an editor so worthy of being the successor of such distinguished predecessors as Doctors Harbaugh and Bauman. We feel confident that the Guardian will lose none of its "Life, Light, Love," under the editorial management of Mr. Riley. It cannot, of course, commend it to the favorable consideration of our readers, whatever their religious faith may be.

Faithful to its motto, it can inculcate nothing that will be detrimental to that spiritual rest for which our frail humanity is yearning, in the eternal world.

Address of Hon. Geo. B. Lorino, Commissioner of Agriculture, before the General Convention held at Atlanta, Georgia, November 21, 1891. Uniform in size and mechanical execution with the Serial Bulletins of the Department of Agriculture—pp. 36.

We are indebted to Prof. C. V. Riley, for a copy of this valuable contribution to the Agricultural and Entomological Literature of the Country, as developed through cotton culture and its protection from the ravages of noxious insects.

Practical and applied entomology certainly means success, in its relations to the general crops of our diversified agriculture, and it may now be seen in favored localities. Prof. Riley says:—"Whenever we begin to carefully estimate the losses which, as a nation, we sustain from insect ravages, the figures always start, and you will doubtless be surprised to learn, that this annual toll is actually a single year nearly $400,000,000."

This estimate is just as likely to fall far below the real amount of damage, as it is to reach beyond it, but under any circumstances, who among our readers can practically comprehend this amount in detail. Ten hundred thousand dollars—or one million—seems to be a vast amount, appropriated annually to the extermination of insects—the cotton worm, the natural history of the cotton worm—improved appliances—poisoning from below, &c., exemplified by a detailed context, and only requires a vigilant and intelligent co-operation to produce the desired effect.

It is not sufficient that we know what to do, but that we know how to do it.

LETTER FROM THE COMMISSIONER OF AGRICULTURE, FOR THE YEAR 1881, 58 PAGES—UNIFORM WITH THE ABOVE.

This report contains concise statements of work in the various divisions of the Agricultural Department, including—Division of Garden and Ground-Bazsalal Divisions—Microsperic Division—Chemical Division, and Miscellaneous Publications. The report includes a detailed analysis of the statistical data, and makes it possible to compare the farm yields of different counties and states, in order to determine the best methods of farming and to improve agricultural practices.

The American Farmer, No. 1, Vol. 2, series 9, comes to us a four-columned quarto of sixteen pages, and henceforth it is to be published semi-monthly, at $1.50 a year, by Samuel Sand & Son, W. Baltimore Street, Baltimore, Md. The American Farmer therefore includes a four-columned Distillation section from July 1, 1890, to June 30, 1891.

Statistical Division—Forestry—Artesian Wells—Agriculture on the Pacific Slope—Examination of Water-Drinking Water—Making of Sugar from Sorghum—Tea Culture—Contagious Diseases of Domesticated Animals—Sugar from Beets, and the Operations of the Distilling Office. It appears that Congress has only appropriated $185,200, for all the divisions of the department for the year ending June 30, the small amount which seems small, compared with the subject of Agriculture—the basis of all the other interests in the country. A copious appendix is attached to this report, containing communications from competent authorities, on contagious Fieber-pneumonia, and other topics important to agriculture.

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The St. Louis Miller is published by Thomas & Stone, and as above indicated, is semi-monthly, at $2.60 a year, or $1.25 for six months; and every intelligent and progressive miller ought to be a subscriber.


This is a folio (by 21) of 24 pages, and 6 columns to the page, abounding in interesting historical, statistical, geographical, and local matter. The quality and make-up of the paper are excellent, and the type is set in a style of elegance up to the modern standard.

Accompanying the script is a cut of the Appleton Post square, containing on one side a map of Ledyard, Wisconsin, scale 200 ft. in 1 inch, and on the other side, a map of Outagamie county, Wis. The illustrations mainly relate to the city of Appleton, and the surrounding townships. The perspective view of the city is excellent.

LAMBERTH'S RURAL REGISTER AND ALMANAC, published annually for gratuitous distribution, 1882. This is a royal octavo of 82 pages, in colored paper covers, and amply illustrated with accurate figures of the vegetable productions, the raising the seeds of which the publishers make a specialty. The bird's eye view of the central position of relieving and farm will give a tolerable idea of the magnitude of the concern, from which it will be perceived that twenty five buildings are required for its successful operation, and additional ones are projected. Send for the Circular to the Register.

THE PENNSYLVANIA FARMER, a semi-monthly journal, de- voted to the best farming. We are unable to say in the absence of any other evidence, this journal alone would not apply to St. Louis as a large city, and has a very large grain and flour trade. A copy of No. 5, Vol. 2, (January 6, 1892) has found the deck of our mastern, and remembering that just forty-seven years ago this date, a young gentleman from St. Louis, the presence, the magnitude and the general make up of the journal before us, impresses us with the immense progress the city must have made since 1846 when her population was ten thousand less than Lancaster is today. But the Miller—il it may be called—of the present the town and a decked of five closely printed columns to the page—printed on extender paper, and profusely illustrated with all kinds of new and improved machinery pertaining to mills and milling. Its pictorial advertisements alone cannot but be interesting to any one having "half an eye," or half an idea, on the subject of machinery. Its 50 columns of reading and advertising matter relate almost exclusively to the grain and flour trade, and callers appertaining to that trade, (only in one little corner do we find the "fumbling, artless, illiterate" advertisement for "Beans, Beans," which the Miller filled with "Beans.") Nobly, certainly, ought to start in St. Louis for the want of bread, at least.

The receipts for flour for the year 1881, 1,596,074

Shipments of flour for the same time 2,618,919

Receipts of wheat in bushels was 11,937,441

Shipments of corn for the same time 7,753,020

Receipts of corn for the same time 2,696,375

Shipments of corn for the same time 1,031,367

Shipments of oats for the same time 3,515,300

Receipts of oats for the same time 3,247,267

Shipments of hay for the same time 3,247,267

Receipts of hay for the same time 3,247,267

The last two items may illustrate a large consumption of barley in St. Louis. If that is a fact, it has its redeeming quality in the significant other fact, that the quantum of Rye was comparatively small.

BOARD OF AGRICULTURE.

The annual meeting of the State Board of Agriculture, will be held at Harrisburg, commencing Wednesday, January 25, at 2 p.m. The following is a full list of subjects and discussions which will be submitted to the Board:--

2. The Best Method of The Insurance for Farm Buildings and their Contents, Henry G. Tyler, of Susquehanna.
5. The importation of Foreign Live Stock an Advantage to the Pennsylvania Farmer? A. D. Shimer of York County.
8. The best method of The Insurance for Farm Buildings and their Contents, Henry G. Tyler, of Susquehanna.
Important to Grocers, Packers, Hucksters, and the General Public.

THE KING FORTUNE-MAKER. 0.000

A New Process for Preserving all Perishable Articles, Animal and Vegetable from Putrefaction, Retaining their Odor and Flavor.

"OZONE—Pured air, active state of Oxygen."—Webster.

This is not a liquid pickle, nor any of the old and exploded processes, but is simply and purely OZONE, as produced and applied by an entirely new process. Ozone is the antiseptic principle of every vegetable, animal and vegetable structures from decay.

There is nothing on the face of the earth liable to decay or spoil which Ozone, the new Preservative, will not preserve for all time in a perfectly fresh and palatable condition.

The value of Ozone as a natural preserver has been known to our elder chemists for years, but, until now, no means of producing it in a practical, inexpensive, and simple manner have been discovered.

Marquise observations prove that decay is due to specific matter—mico germs, that develop and feed upon animal and vegetable structures. Ozone, applied by the Prentiss method, destroys these germs and, as a result, preserves. At our office in Cincinnati can be found many articles that can be thought of, preserved by this process, and every visitor is welcome to come in, taste, smell, take away with him, and test in every way the preserved articles, a feature which we will always do free of charge, any article that is brought or is applied to us, and return it to the sender, for him to keep and test.

FRESH MEATS, such as beef, pork, veal, and all poultry, preserved by this method, can be shipped to Europe, subjected to atmospheric changes and return to this country in a state of perfect preservation.

Eggs by this process, will remain sound and fresh, and be kept in perfect condition for any number of months or more, thoroughly preserved; the yolk held in its normal condition, and the eggs fresh and perfect as on the day they were treated, and will sell at double prices. The advantage of this process, in the treatment of eggs, is really seen when these eggs are quickly sent by express and are received in this condition, and two doz. a box, and held by them, can be sold for an advance of from one hundred to three hundred per cent. One man, with this method, can preserve 500 dozen a day.

FRESH FISH can be permitted to keep in their native climate, and can be consigned to any part of the world.

The juice expressed from fruits can be held for an indefinite period without fermentation—hence the great value of this process in preventing fruit in a concentrated and wholesome manner.

VEGETABLES can be kept for an indefinite period in their natural condition, retaining their odor and flavor, treated by the original batches at a small expense. All vegetables, be they potatoes, carrots, turnips, beets, etc., can be grown so large that they can be drained, preserved, and sold during the spring, summer, and winter.

THE most perfect, and the only process thus far known, which destroys all germs, and holds any article thus preserved, and no trace of any foreign or unnatural odor or taste.

The process is so simple that a child can operate as well and as successfully as a man. There is no expensive apparatus, or machinery required.

A mere handful of wood ashes, or lime, etc., are treated at one time, without additional trouble or expense.

In fact, there is nothing that Ozone will not preserve. Think of everything you can that is liable to be decayed, soli, and then remember that we guarantee that Ozone will preserve it. In essence the thing is, if you can keep it in a condition you want it for any length of time, Ozone will help you to keep it in that condition. And remember this it will save selling qualities and win for you more dollars than you will ever imagine.

There is not a township in the State of Ohio in which a live man can not make any amount of money, from $2000 to a $10,000 investment, in each county in the United States, in which there can be placed this Practise, and through him secure the business which every county ought to value.

THE FORTUNE Awaits any Man who Secures Control of OZONE in any Township or County.

A. C. Bowen, Marion, Ohio, has cleared $2,000 in two months. $2 for a test package was his first investment.

We have 100 men who have invested 6 months, and sold November 1st. $2 for a test package was their first investment.

F. W. Peters, Spring City, Mich., has cleared $2,000 a month in handling and selling Ozone. $2 for a test package was his first investment.

J. H. Boor, Cinc. St., Chicago, is preserving eggs, fruit, etc., for the commission men of Chicago, charging 50c per dozen for eggs, and other articles in proportion. He is preserving 5,000 dozen eggs per day, and on his business is making $5000 a month for a small investment.

The Cincinnati Daily Gazette, for two weeks, selling $300 a week, or making $5000 a month in handling brewers' malt, preserving and shipping it as feed to all parts of the country. Malt unsold in store in 21 hours. Preserved by Ozone it keeps perfectly fresh.

There are instances which we have asked in the privilege of publishing. There are scores of others. Write any amount into stock, and receive six or eight hundred per cent. on your investment.

Now, to prove the absolute truth of every thing we have said in this paper, we propose to place in your hands the means of proving for yourself that we have not claimed half enough. To any person who doubts any of these statements, and who is interested sufficiently to make the trip, we will pay all traveling and hotel expenses for a visit to this city, if we fail to prove any statement that we have made.

How to Secure a Fortune with Ozone.

A test package of Ozone, containing a sufficient quantity to preserve one thousand dozen eggs, or other articles in proportion, will be sent to any applicant on receipt of $2. This package will enable the applicant to procure any line of business, and thus satisfy himself as to the extraordinary merits of Ozone as a Preservative. After having thus satisfied himself, and had time to look the field over, he may call upon the representative for the Ozone, or any of the other lines of business, which is best suited to him and to his township or county. A representative of the Ozone company has entered into an arrangement with him, and will make a form for him and go into the details of his business, and make a business proposition to the first responsible person who orders a test package and desires to control the business in the locality.

The man who takes control of a territory, will enjoy a monopoly which will surely enrich him.

The second step of the process is to take possession. As soon as the test package is secured, you will send us by express, at our cost, the ingredients, together with the price of the test package and cost of transportation. If you do not send to us money in advance for the test package we will send it C. 0. D., but this will put you to the expense of charges for return money. Our correspondence is very large, we have all we can do to attend to the shipping agencies. Therefore, we cannot give any attention to business which do not order Ozone. If you think of any article that you are doubtful about Ozone preserving remember we guarantee that it will preserve it, so why not ask us if it will.

REFERENCES.

We desire to call your attention to a class of references which no enterprise or firm based on any thing but the science of Ozone can blow into the air.

We refer, by permission, to the Ozone paper in the world. On August 1st was published the first issue of the Ozone, the leading commercial weekly of this city.

These gentlemen are each familiar with the merits of our Ozone, and know from actual observation that we have without question the Most Valuable Article in the World.
FARMING FOR PROFIT.

It is essential that this large and comprehensive book, advertised in another column by J. C. McCardy & Co. of Philadelphia, the well-known publishers of Standard works, is not only the newest and handsomest, but altogether the best work of the kind which has ever been published. Thoroughly treating the great subjects of general Agriculture, Live-stocks, Fruit-growing, Business Principles and Home Life, telling just what the farmer and the farmer's boys want to know, combining Science and Practice, stimulating thought, awakening inquiry, and interesting every member of the family, this book must exert a mighty influence for good. It is highly recommended by the best agricultural writers and the leading papers, and is destined to have an extensive sale. Agents are wanted everywhere. 

CIDER MILLS!

Wine Presses!

Fruit Presses, Apple Slicers, Polder and Ensilage Cutters, Grain Fans, Grain and Fertilizer Drills.

Broad-cast Seed Sowers, Corn Shellers, Corn Mills, Grain Mills, etc., etc.

FOR SALE BY D. LANDRETH & SONS,
AGRICULTURAL AND HORTICULTURAL IMPLEMENTS

AND

SEED WAREHOUSE,
Nos. 21 and 23 South Sixth Street,
BETWEEN MARKET AND CRESTNUT STS.,

PHILADELPHIA.

MERCHANT TAILORING,
1848 (The Oldest of All) 1881

RATHVON & FISHER,
MERCHANT TAILORS AND DRAPERS,
respectfully inform the public that having disposed of their entire stock of Ready-Made Clothing, they now do, and for the future shall, devote their whole attention to the CUSTOM TRADE.

All the desirable styles of CLOTHS, CASIMIRER, WOOLSTEDS, COATINGS, CUTTINGS and VESTMENTS, constantly on hand, and ready to order in either fashionable or lasting style promptly, and warranted satisfactory.

All Wood Work from $3.00 to $30.00.
All Wool Work from 20.00 to 100.00.
Alil Wool Work from $0.00 to 6.00.
Umbra and Cotton Goods of every description, with Cutting, Repairs, Trimming and Making, at reasonable prices.

Much new goods, especially Oiled and Slubbed Goods, just disposed of by the yard to those who desire to have them made elsewhere.

A full supply of Spring and Summer Goods just opened and on hand.

Everything on the highest possible level.

We make to correct pattern for public that patronize us, and hope to merit its continued patronage in their "new departures."

RATHVON & FISHER,
FRAT AL TAILORS, No. 101 North Queen Street, LANCAS-TER, PA.

GLOVES, HARRS, UNDERWEAR.
SHIRTS MADE TO ORDER, and WARRANTED TO FIT.

E. J. ERISMAN,
101 North Queen Street, Lancaster, PA.

EVAPORATE YOUR FRUIT.
ILLUSTRATED CATALOGUE FREE TO ALL.

AMERICAN DRIER COMPANY, Chambersburg, Pa.

A HOME ORGAN FOR FARMERS.

THE LANCASTER FARMER,
A MONTHLY JOURNAL,
Devoled to Agriculture, Horticulture, Domestic Economy and Miscellany.

EDITED BY DR. S. S. RATHVON.

TERMS OF SUBSCRIPTION:

ONE DOLLAR PER ANNUNUM, POSTAGE PREPAID BY THE PROPRIETOR.

All subscriptions will commence with the January number, unless otherwise ordered.

Dr. S. S. Rathvon, who has so ably managed the editorial department of the past, will continue in the positions of editor. His contributions on subjects connected with the science of farming, and particularly that specialty of which he is so thoroughly a master—anatomical science—some knowledge of which has become a necessity to the successful farmer, are alone worth much more than the price of this publication. He is determined to make 'The Farmer' a necessity to all households.

A county that has so wide a reputation as Lancaster county for its agricultural productions should certainly be able to support an agricultural paper of its own, for the exchange of the opinions of farmers interested in this matter. Work among your friends. The 'Farmer' is only one dollar per year. Show them your copy. Try and induce them to subscribe. It is not for each subscriber to do but it will greatly assist us.

All communications in regard to the editorial management should be addressed to Dr. S. S. Rathvon, Lancaster, Pa., and all business letters in regard to subscriptions and advertising should be addressed to the publisher, rates of advertising can be had on application at the office.

JOHN A. HIESTAND, No. 9 North Queen St., Lancaster, Pa.
EGGS! EGGS!

From all the leading varieties of pure bred Poultry Brahma, Cochin, Hamburg, Polish Game, Dorking and French Poultry, Peacock, Speckled and Hannoverian, Roun and Pekin Ducks. Send for Illustrated Circular.

T. SMITH, P. M., Fresh Pool, N. Y.

SEEDS, BULBS, PLANTS, Ornamental and Cultivated Trees and Ferns, Vegetables, Annuals, Perennials, Tubs and Winter Flowers, Grasses, Evergreens, Ferns, Bulbs, and Ornamental Shrubs. All kinds of Seeds and Plants, frame cold frame, and in green houses, for sale. The following are the principal kinds of Bulbs and Seeds which we have, and are ready to mail on receipt of the price below:

J. LEWIS CHILDs, QUEEN S. Y.

E G G S !  E G G S !

From all the leading varieties of pure bred Poultry Brahma, Cochin, Hamburg, Polish Game, Dorking and French Poultry, Peacock, Speckled and Hannoverian, Roun and Pekin Ducks. Send for Illustrated Circular.

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T. SMITH, P. M., Fresh Pool, N. Y.
Pennsylvania Railroad Schedule.

Trains leave the Depot in this city, as follows:

<table>
<thead>
<tr>
<th>Destination</th>
<th>Arrival Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lancaster</td>
<td>230 a.m.</td>
</tr>
<tr>
<td>Harrisburg</td>
<td>4:00 a.m.</td>
</tr>
<tr>
<td>Niagara Express</td>
<td>5:00 a.m.</td>
</tr>
<tr>
<td>Hanover Accommodation</td>
<td>11:00 a.m.</td>
</tr>
<tr>
<td>Mail train to Mc. Joy</td>
<td>12:30 p.m.</td>
</tr>
<tr>
<td>No. 7 to Columbus</td>
<td>1:15 p.m.</td>
</tr>
<tr>
<td>Sunday Mail</td>
<td>2:30 a.m.</td>
</tr>
<tr>
<td>First Line</td>
<td>2:30 p.m.</td>
</tr>
<tr>
<td>Frederick Accommodation</td>
<td>3:15 p.m.</td>
</tr>
<tr>
<td>Huntington Accommodation</td>
<td>4:15 p.m.</td>
</tr>
<tr>
<td>Columbia Accommodation</td>
<td>5:15 p.m.</td>
</tr>
<tr>
<td>Harrisburg Express</td>
<td>6:15 p.m.</td>
</tr>
<tr>
<td>Pittsburg Express</td>
<td>8:15 p.m.</td>
</tr>
<tr>
<td>Cincinnati Express</td>
<td>11:15 p.m.</td>
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EASTWARD.

Lancaster, Pa.

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<table>
<thead>
<tr>
<th>Destination</th>
<th>Arrival Time</th>
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<tbody>
<tr>
<td>Philadelphia</td>
<td>2:35 a.m.</td>
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<tr>
<td>First Line</td>
<td>5:35 a.m.</td>
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<tr>
<td>Harrisburg Express</td>
<td>9:05 a.m.</td>
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<tr>
<td>Columbus Accommodation</td>
<td>11:40 a.m.</td>
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<tr>
<td>Pacific Express</td>
<td>1:20 p.m.</td>
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<td>Sunday Mail</td>
<td>3:20 p.m.</td>
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<tr>
<td>Johnstown Express</td>
<td>5:20 p.m.</td>
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<td>Dug Express</td>
<td>8:20 p.m.</td>
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<tr>
<td>Harrisburg Express</td>
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The Hanover Accommodation, west, connects at Lancaster with Niagara Express, west, at 9:05 a.m., and will run through to Hanover.

The Frederic Accommodation, west, connects Lancaster with First Line, west, at 9:05 a.m., and runs to Frederick.

The Pacific Express, east, on Sunday, when flagged, will stop at Mc. Joy, Elizabethtown, Mount Joy and Lancaster, and at the numerous points between.

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Embracing the history and habits of
Noxious and Innoxious Insects,

and the best remedies for their expulsion or extermination.

By S. S. Rathvon, Ph. D.

Lancaster, Pa.

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Office: 13 North Duke Street,
Lancaster, Pa.
THE ENGLISH SPARROW.

"Australia imported English sparrows to kill worms, but it found that the birds are the worst pest of the two, and bounties are offered for their destruction."

It appears that Australia has repeated the blunder of America, in importing the "English sparrows to kill worms," and now both countries are "down on the sparrows," because he cannot be forced to habitually do violence to the instincts of his nature. The "English sparrow" (Passer domesticus) is a Finch, belonging to the family Fringillidae, and therefore, by nature, is a granivorous bird, and not strictly speaking, an insectivorous one. It is not the fault of the sparrow that it do not eat worms, any more than it is the fault of the lion, because he don't eat straw like an ox. There was therefore no more wisdom in importing the English sparrow for the purpose of destroying insects, than there would have been in importing an English pigeon to destroy mice. It is nothing to the purpose to allege that they do occasionally, or under certain extraneous circumstances, eat insects, for that is only a negative quality at best. If birds must be imported to destroy insects, those of a positive character should have been imported.

The sparrow however, is sufficiently positive in the direction his instincts lead him, although as a uniform, or exclusive feeder on insects he is negative, and it is almost, if not quite, impossible for him to be otherwise, without doing violence to his own physical organization. If he were purely insectivorous he would not be eking out a precarious living in our cold ungenial climate during winter, when insects are not obtainable by birds of his mandibular constitution; he would instinctively migrate with other members of the feathered realm, who habitually feed on leaves, and we have reason to us that this fact alone ought to be prima facie evidence that no confidence can be placed on the English sparrow as a reliable remedy against the multiplication of noxious insects. It is very probable that he may, and perhaps does, appropriate some insects when he can get nothing else, or when he is providing a repast for his young family, in common with many other birds that are not strictly insectivorous. Until young birds are fully competent to provide for themselves, the parent birds usually furnish them such food as is best adapted to their juvenile condition, and seated hanging in their nest to do less violence to the laws of physiology than human parents do, in the rearing their own progeny. A tender juicy worm is easier to digest than a hard dry seed, especially during the period of helpless inactivity. The sparrow then, being a granivorous bird, its normal food is grain, or seeds, and when these are not obtainable it will appropriate that which nearest approximates to grain, or seeds, and hence the English sparrows beget themselves to cities, towns, villages and hamlets, where they can obtain bread-crumbs, undigested grains in the droppings of animals—especially those of the horse—and in the absence of these, the young buds of trees and shrubbery. The streets of Lancaster city are full of them both Summer and Winter, whilst in the surrounding country there are few or none of them. Two summers ago a creeping vine on a gable in East Orange street, contained fifty or one hundred sparrow nests, and each one of them was the cradle of a broad or two. Within, perhaps, a half dozen yards of it stood several elm trees, badly infested by the "elm leaf beetle." (Galericinis zanthomelas.) There were tens of thousands of these insects in the larva, the pupa, and the imago states: but no one that ever watched those birds ever saw them fly in the direction of those infested elm trees, and this seemed the more remarkable, insomuch as the leaves, the branches, the trunks, and the pavement under the trees, were literally swarming with the insects in all their stages of development; moreover, the birds were rearing their broods, and, from their appearance alone, one would suppose that if ever there was an insect that might be expected to excite the appetite of a small bird, it would have been these Elm-leaf Beetles. But no, they were totally ignored. Now, notwithstanding all this, it is not our intention to disparage the English sparrow; for, as we before intimated, he has his place in the economy of nature, and those who have forced him out of it must take the consequences. He is doing all he can, under the circumstances in which he is placed, and the highest reasoning creature can do no more. He doubtless is doing some good in his own peculiar way. If he does not destroy the number of insects we think he should, he may be gobbling up the seeds of many noxious weeds, when he can get access to them, and that is surely something.

But, in dealing with the sparrow we do not think it would be wise to follow the example of Australia, by offering bounties for their destruction; for this might furnish the other horn of the dilemma, as it did on another notable occasion in that same Australia. The government of New South Wales offered bounties for the destruction of the owls and hawks of that colony some years ago, on account of the depredations they committed upon the poultry of the farmers, through which they were finally exterminated. But then the more destructive rodents increased most fearfully, and soon the country was overrun by rats, mice, rabbits, &c., and so great was the destruction of the pasture fields, that a single woolgrower or a single district lost fifteen hundred sheep by starvation. A similar event occurred many years ago in Scotland. There seem to be certain balances in the economy of nature, the equilibrium of which, if destroyed, or undue propounding be given in either direction, results in disaster to the interests of the aggressor; and often too, in a manner that was wholly unanticipated.

We cannot therefore say what effect the total destruction of the sparrows would have upon the vegetable world, but there is room for rational inference that it would not be a favorable one; because, indirect influences may be so intensified as to produce more injury than that which are direct. Although the sparrows belong to the Finch family, yet within that family there are groups, some of which are more decidedly granivorous than others. Although their natural proclivities may lead in that direction, still they are not so exclusively seed-eating as the true "bush," of which the canaries may be regarded as a familiar type. The sparrows have the conical bills of pure granivorous birds, but they are more decidedly notched than most of the other groups of the family. We therefore not only may injure that they capture insects—especially during the breeding season—but they have often been seen in the very act of doing so; and, if each bird captures and kills a single female insect in the spring before she has deposited her eggs, the benefit resulting from it may be incalculable. The destruction of a few birds of fruit trees in early spring, is surely not to be compared with the general interest of the crop; and perhaps such a contingency could be obviated by furnishing the birds with necessary food.

We have been portraying the English sparrow as he actually is, and not as people may think he ought to be. From his status in the classified arrangement of the feathered tribes, we freely confess that we are not at all disappointed in him. When the war, dressed in an ox’s hide appeared before Baron Cuvier, in order to frighten him, he enquired what he wanted; and when the war replied in a sepulchral tone—"I want to eat you," the monster significantly replied, in an unmoved manner—"Toads, hogs, Hymenoptera. You can’t do it." We knew of a cow that ate the frill of a woman’s sunbonnet; and we also knew of a cat that ate pickles, but those articles were not their normal food of course. Nor can it be said that they habitually fed on that kind of provender. Under similar circumstances, aided by domestication, sparrows are occasionally seen capturing and eating insects, but it can hardly be regarded as a normal characteristic.

On the whole from what we know of the English sparrow through local experience, and the general tone of the public, we have committed a blunder in introducing it into the United States for the purpose of destroying our surfeit of insects; and, whatever we intend to ultimately "do about it," it is perhaps well that the masses of the people should have some knowledge of what he is and how he lives. He is a shrewd, pugnacious and persevering little elf, and "tis a pity he should have gained such a "disreputable reputation."

We would not recommend, therefore, that a government bounty should be offered for his head, when a simple repeal, or suspension of the law for his protection, and his elevation to the status of a "game bird," would as effect-
tually, and more cheaply accomplish the desired end. It is true, he is not a very large bird, but then it would only take the more of them to make a "mass," and the process of extinction would be more rapid. There are "four and twenty" of them that infest our premises, that it would be a shorter season in the winter to endure their scat tering attempts at white washing, especially when anything valuable happens to stand beneath their winter rookeries; and yet, we rather like their social presence.

Ourselves.

"The fourteenth volume of the LANCASTER FARMER begins with the January number." The indulgent editor, Dr. Rathvon, has for years given his time and talents to pushing the agricultural interests of this great agricul tural county ahead through its columns, and although "ill required for his labors work will still keep his hands on the helm. He cordially invites contributors and correspondents to render him what aid they can in making the FARMER a still more valuable vehicle of progressive agriculture and pomology, and there should be a generous response from all sides to his invitation. We observe that he alludes to the ungenerous and unjust charge made against him by a member of the Agricultural Society, that he had supposed, out of "the grounds of the "entomological" cases of the off ender member from the society proceedings as published in the FARMER. It was hardly worth his while to go to the trouble. No one giveth the slyly accusation of moment's thought. The charge that Dr. Rathvon was unable to answer the entomological queries of his captious critic brought such an overwhelming number of the society present. All that individual ever knew about insects is a tenth part of what Dr. Rathvon has forgotten about them."

The foregoing from the columns of a recent issue of the DAILY NEW ERA, need no comment from us, save the expression of a grat iful sentiment for the kindly recognition of our labors, our integrity, and the status of the journal we seem called upon to edit.

February Snows.

"The morning of February 1st, 1882, was usher ed in by an eight inch snow, followed by one of about twelve inches on the 4th, but it cannot be said that the temperature was uncomfortably cold. On the morning of the 2nd (candieens) the clouds had entirely dispersed, and the sun shone out bright and clear. This according to an ancient tradition (perhaps confined to Pennsylvania) was ominous of a "hard" and a bad spring. It was ground-hog day, and the tradition is something like the following:"

If the ground-hog comes out of his hole on candles and sees his shadow reflected by the sun, he immediately returns to his winter lair, and resumes his state of hibernation for six weeks longer. But if the sky is clouded and he is unable to see his shadow, he remains out, and the spring will be an early one. We are unwilling to say anything calculated to undermine this ancient concult, but really the ground-hog is not much of a prophet after all. Since the weather is not known, and no rules can be made about the 17th of March, which is "St. Patrick's day in the morning." Now, we are nearly "three-score and ten," and yet we never knew Spring to commence much before the 17th of March, but have known it to be "bitter cold" after that date on frequent occasions. Besides, there is that qualifying "if," which places the subject in the company of probabilities, or inferential. If we live, perhaps we may be able to say more about it six weeks later in the season, for which we are content to wait.

Wood-Worms.

"An old experienced farmer says that hickory cut in July or August will not become worm-eaten. Oak, chestnut, walnut or other timber cut from the middle of July to the last of August will last twice as long as if cut in winter. When oak is cut at this season, if kept off the ground, it will season through if two feet in diameter, and remain perfectly sweet for fuel. In February or March, when sycamore or chestnut is cut it will become sap rotten in a few years."

Perhaps the most common worm that infests hickory timber is the larva of the "Painted Clytus," (Clytus pictus) a longhorned Beetle (Longecorvis) of a dark mottled greenish color, striped obliquely with yellow on the wings, and transversely on the thorax. The "Locust-borer" (Clytus robiniae) similarly marked, is very nearly like the first named; so much so indeed as to be easily confounded with it, and some entomologists are of opinion that the species are identical, or at most, only varieties. Be it as it may, the paint ed clytus is usually found in early spring, even as early as the beginning of April, or of May—whilst the locust-tree clytus is usually found in early autumn. Many years ago, before coal was used as a household fuel as universally as it is now, we had in our supply of hickory wood in autumn. This we had sawed in convenient lengths to suit the size of the stove. Invariably, almost every spring these beetles would evolve by hundreds, and issue through the cellular grates. After a week or ten days the insects would entirely disappear, and no clytus would be seen until about the month of September, or early in October, when the different species of sollobugs would be fairly swarming with them. This, together with a difference in the length of their horns (or tenacum) and other minor characters has been deemed sufficient to establish two species of these. Now, if hickory wood is cut before these insect deposit their eggs in it, it is not likely to be infested by these worms, and the same may be said of oaks, chestnut, walnut and other timber. More respect must be paid to the season in which the nature insects are laid, pair or oviposited, whatever the month may be. Cutting timber in July and August might elude the attacks of the locust clytus, because the sexes are usually found in cota on the bloom of the solilago in September, and as late as October; but we think it would have to be cut in this latitude, before July to elude the attacks of the painted clytus, or whatever the woodbor ing insect may be. The whole success of eluding the attacks of woodboring insects hinges upon their ovipositing periods. If the substances which form nisuses for their eggs are removed before the eggs are deposited, they are likely to escape; if unremoved the insects are indifferent whether it is fallen or standing timber. These periods the farmer has better opportunities to observe than the closet entomologist. Whenever he finds beetles in cota he may infer that the next act after that, will be the deposition of eggs. Separate from these circumstances, days, weeks, months and signs mean nothing. The instincts of insects may lead them to avoid fallen timber because of its liability to be used before their progeny could be developed therein, or because the eggs require moisture, but it is not impossible that they may or because both the eggs and the newly excluded embryo might be un-killed before the latter could penetrate hard or dry timber. Nothing is more fatal to the young larve and eggs of some insects than a hot sun. In perfect freedom insects would hardly deposit their eggs on stone or iron.

The foregoing has no relation to those wood boring insects that manifest a preference for dead timber, whether standing or fallen, decayed parts of living timber, or that which is very much rotted; but even many of these choose such parts of it as contain some moisture, whilst others may be found in timber almost as hard and dry as old bones.

Planting Trees on Railway Embankments.

In ourylvian enthusiasms, our theories of tree replantition may not be borne out by practice. A writer in the Journal of Forestry, for December, 1881, discusses on "some objections or restrictions which apply to planting and reining timber on railway embankments;" and briefly indicated, they are, "First, the wind of windfall; second, the risk of fire; third, the lodgment of leaves against the rails; and fourth, the hindrance of view over the adjacent country."

When we reflect that the great storm which passed over Leicestershire, England, last October, uprooted or ruinously damaged, on the estates of Belvoir Castle alone, 31,200 trees, 236 larch, 162 oaks, 124 ash, 70 palm chestnut, 13 lime, 18 sycamore, 11 beech, 15 poplar, 16 birch, 6 cherry, 2 each of silver fur and Turkey oak, 6 of Scotch fir, and 1 each of mountain-ash, bird-cherry, maple and horse-chestnut trees, and that usually the United States is more stormy than England, we must admit a very serious obst cle to the enterprise.

Again, when we reflect upon the sorrowful devastations of the forest fires of Michigan a few months ago, the effects of which her people are still suffering, we are compelled to acknowledge an other source of danger, especial ly if any of the resinous pines should be planted. The leaves of pines burn readily in consequence of the turpentine they contain, even when quite green. Although the third objection may be obviated by "swepers" in front of the wheels, and at any rates would only continue for a brief season each year, yet the lodgment of these leaves in excavations might become a source of danger for an indefinite period, and moreover, would always be in danger of being ignited in dry weather.

The hindrance of a view of the adjacent country would be a serious objection to these uses, and for pleasure, and desire to see the country they are passing through. However beautiful the trees may become, to have them on either side of a road for hundreds of miles—or perhaps thousands—would be like passing through a long forest—or a deep cut or tunnel—and hence it would become monotonous if not a dark and gloomy avenue of transi.
The risks from windfalls would doubtless, in time, become a very considerable one, and perhaps the main one. In the dim long age, it seemed to have been tacitly understood that the poor people of the towns and villages of our State, were privileged to gather the windfalls of contiguous forests and appropriate them to their own use. At all events they felt it. Today, the owner of forest premises ever interfered with their right to do so, and perhaps would have been looked upon as a very mean man if he had.

Now, we well remember how thickly the ground of these forests was strewn with windfalls after every storm, and how eagerly the poor hied themselves thither to get the first choice of them, and this was particularly the case when the trees were large and old. Think of a train of cars entering such a dangerous avenue on a dark and stormy night, feeling its way cautiously for a whole night in motion of encountering these windfalls on the track.

Again, where would railroad companies find room to plant their trees? Where the roads run at grade there might be little difficulty, but where they penetrated hills by deep excavations, or where elevated on high embankments, they evidently would be compelled to plant them on the sides of these excavations and embankments, and thus the projecting limbs would, in time, spread and interfere with the transit of cars, or with the efficiency of the telegraph wires. They could not depend on much of the timber, no grants, for there would be trespass upon the contiguous property; moreover, railroad companies are granted the right of way to transport passengers and merchandise, and not to convert them into timber property, jeopardizing the lives and property of their patrons.

We give these views for what they may be worth, and not as an unqualified endorsement of them, nor yet as a positive dissent. There is evidently two sides to the question, and before we commit ourselves to either side, we should contemplate the subject both pros and cons.

It doubtless would be pleasant to ride through a long slumbering avenue in summer time, but if this should add to the present burden of danger, much might be lost and nothing gained.

THE LARGEST TREE IN THE WORLD.

"The biggest tree in the world is not in California, as every one supposed, but in Australia. The Champion of the Yosemite Valley must give way to the "Peppermint" trees, on the Dandenong range of hills in Australia. Baron Von Muller who is a great authority on botanical subjects, asserts that he has seen one of these trees of the enormous height of 17,370 feet, and forest's circumference 480 feet.

The above paragraph is credited to Land and Water, by the Journal of Forestry. This will never do. We must find a tree 480 feet and one inch in height, even if we have to splice it. Perhaps the great Santa Barbara grape vine might be trelissed up to a greater height than the American peppermint, but then it would hardly pay, as they would say, to keep it--perhaps with a pumpkin vine--in Australia. The race in "big things" seems to lie between California and Australia, and the remainder of the world are mere spectators.

On a "second thought," perhaps it would be better just now to "divide the honors," for the same authority nominally accords to New York State--"the largest orchard in the world," namely, that belonging to Mr. Kinstry, on the banks of the Hudson, containing 2,500 apple-trees, 6,000 cherry-trees, 1,090 pear-trees, 200 peach-trees, 500 chestnut-trees, 200 plum-trees, 15,000 grape-vines, and 6,000 raspberry-trees. Of apples alone Mr. K. sold over 30,000 barrels, and a proportionate quantity of other kinds of fruit last year. Taken as a whole, Mr. Kinstry's may be the largest orchard in the world; but, if the number of peach trees was thousands instead of hundreds, it would not equal some of the peach orchards of the little State of Delaware, and the plums can be outnumbered, we think, by orchards in Michigan.

We are not sure that big trees, big orchards and big farms are the best things for the general welfare and equity of a country—and this might also apply to big establishments of any kind, unless it were such as could not be conducted on small or medium scales—as railroads and canals for instance, and which cannot accomplish their objects, or accommodate the demands of the public, without traversing hundreds or thousands of miles.

SHIFTY, THRIFTY, FRANCE.

"The Montezuma (N. Y.) marshes are likely to become as valuable as a coal mine. The marl is being shipped to France by the thousands of tons, being used there as a deodorizer and as a substitute for artificial fertilizers. Seeing that we are importing so much fertilizing matter in the shape of cereals, and beef pork and mutton, we really ought to find a means of using the matter at home to replenish those fields whose fertility has been shipped to Europe."

The French seem to know "what's what" on subjects of "fragrance and fertility," something which we Americans are slow in learning. Marl, the qualities of which should be familiar to American farmers, is absolutely unknown in many districts of our country, not very far either from localities where thousands of tons of it have been indiscriminately used by many hundreds—perhaps thousands—of years.

The next step may be for France to send her marl back to us again, in the form of expensive fertilizers. Perhaps then it would become popular, for it would be French, and 'you know' we are a very 'Frenchy people in tastes. Here we sweat and odorize, and France sends over and takes our deodorizers. They are a wonderfully prolific people any how, in scientific, domestic, manufacturing and social expedients and economies; and although comparatively poor in area and virgin fertility, yet they are rich in resources, and could live sumptuously on what we waste, or willfully throw away.

"A market for the sale of toads to gardeners is held every week in Paris. A hundred good toads bring from $15 to $17. They are brought packed in damp moss in well-ventilated cases.

There is it again: the next step will be to import American toads, as companions to our marl. As we are said to be a money getting people, it would not be surprising, if some of our enterprising experts would engage in the exportation of toads—especially if it "pays"—seeing that we have such a large appreciation of them as domestic auxiliaries on this side of the Atlantic.

"The highest mountain on the north American continent, is Mount St. Elias in Alaska, and the elevation is 17,600 feet. Next it comes the volcano of Popocatepetl, in Mexico, 17,700 feet, and Orizaba, also in Mexico, 17,492 feet.

We own the highest mountain that surely is true compensation. France can't deprive us of that "any way." But should the ice crop fail, we may find her hankerimg after our Alaska ice. She would profit by it, although we, it seems, cannot. Well, let her take it, and the mcel and touts along with it. She can't take our highest mountain, nor our nosious insects (indeed these she won't take), she is satisfied with our phylloxera nor our stencives.

Irony apart, these paragraphs carefully culled, are significant. Before another century in our history traverses, our country may have a more practical illustration of the use of marl and toads, and perhaps of high mountains too, than it has now. These are the bountiful provisions of nature, that have been permitted by a power outside of nature, for our utilization when the proper time and circumstances harmonize in their discovery and development.

KITCHEN GARDEN FOR FEBRUARY.

In the Middle States, frost usually prevents out-door efforts in the way of gardening. Next month however, will bring its labors, and we can now only prepare to follow them. It is presumed all persons into whose hands it is dovered is likely to fail are provided with such cheap and simple means of enjoyment, a horti-culture, for forwarding tender vegetables. We do not mean the more expensive structure under which delicacies are provided ready for the table, but a plain box, of suitable size and figure, with sash and shutter to it, under which plants of cabbage, tomato, ceyplant, &c., may be raised in anticipation of spring, and on its arrival, to be transplanted in the open air. If there be one who has a garden still unfurnished with what we have just described, let him take our word for it he will, on trial, thank us for urging its immediate provision; a country family can half enjoy the fruits within reach who are unsupplied with such a structure; a glance at one in use will give the necessary information as to the construction.

Towards the close of this month (if the weather be very severe it may be prudent to defer it awhile), the seeds just named may be planted under glass; watch them lest they suffer from frost, or, as is not unfrequently the case, from want of sufficient air as the weather becomes milder, when they all need increased water. If the remarks under the head of January are referred to, perhaps something may be found which will apply with equal force to the same.

We can only speak in general terms of the work which may be advantageously done now, preparatory to the active season which approaches. The thoughtful man will study out the subject for himself and leave nothing undone which may expedite the varied and pressing labors of spring. If tools and implements are likely to be needed, he will
provide them in due season; repair the old
uses, examine and realize, if need be, the
sashes of the forcing frames, long before they
are actually required; overhaul his stock of
seeds, and make out a list of those which may
be needed, so that they may be in hand before
the time of sowing; thus not only his inter-
est, but his personal comfort will be advan-
ced, and those little trifles which perplex the
careless and improvident, may be made sources
of enjoyment.

With each duty discharged at the proper time, with "a place for every thing and everything in its place," many rough spots in life's journey may be made smooth by—Landreth's Bar. Roy.

Comment on the above is unnecessary. It speaks for itself, and contains the essence of the admonition—"He that is forewarned is forearmed,—or at least he may be, if he will.

POULTRY EXHIBITION.

This rare peacen, which finally closed on
Wednesday evening at 10 o'clock, January 18,
1882, was the distinguishing feature of the
month, in the domestic history of Lancaster
county; and, independent of its pecuniary
outcome, it may be "scored" as an unquali-
fied success, as it deserved to be. Whatever
indifference may now be professed in it from which we naturally look for active
sympathy, one thing seems certain; namely,
that there is considerable of a "chicken-
fever" in Lancaster city and county, and any
one who visited the exhibition must have been
impressed with the evidence that the chicken
was determined to be "seen and heard."

The "birds" themselves, very graphically
represented the different nationalities of the
human family, and their vociferations, atti-
duations, genoicfections and gyrations may
tally have represented the babel and the move-
ments upon some foreign quay, where diverse
nations are wont to meet in promiscuous in-
tercourse, although limited by a rule of
apartness.

The awards of the premiums will be found on another page in this number of the Farmer, where it finds a permanent record and may be referred to by those who participated in the exhibition, when other records have perished. And that is not all. It stands as a living record, creditable to the energy and perseverance of its originators and conductors.

RULES AND EXCEPTIONS.

Hybrids Not Always Barren.

The general sterility of the male has given
to rise to an impression that hybrids are gen-
erally sterile, and indeed the term male
and hybrid have been almost synonymous. Sci-
centific agriculturists and other philosophers
have even built theories on this supposed
universal sterility, and we are not sure but some
think, though not the popular and popularly
scientists of the day are founded on those supposed facts. But as one swallow does not make a summer, so does not this one great fact account for the male
uni-vegetation! For, if hybrids possess all the
original application of the principle are numerous
and must be familiar to most observing per-
sons. One of the most interesting that we have
seen recently relates to the progeny of the
common buffalo and the domestic cow.
The progeny breed freely and are said to be
good milkers, and there is even some prospect
that the fact may be utilized in the production
of a very hardy and valuable race.

It is to be regretted that the race of observ-
ors is so limited, while students everywhere
abound. Though the fact that hybrids are not
necessarily sterile is familiar to many of our
readers, there are instances if people will only
look about them, few know of it who are studying
these questions, not because they do not exist,
but because they are not in the books.

German Telegrapli.

Time was, within our remembrance, when the
male was booked and discussed without an
exception, as a perfectly sterile animal, but,
subsequently a voice came up from Alabama
that a female male had foaled, just as any
other female animal of the horse kind would.
This then was an exception to the rule, in the
minds of those who credited the story.

Then came a similar report from Florida, from
Kentucky and elsewhere, but nothing authen-
tic, save by impromptu paragraphs. Perhaps
none of these cases were sufficiently authen-
tic to break the theoretical rule in the
minds of many scientists. Now however,
according to our extract below, taken from the
National Live Stock Journal, the French sav-
ants at least, have been compelled to admit
the fact. This, of course totally destroys the
rule, because that can hardly be considered a
rule to which there are so many exceptions;
and yet there are admitted rules to which it
is said, there are more exceptions than cases
that are covered by the rule.

But, then, single isolated facts, however
valuable, can hardly be considered by the
subject, for there are phases of the question
suggested by both of our quotations, that
would seem to need a more definite exem-
plication, especially in regard to the fer-
tilizing animal—whether an asinus or a ca-
ballus. Moreover, the fertile or non-fertile
character of the progeny involves a question
of some interest. If the cause of this departs
from a general rule can be determined,
the matter might be turned to additional
profit in mule-culture. As the Telegraph sug-
gests, it would be well for those "who are
studying up these questions," to investigate,
and if they can find nothing "in the books,"
to see that it is truly placed on record there.

A Breeding Mare Mule.

A breeding more male was recently exhib-
ted at the Jardin d'Acclimatation in Paris,
which has produced three colts. As the
French savants have hitherto been very in-
credulous as to reports of male breeding, it
is stated that they carefully inquired into this
case, and became satisfied that it was true.

We have heard of more mules occasionally
breeding in America, but we do not recollect
the general and local locality of this, or whether
the sire was a jack or a stallion, and shall be
obliged to any of our readers who can furnish
these particulars; also, what sort of an ani-
mal. But, referring to the above instance of
male breeding in France, the sire was a stud-horse.

CHICAGO LIVE STOCK JOURNAL.

WRITING FOR THE FARMER.

FRIEND RATHVON:—"Why is it that our peo-
ple of Lancaster county will not write more
for the Farmer? Surely there are many who
could give valuable information. More origi-
nal matter would make the paper more inter-
esting."—J. B. G.

"That's so,"—eminently and absolutely so
—and yet the desirable thing is not done;
but we can conscientiously say it is not
through any example, any unwillingness,
or any refusal of ours. We have however erect-
ed no tribunal before which we arrearage any
one for delinquencies of this kind. Contributions
of this kind, like church contributions, should
be voluntary. There is no power except self-compulsion that can be legitimately
exercised in such a matter. If those who are
able to write, choose to "pass over Jordan"
without having left a record for the benefit of
posterity, they are not accountable to us.

It would be a great relief to us, if we had more intelligent contributors, and would greatly oblige the industrious editor,

tal laborers of which, have devolved upon us
these many years; but we must reconcile
ourselves to the situation. It cannot continue
forever, and we do not believe that our con-
dition in the "forever" will be in the least
damaged through the labors we have endured
here; because, when we go hence, we do not
expect, or even desire, to go to a land
of apathy and idleness, but to one of use
and perpetual progress; and our capacity of
enjoyment there will be proportioned to our efforts
to labor usefully here.

We wish some one would answer our aged friend's query: we cannot come up.

If that ship can be saved by any lowering of our price, we shall do it, and
we will cheerfully submit to the sacrifice.

All that we have borne in constructing the FARMER thus far down the stream of time, may never be known until our "book of life" is opened.

Perhaps, if a local journal were established to advance the interests of our secular craft, we might be as remiss in our contributions to its columns as those who are ought to "write for the FARMER:" but we think we would no.

A love for writing however, must be
rarely, founded on use, before men will be
come habitual and voluntary writers; unless they
write for emolument, and then it becomes
a task.

In reply to our venerable friend's financial
inquiry, we would say, that his remittance
was duly received and placed to the credit of
those for whom it was intended; and the
acknowledgment will be found on the labels
of the different papers.

As pertinent to this subject, but without claiming that we fill the measure of the fol-
lowing from the columns of a contemporary journal, we quote it as a morally wholesome
admonition to all. "Thousands of men breathe,
move and live: pass off the stage of life, and
are heard of no more. Why? They did not
use the talent God gave to them; and no one was blessed by them; none could point to
them as the instruments of their redemption:
not a line they wrote, not a word they spoke,
could be recalled, and they perished—their
light went out in darkness and they were re-
membered no more than the insects of yester-
day. Will you thus live and die? Live for
something. Do good, and leave behind you a
monument of virtue that the storms of time
can never destroy. Good deeds will shine as
bright on earth as the stars of heaven."

EXCEP'TS.

MISCELLANEOUS.

GEORGIA has fifty cotton mills in operation and others in course of erection.

The last census return place the "defec-
tive" list of persons in the United States at
THE LANCASTER FARMER.

over 500,000. The list comprises the deaf-dumb, blind, insane, idiotic and pauper.

Twenty-five acres of tobacco have been grown this year at Putney, Vt., which therefore claims to be the banner town in the State in this respect.

"'LYING figures,"' says Mr. Dunlap, of The Chicago Tribune, 'are those in a current newspaper article to the effect that with $2,200 a person can go to Dakota and realize a net profit in wheat culture of $10,000 the first year.'

The statement that the Canada thistle is spreading over a large part of the Northern and Middle States is not creditable to the enterprise of farmers. It should be eradicated by eternal vigilance.

The Philadelphia Farmer has already predicted that there will not be even a fair crop of peaches next year, should the coming winter and spring be favorable. The freezing last winter and the hot, dry fall, told severely. Blossom buds, usually prominent before frost, are shriveled and show but little strength.

It is estimated that the Barton drovers handled 3,000 cattle this season, and two Craftbury men have sold 7,000.

If the novice wish to stick to one or two kinds of fowls in the beginning, less losses and disappointments would be the result.

OIL OF TURPENTINE is recommended to keep harness free from mold.

All manner of decaying vegetable matter should be added to the compost heap instead of being left to accumulate about the door-yard, where it will prove a fruitful source of malaria. Turn the heap occasionally and keep it moist to prevent fire gang.

Green manuring, or the plowing in of green crops, is especially adapted for light, sandy soils, which need humus to increase their retentive power.

A. B. Groff, of Michigan, is said to have exhibited an onion seventeen inches in circumference, weighing upward of two pounds.

A mixture of manure of potash, fish guano or sulphate of ammonia and superphosphate of lime, is an excellent fertilizer for corn.

Oregon had 100,000 tons of wheat for export, this year.

TENCH, a French food-fish, have been introduced in the Central Park pond, in New York.

When artificial teeth were made of ivory, the canine teeth of hippopotamus were highly valued by dentists for that purpose, on account of keeping color better than any other kind of ivory.

In the construction of the tubular bridge over Menai strait, England, there were used 2,000,000 bolts, averaging seven-eighths of an inch in diameter, four inches in length. The quantity of iron consumed for the purpose amounted in length to 126 miles, and in weight 900 tons.

Probably 10,000 is an underestimate of the number of eggs shed annually by the herring.

DOMESTIC.

Comes and waffles of fowls may be prevented from freezing by oiling them so as to prevent their getting wet.

Pigs are able to consume far more food in proportion to their weight than either sheep or oxen.

The Italian bee was first imported into America in September, 1899, and ever since introduction and home breeding of queens has been constantly gaining, until at present the supply rather exceeds the demand, and importers are opening a new field by introducing other races of bees.

Like the blackberry, the raspberry bears the fruit upon the cane of the previous year's growth, which, after fruitage, dies, the new cane coming forward for the next year's crop.

In the orchard the thumb and forefinger are a better pruning instrument than the knife, and the latter than the shears or the saw; but the former must be used in the nick of time.

Two cows well sheltered in winter, will produce more milk and butter than three unsheltered animals, though no more than half the feed required for the three should be given to the two.

If the cucumber which grows nearest the roof be saved for seed for a number of years in succession, the result will be a smaller and earlier variety. If the fruit on the extremity be saved it will produce a larger and later variety.

Whatever you undertake in the poultry line be sure to cultivate a thorough knowledge of its details before launching out with full steam in a haphazard way.

Sheep should be tagged regularly, and kept clean. They should be culled every year, and those in any manner deficient in form or age should be put in a separate pasture and fattened for the butcher.

Eggs from hens partake in a great degree of the flavor and quality of the food, proving that they should be fed on clean wholesome food. One may get onions instead of eggs by feeding hens on onions.

Tomato Soup.—One pint of milk, one quart of water, one pint of tomatoes; two crackers powdered, and one and a half teaspoonfuls soda. Boil twenty minutes.

To break up setting hens have seven pens, one for each day of the week, then all hens found wanting to set on any day of the week should be put in the pen corresponding to that day. Keep them in five days. By this arrangement it is easily told how long each hen or pen of hens have been in.

Save the middle grains of the fine ears of corn for seed.

Hogs should be allowed to have a heap of coal ashes. They will be all the healthier for it.

BEEF and mutton are not flavored by feasting turkeys to the animals—at least this is the statement of some who have tried it.

An orchard should not be planted in a clay soil unless the latter is underdrained afterwards, for which it becomes one of the best soils for apples and pears.

Let every farmer keep all the stock he can possibly afford to—and generally he can afford to keep more than he does. The dependence of farming for all time must be mainly on stock.

Young cows do not give as rich milk as do those of mature age. A lean cow gives poor milk and a fat one rich milk.

SCIENTIFIC.

The latitude of England is the same as that of Labrador, and the former country is only saved from the coldness and desolation of the latter by the warmth of the Gulf Stream.

Insects are often attracted from a distance by artificial flowers, but they never light on them, leading us to believe that they are guided by some other sense than that of sight.

If it is recommended that, as the common ailanthus tree is diseased, only the female trees should be propagated for shade in towns, the male having the disagreeable odor.

This assertion that iron and platinum when raised to incandescence, are transparent to light, has been proved false by a series of experiments.

Some engineers of Dundee, Scotland, have tried with success a new gun for throwing a line to a wrecked vessel. The gun is about two feet in length.

This impression that flowers are never found double in a wild state is an incorrect one, the fact being that this is frequently one of nature's variations.

Herr Hansen has found that the blue color in milk is due to the presence of peculiar microscopical organisms—known as bacteria—which multiply very rapidly, and in so doing produce a blue matter resembling astringent. These organisms render the milk unfit for food, especially for persons of weak digestive power.

M. H. F. Blanchard reports that he has observed white ants in the act of emitting syphonal sounds. Another observer, Mr. F. P. Pascoe, has heard a peculiar sound, in fields of Southern Europe, which was found to be the song of a small lizard. It is generally believed that these creatures have no power of producing vocal sounds.

As we ascend from the earth the air grows thinner and thinner. From this fact astronomers believe that the limit of the atmosphere is 200 miles from the earth's surface.

Coal consists of from eighty to ninety-five per cent of carbon mixed with a small proportion of mineral substances, which, after it is burned, remain as ashes, and of an inflammable gas contained in its interstices.

In Alpine regions there are more narrow, partly dried flower-fields than elsewhere, and a greater proportion of long-tongued insects, the flora seeming to be exactly adapted to the insects feeding on its honey.

The roots of various kinds of fish contain from about 30,000 to over 3,000,000 eggs.

The lion's teeth seem formed rather for destruction than for the chewing of his food.

A four-fingered monkey, in its native state, has been seen to go down to the edge of a stream, rinse its mouth and then clean its teeth with one of its fingers.

In Bavaria medical men are shorter lived than any other class. Out of every 100 individuals, 52 Protestants, 41 professors, 32 lawyers or magistrates, 34 Catholic priests, but only 20 doctors reach the age of 50.
The octopus has a gland which secretes an inky fluid, and this be squirts out, making a thick, dark cloud behind him which baffles his pursuer at the same time that it helps himself to dart away. Mr. Darwin asserts that the octopus often takes deliberate aim at an enemy when it squirts out this unpleasant fountain.

Octotriches, when the full number of eggs have been laid, invariably place one of them outside the nest—the nest consisting naturally of a hollow scooped out of the land by the action of the wings and legs of the birds. It has been found that these eggs are reserved as food for the chicks, which are often reared in a natural stall, miles away from a blade of grass or other food.

Moral Economy.

Industry need not wish.

Truth is the basis of every virtue.

A varice is the mother of many vices.

The path of truth is a plain and safe path.

Old injuries are seldom canceled by new benefits.

He that cannot live well to-day cannot to-morrow.

The fountain of content must spring up in the mind.

Falsehood sinks us into contempt with God and man.

The road to home and happiness lies over small stepping stones.

The touchstone by which men try us is most often their own vanity.

There is a long and wearisome step between admiration and imitation.

A man explodes with indignation when a woman causes to love him, yet he soon finds consolation; a woman is less demonstrative when deserted, and remains longer inconso- lable.

It is hard to personate and act a part long, for where truth is not at the bottom nature will always be endeavoring to return, and will peep out and betray itself one time or another.

Historical.

Libraries existed in Egypt contemporaneously with the Trojan war.

The earliest account of a diving bell in Europe is at Nuremberg, 1664.

Cuvier received a pitcher of wine every day from the cellard of Edward III.

The fine Syrian spouge is usually employed for the toilet, owing to its texture.

On account of the scarcity of wood in India the people burn manure for fuel.

The first normal school in America was established in Concord, Vt., in 1823.

Coves have been brought into the Europe- an market for more than 2,000 years.

The Egyptians placed a mummy at their festal boards to remind them of immortality.

Statistical.

The value of property, as assessed, for pur- poses of taxation, in the United States, is $16,897,135,567, or $336.80 per capita for a population of 50,155,783. The New England States, with 4,016,529 of the population, hold $2,992,670,566 of the property, or $601.27 per capita; that is to say, with considerably less than one-twelfth of the population they have about two-thirtieths of the wealth of the country. The Middle States have $7,567,675,816 of property to 11,756,653 inhabi- tants, or $673.55 per capita; the Western States have $8,180,524,014 to 18,523,889 people, or $438.63 per capita; and the South, with 17,257,993 people, assesses its own prop- erty at $2,290,246,890, or only $125.39 for each person. The States which have the most wealth have also the heaviest debts. In New England the state, county and town indebtedness amounts to $44.54 per capita; in the Middle States, $41.57; in the West, $13.17, and in the South, $13.43. The difference does not exactly correspond with the difference in wealth, but it does approxi- mately.

Contributions.

The Egg—its Contents and How it is Made.

My friend, as you are a close observer of nature, I should like you to explain to me the contents of this egg, and how it is made. It is composed of the ova, or yolk; and the albumen, or white, and a thin skin covering the same, and a shell enclosing the whole. What is the yolk composed of? It is composed of blood, assimilated through the working power of the hen; it also contains a portion of oil, derived from the grain that she may eat. What is the white composed of? It is a thick mucilage, made from any green substance that she may eat; young growing grass is preferable. Hens do not lay so well in winter, as the material for this purpose is in its dry state; the skin is made from the refuse of the woody, fibrous substance of the grass. The shell is composed of lime, or any hard substance easy to decompose; oyster shell, broken in small bits, is the best. Where are these oys or yolks first formed? They grow in a cluster on the spine, coming through a tuft of soft skin, perforated with small holes, and between the lungs and the kidney (fowls having but one), there is one forming every twenty-four or thirty-six hours, so long as they are in the laying mood. How long after the first appearance of the ova, before the egg is laid? From fifteen to twenty days; the ova, or yolk, is enclosed in a thin skin; as it grows the skin stretches; and when matured, the skin breaks, and it drops out into the mouth of the ova duct, which is somewhat of a funnel shape. The mouth then closes, and the yolk is swallow- ed into the first division of the duct; it then opens again, ready for the next, always on the alert. When two drop at the same time, it forms a double yolk; this is only a freak of nature, and the good condition of the hen. The first division of the duct is about five or six inches long; and in passing this division it makes three revolutions, and the white is put on in three separate layers. The next division is of the same length, and passing in a rotary motion, turning to the left with the small end first, opening the way as it passes, the same as swallowing. In this division is where the skinning process is per- formed; and also in this is where it gets its shape, d pending on the freeness of the duct to yield to its passage. The next division is six inches long; in this it receives the shell, which is a thin fluid, in color to suit the breed that is laying it, as it is the color of the egg that proves the genuineness of a thorough- bred fowl. At the terminus of the third divi- sion the duct is of a globe shape; here the egg turns up, and passes big end first, which is head first, according to nature. How long is the ova duct? It is from fifteen to twenty inches. This ova duct must be a curiously con- structed affair. It is. At the terminus of each division there is an elbow, and the inner side is very soft, with a silk-like feel, and is composed of folds, each one lapping partially over the other, and soft and pliable; the first division being the coarser, and increasing in fineness of folds, and more numerous; and as the egg passes each division, it presses from beneath them the amount necessary for the make-up of the same, and so on. How is this egg fertilized, and when? Through the influence of the male bird, which passes through a small tube or duct, lying along the spine and making a connection with the cluster of small undeveloped ovar. How long will this egg keep, that I may rely upon its hatching, providing I turn it over every day? You can't turn it over; you may turn the shell, but not the inner portion of the egg, as it is hung in the centre by two spiral cords, one being attached to each end of the yolk made fast to a thin net-work covering the yolk, and passes through the white and is fastened to the membrane or skin lining the shell. Each one of those cords is twisted the contrary way from the other, holding it the same way down all the time. This proves that the egg is growing and forming into its proper state, whilst passing the duct, as well as taking on its outward coating at the same time. Why is the head of the chick in the larger end of the egg? Because, when it is ready to extricate itself it has a greater distance to draw back its head and propel forward again with a heavy stroke, until the shell is cracked to admit air. This is its first breathing. How is it that it strikes the place every time? Because its head and neck is under the left wing; therefore it is supported by the same, and kept on a level. By this means it strikes the same place every time; it soon gains strength and knocks a hole through the shell. What is its mode of growth in the shell? It is made up entirely of the albumen or white; the first coating, or layer, forms the bone and sinews; the second the flesh, the third the skin; the first formation are two black specks, which are the eyes, one on each side of the spiral cord at the larger end; next the skull bone between, the neck and spine, legs and wings attaching; at nine days there is life; at the end of two weeks the white is consum- ed; the two spiral cords made a connection in the egg, and attaching the coating from the outside, now being formed into blood veins, and enclosing the yolk in a network of small ones; through these the chick derives its nourish- ment from the yolk; transforming back to its former substance, blood, after cracking the shell, it gains strength very fast, and those two blood veins commence drawing into the belly, and lifting what remains of the yolk,
and draw it in also; it now has strength to stretch out its tiny legs the yolk being out of the way of its tomsails, there is no danger; the navel being closed, and with its feet at the bottom and head and shoulders at the top, the shell divides in two halves and the chick rolls out. What have we that comes into the world, I may say, on a more scientific principle than the fowl, take it from the first formation of the ovum. Such is nature; the Almighty has made all things in wisdom, and for our benefit, and there are so many ways to cook the egg, also the chick, and every way of each it is calculated to tickle the palate. Take care of your poultry.—W. T. P.

CHINESE FRUIT PEAR

COLUMBIA, PA., February 10, 1882.

"Sha lea," or Chinese Sand Pear.

"Suet lea," or Chinese Snow Pear.

Friend S. N. Rudder:

During 1882, I grew a tree from the late Wm. R. Prince, of Flushing, Long Island, New York. It grew vigorously, and in a few years produced a heavy crop of its large and beautiful fruit. The pears are large and showy, but they never become soft or eatable, unless cooked. We did not know what they were good for, and we let them rot on the ground, but we have since discovered that for canning, for preserves, for applebutter, these pears can't be excelled.

If you wish to boil applebutter, and use them with the elder instead of apple, you will have an article that any person would prefer to all apples—all I can say is—it tastes different. At one time I raised a lot of seedlings; these grew to two to five feet high the first season. Other seedling pear trees rarely grew as many inches the first year. Of course I thought these would make excellent stocks to work on other pears; but I soon found that other pears, though growing freely on this stock for a year or two, did not continue their vigor, but stopped growing, became stunted, mossy, and bore poor, knotty fruit, and would not make thrifty trees. Yet these Chinese and crosses all take kindly on other pear stocks or trees.

A friend in Columbia, to whom I gave grafts of these trees, had them on to form large pear tree; and this has never been injured by cold, blight, or any thing else, but bears lots of its large fruit every year.

The last severe winter, (22° below zero), apparently did not injure any of my trees, yet the flower buds must have been injured, as none of my trees had a flower, or bore a single specimen of fruit the last season.

In 1859, the "Sha lea" and my seedling both bore heavy crops, though quite small trees. My seedling on a limb four feet long and an inch in diameter where it branches out from the main trunk, had thirty seven (37) large pears. One morning I went out with a basket intending to take them off—but lo! some person who probably had a better right to them than I had, cleaned them all of.

I have never seen or heard of a well authenticated ease of blight on any of this class of pears. I have had other pear trees killed by blight that stood only twenty feet from them. There have been rumors of them blighting, but these rumors want confirmation.

At Rochester, New York, they have what they call the Japan Pear. This may be what Mr. Prince called the "Suet lea," or Chinese Snow Pear, or a cross of it, as it is of the same class as all the other Chinese varieties—the Kieffer, Le Conte and the rest. This Japan variety is certainly a most excellent eating pear, as I can fully acknowledge from a specimen sent me last fall by Charles Downing, of Newburg, New York. This specimen was as round as a ball, with stem and eye a little depressed, twelve inches in circumference and of excellent quality.

Now where any trees of these Chinese species, such as have already been mixed or crossed with good pears, are growing and bearing fruit, the probability is, that their seeds being planted, these seedlings will still retain their peculiar growth and health, and the prospect of still further improvement is very promising. However, it would be better not to depend on bees to carry the pollen as they take the flower off with the pollen. Then by opening the flowers on a Chinese, and carefully removing the pistils before the pollen is ripe, and then with a camel's hair brush take the pollen off a flower of a super-abundant variety, and apply to the stigma of the one you wish to impregnate, you can hardly fail of success, and a new and superior class of pears will be the result. J. B. G.

COMMERCIAL FERTILIZERS.

The question of the comparative values of the various kinds of fertilizers manufactured or sold in this section of the State, appears to be a matter of great interest to farmers and others in the fast-improving agricultural district of which Oxford (Chester county) is the centre. According to an act of the Legislature of the 26th of June, 1870, every package of commercial fertilizer offered for sale is required to have stamped upon it the name of the manufacturer, the place where manufactured, the weight, and an analysis stating the percentage therein contained of nitrogen, or its equivalent of ammonia in an available form, of potash soluble in water, of phosphoric acid, &c., every manufacturer or importer of such fertilizers being required to pay a license to the state, the price of which varies from twenty to thirty dollars, according to quantity sold, and to file with the Secretary of the Board of Agriculture a copy of the analysis above referred to. Any person selling or offering for sale any commercial fertilizer without the required analysis, or stating that it contains more of the specified constituents than it really does, shall be liable to a fine, ranging in amount from twenty-five to one hundred dollars for the first offence and not less than two hundred dollars for each subsequent offence—half to go to the informer, provided the informer is a purchaser for his own use. It is made the duty of the board of agriculture to analyze such specimens of fertilizers as may be furnished by its agents, said samples to be accompanied with proper proof that they were fairly drawn, and the money paid for licenses is to constitute a special fund out of which the expenses of analysis are to be paid.

In pursuance of this act, Prof. F. A. Genth, "Chemist of the Pennsylvania Board of Agriculture" has made a tabular statement, giving the chemical analysis of more than one hundred different kinds of fertilizers which are sold in the State, most of which are also manufactured here, but some are imported from the West, New York, Ohio, Illinois, and even from Missouri. The money value of the different manorial ingredients is rated by Prof. Genth as follows, viz.:

- Soluble and reverted phosphoric acid 10 cts. per pound; insoluble phosphoric acid from bone, 5 cts.; from South Carolina Rock, 5 cts.,
THE LANCASTER FARMER.

Of the basis of these rates and of the analysis of the different samples tested, the Professor gives the estimated value per ton of each kind embraced in the table, as also the selling price of the same at the place of selection. If his figures are in the least to be depended on, a great deal of money is wasted by farmers in the purchase of fertilizers whose value is much less than the cost. Of the whole number of samples given in the table the self-price of more than two-thirds of them is greater than the calculated value, and in some cases very much greater. For instance, the "Complete Bone Phosphate" from the Allen- town Manufacturing Company, worth $25.21 per ton; the "Plant Food" from Frederick, Md., selling at $40, is worth but $30.78; the "Economical Fertilizer" of Bangh & Sons, Philadelphia, worth $25.32, they sell at $33, &c.; the "Ammoniated Bone Phosphate" of Josiah Cope & Co., near Oxford, worth $27.16, is sold at $35; the "Fossil Alkalite" of Reeve & Co., selling for $15, is only worth $2.03; and the "Ammoniated Bone Phosphate" of the Susquehanna Fertilizing Company, at Oxford, selling at $34, is given as worth only $30.46.

The third annual exhibition of the Lancaster Poultry association, which opened, in Excelsior Hall, on Thursday, January 12th, 1882, closed on Wednesday evening the 18th. It was, in all respects, the best and most successful exhibition of poultry ever given in this county, if not in the state, and was attended by a far larger number of visitors than either of the preceding shows given under the auspices of the society.

Below will be found the list of premiums awarded by the judges, and paid by the society.

Class 1.—Asiatics.

\[\text{Light Brahmas—Fowls, Dr. D. F. Royer, 1st and 4th specials; Wm. F. McLean, 2d; H. H. Hewitt, 3d. Chicks, Hon. C. S. Cooper and Dr. D. F. Royer, tied for 1st and 2d premiums and special, and divided them; T. M. Nelson 3d.} \]

\[\text{Dark Brahmas—Fowls, Dr. D. Royer 1st, Dr. D. F. Royer 1st and 2d, and tied Zimmermann and Hoffer for 3d, besides taking two specials.} \]

\[\text{White Cochin—Fowls, A. S. Flowers, 1st and special; J. F. Shaffer 2d and 3d. Chicks, A. S. Flowers, 1st 2d and 3d, and several specials.} \]

\[\text{Black Cochin—Fowls, Samuel G. Eagle 1st and 2d, and several specials; J. F. Shaffer 3d. Chicks, T. Frank Evans 1st and 3d, and special; Dr. E. H. Witmer 2d.} \]

\[\text{Buff Cochin—Fowls, L. K. Bennett 1st; Zimmermann & Hoffer 2d; M. B. Weidler 3d. Chicks, no 1st premium; J. B. Long 2d; A. B. Hostetler, 3d.} \]

\[\text{Partridge Cochin—Fowls, H. S. Garber 1st and 2d and 5 specials; C. E. Long 3d. Chicks, H. S. Garber 1st and 2d and tied Dr. D. Royer for 3d and special.} \]

\[\text{Lausanne—Fowls, Dr. D. F. Royer 1st; T. Frank Evans 2d, Chicks, A. H. Sharpless 1st; Dr. D. F. Royer 2d.} \]

\[\text{Games.} \]

\[\text{Brown Broasted Red—Fowls, Dr. D. F. Royer, 1st and 3d; E. N. Denman, 2d. Chicks, Dr. D. F. Royer, 1st and specials; E. F. Denman, 2d.} \]

\[\text{White Game—Fowls, T. B. Sorrey 1st; K. Bennett 2d and special.} \]

\[\text{Black Game—Fowls and chicks, no 1st prem., T. K. Bennett 2d.} \]

\[\text{Gray—Chicks, T. B. Sorrey 1st; B. B. Red Monday—Fowls, D. M. Brosey 1st. Chicks, D. M. Brosey 1st and 2d.} \]

\[\text{Class 3—Game Bantams.} \]

\[\text{Brown Broasted Red—Fowls, T. K. Bennett 1st, 3d and 2d specialty; Charles E. Long 2d. Chicks, T. B. Brosey 1st and special; Frank Selok 2d; George Snyder 3d.} \]

\[\text{Brown Broasted Red—Fowls and chicks, T. B. Sorrey 1st—no competition.} \]

\[\text{Ginger Red—Chicks, J. L. Otto, 1st and special—no competition.} \]

\[\text{Yellow Duckling—Fowls, Dr. J. C. Maple 1st and 2d, and special; E. L. Long 3d. Chicks, T. K. Bennett 1st, Chas. E. Long, 2d.} \]

\[\text{Silver Duckling—Fowls, Dr. J. C. Maple 1st and special, and tied T. K. Bennett for 2d and 3d. Chicks, George Snyder 1st; Dr. J. C. Maple 2d; Aug. L. Weitzel 3d.} \]

\[\text{Red Pyle—Fowls, T. B. Sorrey 1st; Geo. Snyder 2d; Chas. E. Long, 3d. Chicks, T. K. Bennett 1st, and ties Dr. Maple for 2d and 3d.} \]

\[\text{White Pyle—Fowls, George Snyder 1st; Dr. J. C. Maple 3d. Chicks, J. B. Lighty 1st; Dr. Maple 2d.} \]

\[\text{Black—Fowls, T. K. Bennett 1st—no competition. Chicks, T. B. Sorrey 1st and special—no competition.} \]

\[\text{White—Fowls, T. B. Sorrey 1st. Chicks, J. L. Otto 1st; T. B. Sorrey 2d.} \]

\[\text{Gray—Chicks, J. L. Otto 1st—no competition.} \]

\[\text{Class 4—Hamburgs.} \]

\[\text{Black—Fowls, Snyder & Hartman, 1st and 2d. Chicks, Geo. C. Miller, 1st and 4th special; T. K. Bennett, 2d; T. B. Sorrey, 3d.} \]

\[\text{Silver Penciled—Fowls, S. M. Nelson, 1st—no competition. Chicks, Mrs. Kate Yearsley Ash, 1st and 3d.} \]

\[\text{Golden Penciled—Fowls, J. W. Bruckhart, 1st; Snyder & Hartman, 2d; T. K. Bennett, 3d. Chicks, T. B. Sorrey, 1st; J. W. Bruckhart, 2d and 3d.} \]

\[\text{Silver Spangled—Fowls, no 1st premium; Wm. F. McLean, 2d; Hon. J. A. Sober, 3d. Chicks, T. B. Sorrey, 1st and special; Hon. J. A. Sober, 2d and 3d.} \]

\[\text{Class 5—Spanish.} \]

\[\text{Black Spanish—Chicks, John Grosb, 1st—no competition.} \]

\[\text{White Leghorns—Fowls, Henry Neater, 1st and 3d; Dr. D. F. Royer, 2d. Chicks, Robert R. Morris, 1st and six specials; John R. Trissler, 2d; and 3d.} \]

\[\text{Brown Leghorns—Fowls, Dr. D. F. Royer, 1st—no competition. Chicks, Jno. H. Trissler, 1st, 2d and 5 specials; M. L. Greider, 3d.} \]

\[\text{Class 6—American.} \]

\[\text{Plymouth Rock—Fowls, Dr. D. F. Royer, 1st and 5 specials; Aug. L. Weitzel, 2d; Louni Lattin, 3d. Chicks, Dr. D. F. Royer, 1st and specials; E. F. Denman, 2d.} \]

[February, 1901]
THE LANCASTER FARMER.

1st and 2d and five specials; Ang. L. Wentzel, 3d.

Downing—Chicks, John Wilcox, 1st and special; M. L. Greider, 2d; T. K. Bennett, 3d.

American Sebright—Fowls, Mrs. Kate Yearsly Ash, 1st. Chick, G. C. Morris, 2d and 4th; Mrs. Kate Yearsly Ash, 3d.

Black Java—Chicks, M. L. Greider, 1st and special; Lonnt Luttin, 2d and 3d.

Ermaline—Fowls, Kate Yearsly Ash, 1st—no competition.

Class 7—Polish, Plain or Bearded.

White Crested White—Fowls, J. W. Carroll, 1st; T. B. Dorsey, 2d, Chicks, Wm. A. Schoenberger, 1st.

White Crested Black—Fowls Dr., D. F. Royer, 1st—no competition; Chicks, Dr. D. F. Royer, 1st and 2d and four specials; J. W. Brackhart, 3d.

Golden Bearded—Fowls, T. B. Dorsey, 1st; T. K. Bennett, 2d; Wm. A. Schoenberger, 3d, Chicks, T. B. Dorsey, 1st; F. K. Bennett, 2d; J. W. Carroll, 3d.

Silver Bearded—Fowls and chiks, T. B. Dorsey, 1st—no competition.

Class 8—French.

Houdon—Fowls, B. S. Kouns, 1st; Richard Pressner, 2d, Chicks, W. T. Wyman, 1st and four specials; T. M. Nelson, 2d; H. H. Hewitt, 3d.

Class 9—Dorkings.

White—Fowls, no 1st premium; W. J. Kirby, 2d and special—no competition.

Cochins—Chicks, H. H. Turtle, 1st—no competition.

Class 10—Bantams.

Golden Sebright—Fowls, no 1st premium; J. Dr. Maple, 2d and two specials; B. S. Kouns, 3d.

Silver Sebright—Fowls, no 1st or 2d premiums; Dr. D. F. Royer, 3d and two specials. Rose Comb White—Fowls, J. L. Otto, 1st, 2d and two specials. Chicks, J. L. Otto, 1st—no competition.


Black African—Fowls, Chas. Lippold, 1st; T. B. Dorsey, 2d; Dr. J. C. Maple, 3d.

Class 11—Miscellaneous.

Silky—Fowls and chicks, Wm. M. McLean, 1st—no competition.

Silky—Fowls and chicks, Wm. M. McLean, 1st—no competition.

Class 12—Turkeys.

Bronze—Fowls, B. L. Wood, 1st and three specials; Samuel G. Engle, 2d; T. M. Nelson, 3d, Chicks, B. L. Wood, 1st.

White—Fowls and chicks, J. W. Brackhart, 1st and two specials.

Narragansett—M. J. Greider, 1st and special—no competition.

Class 13—Ducks.

Pekin—Dr. D. F. Royer, 1st and special; Geo. A. Geyer, 2d; J. W. Brackhart, 3d.

Bouc—Geo. A. Geyer, 1st.

Colorful Muscovy—Dr. D. F. Royer, 1st.

Cayuga—Dr. D. F. Royer, 1st.

Class 14—Geese.

Toulouse—George A. Geyer, 1st and special.

Class 15—Ornamental.

White Guineas—J. B. Garman, 1st—no competition.
WHITE VEIN—CAUSE OF THIS DISEASE IN TOBACCO.

There are a few things connected with tobacco growing more aggravating to the grower than to find on stripping his tobacco that the small ribs or veins are not colored like the leaf, but that it is striped, giving it a streaked appearance. The farmer, very naturally, asks himself the cause, and soon has some theory to account for it. A number of these theories have come under the writer's observation, and some have been tested by him, and a record of his experiences, it is thought, will be of interest to others and stimulate them to test the matter more fully, both by experiment and observation.

The Early Cutting Theory.
The first theory, as near as I can recollect, was given me six or seven years ago, and was the too early cutting of the crop. We cut several hundred stalks quite green, in order to give a road through the field. This was colored so nicely, while the balance of the crop that year, which had ripened, contained so much white vein that it refuted this theory at once, and I began to inquire for another.

The next year a friend cut his crop rather over-ripe, had plenty of white vein, and he jumped to the conclusion that over-ripeness caused it. The next year several neighbors cut early and still had white vein.

Another gentleman proposed that old worn lands caused the vein, and that on new lands it would cure all right. This also proved incorrect, as I have had white vein on the best of new ground.

Convincing Experiences.
Thus I continued groping in the dark until the summer of 1879, in which I had experiences which convinced me I had at last reached the right solution of the problem. That season I had a variety of tobacco known in our neighborhood as the "Hanging Leaf Hoovers" which is a slow growth. After topping, it received but a slight rain until it was cut off. On stripping it, I found the tobacco all nicely cured except that the first five or six branch ribs or veins from the tips of the leaves were white!

I reasoned as follows: The phenomenon is often witnessed of the human heart becoming so weakened by disease that it is not able to propel the life power, the blood, into the extremities, the feet and hands, thus causing them to the first, often as long as several days before the heart ceases to beat; so the plant, by continued drought, became so weakened that the sap did not circulate to the veins at the extreme points of the leaves, and they died before the tobacco was cut and could not possibly cure brown, as could those which were nearer the life centre of the plant—the stalk—and therefore grew more perfect.

This, then, I think is the cause of white vein; either from drought or some other cause the plant becomes stunted before cutting, and the veins are no longer vitalized and cannot cure as do those of stalks which continue growing vigorously from the time of planting until it is cut, and in this new land has the advantage, as it pushes the plant to perfection quicker than should be.

I do not think, as some do, that white vein is under our control, but that it depends entirely on the weather after topping, and I think if farmers will but reflect how the growing season was when they had much white vein, they will invariably have found it dry and hot.—E. K. H., in New Era.

TOBACCO GROWING—PROFITS REALIZED BY SOME EXPERTS.

The past year was a remarkable one in several ways for the tobacco growers of Lancaster county. The planting season opened very auspiciously, and the young plants were, perhaps, never set out under more favorable circumstances. For a time all went well and the crop came along famously. But at the season when rains were most needed by the maturing plants, a long-continued drought set in, which continued without intermission until the crop was harvested. What promised to be the largest crop ever grown in this county proved the smallest we have had in recent years.

Early Buying in the Field.
But the early planted fields had advanced so far towards maturity when the dry spell came that they suffered comparatively little from want of rain. The belief that there would be a very short crop woke up the buyers to a study of the situation, and as the previous year's crop had been very defective, each buyer became very desirous of securing some of the choice lots of the present season. The result was that about the middle of August buyers by the dozen came pouring into the county, overrunning every portion of it in their search of choice lots, which, when found, they at once purchased while still standing in the field, paying unprecedented prices for them. Nothing to match this has ever before been seen among us, and perhaps nowhere else in the United States. Perhaps one-half the entire product of the county was purchased in this way, and even after the furore had spent its greatest force, the buying continued steadily until near the whole product of the county was secured by the eager buyers.

Result of Careful Handling.
Purchasers, however, by the terms of their contracts, bound the farmers to an unusually careful handling of their crops and the latter, fearful that the high prices paid by the former might induce them to find fault for the purpose of breaking their contracts, were careful to manipulate their crops with even more than their usual care. The result has been that much of the present crop is in some particulars the best and most carefully handled tobacco ever grown, and has proved unusually profitable to the growers, as we hope and believe it will also be to the liberal men who have bought it. Tobacco has been delivered at the packing houses in this city during the present month equal in quality to any ever grown in Pennsylvania, and although the weight per acre is considerably below the average of some other years, the greatly increased prices received for the crop have run the value per acre realized by some farmers fully up, if not beyond, that of any previous year. Several instances of this kind have come to our notice during the present week, and we have deemed the matter of sufficient interest to give the figures here.

An Excellent Crop.
The first crop to which we call attention was that grown by Mr. Moses Staively, of Pequea township, purchased by Messrs. Sills & Frey, of this city, and received by them on last Wednesday. It was not a large crop, consisting of only 10,940 plants, grown on something less than two acres of ground. It was planted in rows four feet apart, and 28 inches apart in the rows. The crop was sold in the early fall at 33 cents through, and when delivered was found to consist, after careful assorting by the grower, of 1,940 pounds of
wrappers over 24 inches long, 761 pounds of wrappers under 24 inches, 490 pounds ofseconds, and 377 pounds of fillers, making a total of 3,271 pounds, by no means a large yield so far as pounds are concerned, but the great price of 23 cents brought the value of the crop to $1,679.43, for which the fortunate grower received a check.

Cost of Growing Tobacco.

It is needless for us to say this lot of tobacco is a superb one. The leaves are long, silky, soft and tough, and the coats of the “bunches” are as even as if they had been planed off. It has been well handled, as it deserved to be. To show how much labor and expense was incurred in the production of this lot of tobacco, the grower, at our request, made a detailed estimate, which will show not only what figures can be realized from tobacco growing, but what care andattention are required to raise a first-class crop. A year ago, at the request of the Census Department, we procured from a number of well known growers careful estimates of the cost of growing an acre of tobacco, and we have often wished to give them in these columns, had the government report not been felt at liberty to use them until then. The following estimate will, however, serve to show growers elsewhere something of the cost of growing fine tobacco here:

- Interest on value of land ($230 per acre)......$ 50.00
- Marking and care of seed bed.............. 5.00
- Plowing two acres one time.............. 5.00
- Harrowing ground three times............. 8.00
- Setting out plants......................... 1.50
- Cultivating with shovel-harrow five times... 10.00
- Hoeing three times, eighteen days........ 18.00
- Worming, toppling and suckerling......... 35.00
- Cultivating with horse........................ 6.00
- Interest on cost of barn, lath, etc......... 10.00
- Striping and preparing for market.......... 40.00
- Bringing to market......................... 8.00
- Value of manure used........................ 25.00
- Total cost..................................$212.00

Here we have as the total cost of the crop $212.00; the field was less than two acres, but, to avoid fractions, we will call it two full acres, and we therefore find that the cost per acre was $106.00. This leaves the grower a net profit of $433.71 per acre, which, all things considered, is truly a wonderful result. The field was so much less than two acres that, strictly speaking, the profits may fairly be set down at $150 per acre. There was not one day during the entire growing season that hands were not at work in the field. The morning was not done once or twice a week, but every day, nor was this task left to chil- dren or negroes, but done steadily throughout the season, and nothing was left undone to secure success. The sun realized shows that it pays to give the tobacco crop careful attention.

Another Paying Crop.

Mosses, Skiles & Frey received the crop grown on 33 acres, grown by W. S. Webster, of Manor township. The yield, in weight, was much greater in this case than in the preceding one, having been 7,737 pounds, or 2,210 per acre, but the price paid was only 44 cents through this; netted the grower $1,895.56 for his crop, or at the rate of $541.58 per acre. If we allow for cost of cultivation at the same rates as estimated in the crop mentioned above, we have as the net profit per acre $643.58, which nearly equals the results secured by Mr. Snively. Let us suppose, for a moment, that Mr. Stelman had received the same price for his crop per pound that Mr. Snively did, the result would have been that 31 acres would have yielded him a gross sum of $2,553.21, or at the rate of $79.46 per acre, and deducting $166 as the cost per acre for cultivation and expenses, we get the net sum of $624.46 as profit realized from a single acre grown in tobacco.

Still Another.

But we have still another case we shall lay before our readers. Mr. John J. Long, of Drumore township, on last Monday, delivered at the packing house of Mr. Daniel Mayer, in this city, his crop grown on 12 acres of ground, weighing 3,939 pounds, and for which he was paid the sum of $978.88, or at the rate of 32 cents per pound. This is a yield of 2,658 pounds per acre, which at the price of $3,472, 12 cents per pound, would be valued at $881.00. Eliminating Mr. Snively’s allowance of $166 as the cost per acre, we have net profit of $446, or realized from a single acre of Lancaster county grown tobacco.

The above figures, be it remembered, are not ideal ones. They are actual facts. They are from the books of the purchasers and the checks received by the sellers. They represent three transactions consummated during the present week. They are not isolated cases, either. We have no doubt others like them have occurred of which we have not heard, and that still others, and not a few of them either, will transpose before the present crop is delivered.

In Conclusion.

A few papers in neighboring counties, whose ignorance far outruns their sense and discretion, have from time to time, been proclaiming that their tobacco farmers are as skillful as our own and their crops as good or even better. We have been content to let these sheets blow their penny trumpets uncontradicted. We now confront them with facts. If they have other that equal or exceed them, we will gracefully acknowledge that their tobacco grows to be skillful and their product superior; but nothing short of actual facts will answer—bare assertions will not serve the purpose. We have no desire to belittle the product of our neighbors; there is no occasion to do so. But when we can get such prices as are given above and realize sums per acre that exceed those received by the growers of seelcoten anywhere in the United States, we think our claim to be the champion tobacco growers of the country is pretty well founded.

AMERICAN SILK GOODS.

The silk trade of America, and the subject of sericulture generally cannot be said to have enlisted that attention outside of the circle directly interested to which they are reasonably entitled. Any one reading the volume published under the direction of the Silk Association of America, by Mr. William C. Wycoff, of New York, will certainly be interested and very probably be surprised.

"Everybody," he says in his preface, "knows that silk goods, both domestic and foreign, are cheaper now than formerly, but comparatively few persons are aware that the American goods are, on an average, better than European. In the final sales of the retailer to the consumer, the foreign manufacturers are obliged to make better fabrics than their foreign rivals in order to attain the market where imported articles held a long established reputation." Census bulletin No. 68, prepared by Mr. Wycoff, as a special agent of the Census office, gave 31,440 as the greatest number of hands employed at any one time during the year ending June 30, 1880, in the various factories, to whom $9,107,838 were paid in wages. The total number of factories reporting was 383, representing a capital investment of $18,800,300, and total receipts of $2,476,800. The total value of finished goods produced during the year was $34,410,463, the gross value of materials and supplies $22,571,300. The principal articles of production were: Machine twist, $6,000,275; ribbons, $6,535,000; fringes and dress trimmings, $4,150,375; dress goods, $4,115,025; handkerchiefs, $3,832,550; cords, tassels and millinery trimmings, $1,392,355; upholstery and millinier trimmings, $1,362,355; satins, $1,011,875. It is not very easy to make comparisons with imported silks, as the invoice value of these latter is said to be on an average twenty-five per cent. under the real figure, while the duty and dealers' profits have to be added, but is estimated that rather more than a third of the silk goods used in the United States were of American manufacture. About ninety-five per cent. of the imports come through New York. The total value in 1880 was $33,365,460, or about $7,500,000 more than in the preceding year, a showing without parallel since 1871, when the imports amounted to $33,856,719. In 1877 and 1878 a figure of barely $20,000,000 was attained, the figures being eloquent as to the financial condition of the community. Silk, it may be said, stands fourth in the list of duty-paying imports, contributing $18,856,400 to the Treasury, and so ranking after sugar, wood and iron. The imports of raw silk in the last fiscal year amounted to 20,138 bales, valued at $10,885,167, a falling off from 21,741 bales, valued at $1,309,745 in the previous year, but far in advance of former seasons.

Perhaps the craze which most frequently agitates the agricultural community is that of producing silk for home manufacture. There is no difficulty in breeding and rearing silkworms if one has time, patience and mulberry trees at command, but there is no market for the cocoons, the manufacturer being left at his option to sell in the wholesale market or to employ the manufacture of silk thread. Mr. Wycoff tells us, though it has now gone out foreign competition, was a long while "in the wilderness." American housewives had a prejudice in favor of Italian sewing silk, and Massachusetts manufacturers had to humor them by affecting foreign packages and wrappers, and compounding "Italian" trade names. The
sowing-machine has completely revolutionized the business and brought about the invention of machine-twist. American sewing silk has an extremely high standard of purity—a fact which has naturally helped to drive out English goods which, by the addition of dye, are made to yield from eighteen to twenty-five pounds for each pound of raw silk. Thousands of cords of white birch from Maine are annually converted into spoons, and many English makers come to the United States for these little articles, which an ingenious machine centres and prints—printing on the wood is preferred to labeling—at the rate of 100 a minute. The cabinets given by manufacturers to new customers with the first purchase cost about 1½ per cent. of the total sales; one firm has spent $150,000 in this sort of advertising. A $50 cabinet is nothing out of the way, and at times their value will reach $300 or $450. In dress goods, plain black fabrics are the hard-tie to make, as every defect in them is perceptible, and until a very recent period their successful manufacture was scarcely possible in the United States, primarily on account of the costliness of the skilled labor required. Now nearly a third of the plain silks are made here, and the industry is making steady progress, thanks especially to the care given to the quality of the article, while European manufacturers are only too apt to load theirs with dye. A simple test is to burn a small quantity of the threads, pure silk will immediately crisp and leave a pure charcoal; heavily dyed silk will smoulder and leave a yellow, greyish ash. Very few velvets are manufactured in the United States, but the production of figured dress silks, damaskins, satins and the like, is large and growing. American slates have a high reputation, and American ingenuity has proved equal to the task of producing a satisfactory and lasting silk for umbrellas. Silk haudorf-chefs have come into vogue during the last eight years and especially since the Centennial Exhibition. The manufacture of ribbons began in 1861 as an experiment, there being a demand for particular shades, which, it was thought, could be more speedily met by making than by importing. Now the business has grown to great proportions. Curiously enough, nearly all the designs for American ribbons originate in American factories, frequently months in advance of the introduction of the goods into the market.

**COAL TAR AND ALKALI IN PEACH CULTURE.**

Apropos to what has been said about protecting peach stems from borers and from yellows by scabbing the trees, and putting gas tar-impregnated sawdust or sand about the collar, Mr. Storm, of East Tyrone, Pa., reports that having some peach trees about as far gone as they could be to retain any life, a nurseryman whom he consulted about tarring the stems, told him that it was not much difference what he used, for trees so far gone did not recover, but tarring the whole, stem would be sure to finish them. Mr. S., thinking that desperate cases need desperate remedies, and wishing to experiment further with tar, cleaned out a basin round the base of the trees and poured in a pool of tar, entirely surrounding and soaking the collar, as he had done with advantage before to some borer-infected apple trees.

The result was that the peach trees threw out strong, healthy shoots the next season, and have maintained vigorous growth during two seasons since. Other cases within the experience of the writer have proved that tar, or even coal oil, can be applied to the back of young trees with impunity during the winter, but a coating of it in the summer is speedily followed, once mistaking directions, added a quantity of tar to a wash of soap and sulphur, which he was directed to apply to the stems of some young orchard trees in June. The tar, not mixing well, showed itself in daubs and streaks here and there on the stems, covering them nearly or quite half, and, being irremovable, was an eyesore for years. None of the trees suffered seriously, however, excepting in a few cases, where they had a heavy cost; these took on the appearance of being bark-bound and impeded in their growth.

In Mr. Rutter's late excellent work on the peach, he shows that by the free use of alkaline ashes and manures, especially potash and lime, will preserve a peach orchard from the yellows, as well as from other destroyers of its fertility. Mr. Rutter has had thirty-five years of very extensive and varied experience, and his reliability is beyond question. So far as regards the borers, the carbolic acid of coal tar is most convenient and effective. It mixes in water well by stirring it first into hot, strong soapsuds. A joint of the crude acid, costing 25 cents, is recommended to four or five gallons of soft soap; which, diluted, will make twenty gallons of wash, to be applied in June, and again in August for assured effectiveness, although the June application usually suffices.

**POINTS IN COWS.**

Points in stock are the badges of purity. What are known as "points" are certain conformations, outlines of shapes and marks of color which specify that the animal possessing them is truly and distinctly a member of the class denoting the specification. The average farmer gives but little attention to the finer points, but with his experience, and habit of association, judges very critically at times. While farmers are seemingly anxious to improve, they endeavor to do so without knowing in which direction to benefit themselves. Nearly every farmer claims to be an expert at selecting milch cows, yet in breeding his stock he does not consider first what he is to breed for. Does he stop to consider whether he wishes the offspring of his favorite cow to be a superior milker or a great butter producer? The influence of the sire is to be considered above all others in such a matter. Jersey bulls are scattered far and wide now, and are within the reach of all, and yet the dairymen who send his milk to market, and cares not to make butter, is foolish in patronizing Jersey bulls. The Jerseys are for butter-producing only, and are not heavy milkers. The milk such cows give is very rich; it is almost pure cream; but it does not come up in quantity. The farmer who desires large yields of milk from cows should seek to have transmitted to his young stock the blood of the Holstein or Aryshire; for, although the milk from cows of these breeds is not as rich in quality as that from the Jerseys or Guernseys, they greatly excel them in quantity. Thus, those farmers living within reach of cheese factories can better promote their interests by selecting Holsteins or Aryshires for improving their stock; while those who send butter to market should have nothing but the butter-producers. A fat cow is better than a fat bull, as in making a look and make-up. The eye and hair also give good indications. The first point for a farmer's observation, and the principal one, is to observe that she does not show a tendency to become "beefy," or rounding with points that denote good fattening qualities. A first-class cow does not take on fat as a rule, but is rather bony and ugly-looking. The shape of the Jersey should be deer-like, with a large, mild-looking eye and soft feeling of hide to the touch. The udder should be full, reaching far up at the rear. One of the most prominent points is the large milk ducts (sometimes as large as a person's arm) running from the udder to the middle of the stomach. They are sure indications of good milking qualities. Jerseys have black nozzles and tongues, the udder being usually smoother than in other breeds, and velvet-like when examined by touch. The Holsteins are a very large breed of cows, equaling the Short-horns in size, but largely excelling them in milking qualities. The young male calves from such cows can be kept with profit, as the Holsteins, when fed for the purpose, make not only good beef but equal to the best. Oxen from this stock are nearly equal to the Devon. Their color is usually black and white.

But in endeavoring to breed for milk it should not be forgotten that two excellent characteristics are rarely found in a single breed. Thus we must not expect to find good milkers among the Short-horns, nor have choice beef from the milch cows. A cow cannot make milk and beef at the same time. If her tendencies are toward milk she will be hard to fatten; if she keeps extra fat it means that she is a better flesh-former than a milk-producer. A great deal depends on the feed, as a matter of course; but the breed must first be taken into consideration, if an increase in the herd is contemplated.—Philadelphia Record.
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D. Diffenberger,Esq.; W. W. Greist, city; Eos H. Weaver, Strasburg; Hebron Herr, Lampeter; J. F. Landis, East Lampeter; D. W. Graybill, Petersburg; Mr. W. Landis, Lampeter. The following is the report of the township; Wash. L. Hershey, Chicklets; Levi S. Keib, Oregon; H. G. Rush, West Willow; Jno. H. Landis, Millersville; Cyrus Nef, Mountville, H. K. Myers, Millersville; Eph. S. Hoover, Manheim township; John Huber, Secretary of Secretory Linnville, ex Secretary Kneisl was recalled.

Crop Reports.

James Wood, Little Britain, reported a good crop of snow and nothing else visible. C. L. Huseeker noticed before the snow fell that the wheat and grass would look well.

J. F. Landis reported the water fall for January in East Lampeter was of average, and Hershey reported the crops generally in a favorable condition but did not particularize.

"Growth and Consumption of Timber Trees in America"

was the subject of an essay by C. L. Huseeker. It was substantially thus:

Although a dense forest, almost unbroken by civilized man, yet as early as 1720 John Birtam travelled from the banks of the Delaware a garden containing many forest trees of North America, and in the reign of Queen Anne, 1714, Captain White, one of our first geographers, pointed out the importance of the protection of the colonial forests. In 1750 the falling of white pine was prohibited. About the same time the practice of removing the bark of trees for tobacco was taken into consideration, and it is first put not to have been built so high, and invari-

ably have a ground floor or so arranged, if having another floor, that it could be opened to permit the moisture and dampness to draw up through the tobacco, and retarding the rapid curing which I cured in my tobacco cellar, when coming to shipping I discovered no white veins; also the leaves were not possessed of a very little; it also was subject to the influence of a ground floor, while that which was cured in my house was very light, and the highest part of the room, having not possessed this advantage, cured very rapidly, and the more rapid the more frequent would cause the leaves to come to a state of decay. Tobacco is often spoken of as not being beneficial to curing tobacco, owning no doubt to the heated condition in the tobacco, and the tobacco can be cured too rapidly. Tobacco harvested in a green state seldom curts much white.

Mr. Cooper thought Mr. Herr had struck the nail on the head in saying that when cured in a green and succulent condition the wood was in little danger of white vein. Many of us cut the wood too ripe; we wait for too much length. Better have less length and also less condensation. Mr. Graybill wanted to know why on a good healthy stalk one or two leaves will sometimes have white vein; to which Mr. Herr responded that part of the stalk was diseased, just as one finger on a man's hand may be diseased and the other digits perfectly healthy.

Mr. Graybill also wanted to know why you call sometimes sweat white veins; and in response, Mr. Herr thought it was a poor rule that would not work both ways; therefore if you can sweat in white veins when grading, and you can make a better method of curing; and as a preventative we should endeavor to raise healthy plants, transplant properly, cultivate frequently and trust in him who is the giver of all good gifts to send us copious showers to assist in a rapid growth, and we will be enabled to grow tobacco possessing the white vein.

The following lines written by Mr. E. I. Weaver:

President Witter had been told that two well

known growers in the eastern end leave their to-
bacco stand until very ripe, and they never have white vein. Two years ago Mr. Witter cut some tobacco when only reasonably ripe, cured it properly, and out of two acres, only 400 pounds were market-
able.

Mr. J. F. Landis said the best tobacco he ever grew stood at least two weeks after it was ripe.

Mr. J. H. Landis, through other growers, had learned that many concur that when a drought is followed by a wet spell and a consequent growth of the weed the white vein is very numerous.

This was just directly opposite to President Wit-

ter's results. Under just these circumstances two years ago he had a very fine crop and very little white vein.

In Mr. Graybill's section, three years ago, heavy

rains and hail occasioned a re-setting; then came a heavy fall of rain, and it was the best crop Mr. G. ever had.

Mr. Hoover also had a theory, to wit: In 1793, about the second week of August, heavy rains suc-
cceeded the long drought, and the result was a mag-
nificent crop. About the time tobacco needs rain the rains are the coming; if the plant then lack nourishment the leaf will probably show a defect in the shape of white veins.

Rank Growing Wheat.

"Ought Rank Wheat to be Pastured?" was an essay by James W. Wood. It depends upon the winter that follows. If we have an open winter it might be no disadvantage to pasture it out; but if the winter was severe, pasturing would be less des-
irable and quite risky. On the whole, he thought nothing would be better than a good crop.

Mr. Huseeker thought pasturing would have a tendency to check the rankness of wheat and thus make a better crop.

Dairy Cows and the Soiling System.

Can dairy cows be kept in a healthy condition by the soiling system, and is the butter good as was answered by J. F. Landis.

"Can dairy cows be kept in a healthy condition by the soiling system, and is their butter as good?"

If by the soiling system we mean the feeding of cows through the summer months in small inclosures or stables, and only take the parts into consideration touched upon by Mr. Landis, he said that he had in a small lot or stable to so full an extent as in the field. The first part of the question, as an answered, the second. In order to have sweet butter we must practice cleanliness from the time the cows ensue the cow the butter is on the board. There are few things so abhorrent of our health as butter. I have seen good butter turn out the worst of meats; making it fish in a kettle, etc., or anything else having an odor, which, in the absence of another, is also a source of annoyance put upon the table it has lost its sweetness. I claim that the soiling system, to some extent, affects the health of cows as well as the sweetness of the butter.

President Witter did not agree with the referee. He thought there were many advantages in the soiling system and one objection, viz: the disadvantage of the labor attending it. Mr. W.'s cows never did as well under the soiling system.

Mr. Neff is trying to feed his cattle entirely in the stable. Last year from December to February he could not cut the cows even for water, and they never did better. Mr. Neff said no reason why cattle could not be kept as well and in a healthy condition as in the stable. He cleaned his stables twice a day.

Mr. Cooper, one of the referees at the State Board of Agriculture, reported one of the most

interesting meetings the society ever held. The room was crowded, and all the essays and discussions evinced great interest on the part of the members.

The following questions are on the programme for next meeting:

1 Can we disperse with the division fences with profit? Eph. S. Hoover.

2 What is the best time for sowing clover? Eno H. Weaver.

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POULTRY ASSOCIATION.

The Association held their meeting on Monday morning, February 6. The following were present: President, John R. Brown; Secretary, J. B. Lichty; Treasurer, H. A. Tschudy, of Sorentville; John W. Robey, of Pipersville; William J. Neill, of Pipersville; J. H. Millard, of Pipersville; John J. Shriver, of Saukville; Joseph E. Miller, of Saukville; and William H. Johnson, of Saukville.

President B. H. Brown stated that there were forty-five members in good standing, the average attendance was thirteen, and during the year twenty-five members had been elected, of which number only six paid the membership fee. Members are in arrears up to the amount of $150. The Secretary suggested that those in arrears prior to January 1, 1884, be notified that upon the payment of their dues to that date, the association will place their names upon the honorary list of members. The total number of entries at the late show was 554, but only 523 birds were exhibited, of which 227 were poultry, 185 pigeons and 7 sage birds; also 35 breeding pens were exhibited. Cash premiums paid amount to $173.38; other special premiums awarded the total value of premiums, $150. Each class is entitled to the only class in which the entrance fees exceeded the premiums paid was the Spanish, consisting principally of Leghorns, although there was a loss of fifty cents on the Asatics. The varieties on which the entrance fees more than recompensed the society for premiums are—Light Bantams, 8c, Black; Red Leghorns; Cochins, B. B. S. Game, B. B. B. Game, Bantams, White and Brown Leghorns, Plymouth Rocks, and S. S. Bantams. In the pigeon list but five varieties paid, viz: White Crested Fantails, White Trumpeters, Blue and White Checkered Antwerpys, and Blue English Owls. There were sixty-two varieties of poultry which averaged over five; seventy-one of pigeons and six eage birds. Of the seventy-one varieties of pigeons exhibited but five paid the association. All premiums to foreign and local exhibitors had been paid, greatly to the credit of the society.

Treasurer J. B. Long then submitted his annual report, showing that $82.18 has been paid into his hands from the receipts of the show and other sources. $82.74 has been paid out, leaving in the treasury $19.44 to carry on the work in progress.

On motion of Mr. C. E. Long, the Secretary, was authorized to employ one man to collect the outstanding dues.

John Seldonridge, of Ephrata, was elected a member of the society.

The Secretary was authorized to place on the honorary list of membership such names as in his discretion he might see fit.

By a mistake express charges amounting to 35.30 had been charged to certain exhibitors. As the society had offered to pay this itself it promptly agreed to shoulder the debt.

Adjourned.

FULTON FARMERS’ CLUB.

The February meeting of the club was held at the residence of Joseph R. Brown. Members present: E. H. Haines, Wm. P. Haines, Montillon Brown, J. R. Brown, S. L. Gregg and Wm. King. The family of Josiah Brown was represented by his son Joel and that of Bedford Brown by his son Joel and that of Lindley King by S. Lindley Jackson.

Visitors: Neal Hamblen and wife, Layman C. Blackburn and wife, Edw. Stubs and wife, and Samuel J. Kirk and wife. The attendance was large and necessary.

Exhibits and Answers to Questions.

Joseph R. Blackburn exhibited a large plate of fine winesap apples, judging by the way they vanished, the Club thought to be very fine.

E. H. Haines asked if winesap apple trees grow as fast and come into bearing as soon as other varieties?

There were several present who had winesap trees. They all spoke of them as growing as well as other varieties and bearing good bBEARS.

Montillon Brown had been reading lately in an agricultural paper a kind of winter oats, or oats that could be sowed in the fall, and wished to know if any one present had any knowledge of it.

E. H. Haines said that he believed that there was such a variety and that there was a kind of oats mix’d with the wheat that the winter failed to kill.

It was the general opinion of the club that such a variety would not be at all desirable, as it would be too late to sow after the corn had been harvested, and it would not be fitted to give trouble by getting mixed with the wheat.

Neal Hamblen asked the proper time for trimming an Osage Orange hedge.

E. H. Haines said that he had experience with hedges, and thought that he knew. Whenever there was growth of six inches it should be cut off. It is easily done, and all that is cut off dries up and gives no further trouble. It is easier to trim three or four times a year than once. If the shoots are left to grow for a year, pruning breaks up the hedge and makes it look bad and leaves a lot of brush to burn.

Layman C. Blackburn had noticed an article in the New York Tribune, by J. F. Wade, giving an account of the writer’s experience with an old orchard which he had taken in hand when it was in a plight that it would take pages to describe, and a part of the trees so nearly dead that the owner said they could not be saved. By pruning, scraping off the old bark and filling the wet in times, when they could easily be removed, and pruning five times in a season, and dragging in proportion, he had completely renewed the old trees through and through, and led them into productive condition. He (L. C. Blackburn) wished to know the opinion of the club as to probable success in renovating old orchards in general by such treatment.

E. H. Haines: If the trees got into bad condition by disease they might be some hope of success, but if the trees were old, we might as well try to rejuvenate an old man.

Ed. Stubs could not agree with the writer that trees might be made to bear every year by thorough cultivation. He had seen trees that were cultivated that did not bear every year.

Neal Hamblen thought that the reason that trees bore only every other year was that they needed more rest than they got through the winter.

Montillon Brown had two Quebec apple trees, one of which did not miss a crop for ten years in succession. The owner of the trees was seventy years old; he around it and kept the ground loose. The other trees were not in so favorable a location, and bore every other year. There was not much difference in their vitality.

S. L. Brown had a similar experience with two trees. The hogs ran around one of them, vol it bore every year, but it wore out sooner than the other, which only bore every other year.

William King: Is it advisable to trim old trees? Ed. Stubs: Don’t think it is. They will die sooner than if left alone.

L. C. Blackburn: if trees are well trimmed when they are young they will need much after they grow old. It not attended to when young they will have to be trimmed when they are old.

E. H. Haines said that his father once let some Yankee graft some old trees. The grafts nearly grew and bore fruit, but it finally killed the trees.

Mary Ann Brown said that they once had an old orchard trimmed and it gradually died off. It never did any good after, Mr. Brown had some old trees on which large branches were dying out, leaving several feet remaining on the tree.

S. L. Gregg had an article read from the Oxford Press entitled “High Farming,” giving an account of the extraordinary productions of a farm in Lower Oxford township, Chester county. Some of the members thought it a very clever advertisement. The owner is a manufacturer of fertilizers.

Examining the Hoat’s Farm.

The forenoon session was now adjourned, both members and visitors retiring to the dining room, where for some time they diligently occupied their time in putting themselves outside of the good things of this world. After returning back to our own affairs in this line of business they plumped out through the whirling storm to look at the condition of the live stock of the host. After again convoking in the house, criticisms were called for.

Montillon Brown: He has some very nice fat sheep and I don’t go to see his wheat field. Suppose it is good.

William P. Haines had noticed some very thriving pigs.

Neal Hamblen spoke of the fine condition of the pigs, and also of their pen, which was well arranged and everything about in next order.

E. H. Haines, would like to see a good hog pen. He had been in search of one for some time and had come to the conclusion that a perfect hog pen or chicken house were things that had not yet been invented. This led to quite a discussion on the construction of hog houses.

LITERARY EXERCISES.

The literary exercises of the club were next taken up. Mr. S. L. Gregg began a “The Boy Con- vict’s Story,” an interesting story for young people, who, in his boyhood, had been kept in strict surveillance by his pious parents, who made the atmosphere of his home frigid with propriety, until at last he left the parental roof to seek abroad the recreations and pleasures for which he was longing and which were denied him at home. But he strayed too far, and finally was betrayed into the commission of crime.

Neal Hamblen congratulated the little girl on her choice of a selection for recitation. He thought that the young should not be restrained in civil amusements. It is a mistake that we do not mingle more with the young. Games and other amusements should not be discouraged, but we should use every means to make home cheerful to the children.

E. H. Haines was afraid that there was too much truth in the boy’s story. We should mingle freely with our children and let them see society as it is. Young people who are kept in restraint and isolated for fear of their being contaminated do not know what value to put on what they see and hear. They are liable to be taken in.

Montillon Brown thought, on one reason why people in our country did not mingle more freely with the children was owing to the secluded nature of the farmer’s life. This little Club gave an opportunity for a more social feeling between old and young. We should take the young with us and have them take an interest.

S. L. Gregg thought that the younger of the present day had many advantages that we were deprived of when we were young, and they should be encouraged to avail themselves of them.


The next meeting of the Club will be held at the residence of Joseph Grist, Fulton township, March 4th.

JANUARY MEETING OF THE LIN- NAEN.

The Society convened on Saturday afternoon, January 21. Those who had the privilege of being present were: Prof. Stahr, and the Secretary, Dr. Davis, occupying their respective chairs. After the formal opening and the collection of dues, the following donations to the museum and library were announced by the curators.

Museum.

A fine specimen of the “Frog Fish” (Ranafines), six inches in length, from Mr. Frank Mettles, was donated through Mr. Daniel Heilsh. This fish
THE LANCASTER FARMER. 31

was received from Baltimore in a cargo of oysters, and was still alive when it arrived in Lancaster, although it must have been out of the water several days.

Eight specimens of the _seventeenth-century cereal_. (Poaceae spicata) of the grass family, donated by Mr. Geo. Hencel, forist, East Orange Street. These insects were dug out of the ground, eighteen inches below the surface, and about five feet from the outside wall of Mr. H.'s greenhouse, on the 18th of Januarv, and were alive when received by the curators. Prof. Rieley is of the opinion that they belong to his brood No. 8 and will appear the "coming summer."

A beautiful specimen of Wilson's thrush (Turdus fruscens), found in a dying condition in East Orange street, in a brood No. 17, is now being furnished by W. de C. Rathbone. As this bird usually migrates in September or the beginning of October, it must have been deceived by the pleasant autumn weather, and was suddenly overcome by cold. A very perfect Indian implement, found on a small island in Susquehanna river, near Safe Harbor, was donated by Mrs. A. H. Reist, of No. 119 South Queen street, through Mr. William Roehm. This relic of the Red Man is of unusual form, and was probably used in "barking" trees, or skinning large animals, or both.

The "cross cotton" (Gossypium herbaceum) were donated by Mr. J. J. Sprunger, of Rome, Georgia. Height of plant, four feet six inches; spread, three feet; and contained one hundred and twenty bolls. This was represented as an average of the plants in the field where it grew. The "spongy" or "spagnum" (Spagnum cinnamomeum) was donated by Mrs. Robt. J. Meade, of Nantucket Beach, Mass., last summer, and donated by Mr. D. Maxwell, of Baltimore. One specimen is of a very delicate and uncommon form.

Library.


Historical.

The curators compile the following: "The SIXTH, and the "SHEILA" donated by Mrs. Gibson is an interesting letter from a friend in Nebraska, relating to some phenomenal peculiarities of the wells in the district where that friend resides.

New Bus ness.

The President announced the chairman of the standing committee for the year 1882, said chairman, under the provision of the constitution, being authorized to appoint each two colleagues from among the members and correspondents of the society. The committee is composed of: Dr. M. L. Davis, Orkology; Dr. William L. Gill, Eecology, W. T. Botton; Ichthyology, C. A. Heinrich; Entomology, S. B. Rathbone; Botany, Mrs. L. D. Zell; Geology, Prof. I. S. Gett; Palaeo-ecology, Prof. T. R. Baker; Microscopy, Dr. Kedgel; Mineralogy, J. B. Kevleski; Archeology, Prof. J. H. Stearns; and Natural Historical Miscellaneous, Mrs. F. E. Gibson.

After passing upon bills presented, and the usual social and scientific intercourse, the society adjourned to meet on the last Friday evening in February, of which hour and place will be announced by the secretary in due time.

AGRICULTURE.

PLANTING TOBACCO.

M. Quadruplex describes the method of planting tobacco in Virginia as follows:

The tobacco crop in Virginia has long been a source of great revenue, and there was a time when any agriculture outside of tobacco raising was supposed to be a losing business. Tobacco land must be prepared as carefully as the average farmer would prepare a garden. The beds for the plants are created in vertical rows, with a space of half and inch between the plants, and all the soil and bed spaces are gathered together and thrown off the hill. The way the seed is sown as we usually plant, and the hill is 12 inches in diameter. It is not enough to transplant the plant, if they are set about three feet apart, and about 4,500 plants is the average for an acre, and it must be kept "plowed up," which consists of breaking off the shoots, and suckers and pulling off the head, and the tobacco is continually being watched. Tobacco growers generally put in corn and other crops as well, so that hands can be shifted from one or another place, according to the weather on the state of the crop permits. A fair average per acre of tobacco is 250 bushels. Mothers of the seed must be made to yield about $800. Growers estimate $1,000 pounds to every hand employed, and the care of the tobacco crop is out of their half labor.

Improved Grasses.

In many respects grass culture has not kept pace with improvements in other branches. We are continually getting new plants, new trees, new fruits, vegetables, new grasses, but a new grass is never thought of. We have the same orchard-grass, the same yellow-grass, and the same dwarf ryegrass that our forefathers had a hundred years ago; and so far as the drift of thought goes, we shall have the same grasses for a hundred years yet. But we do not know if, or why, we do not know how, or how far grasses can be improved, and as we have not tried, we can say why they should not be improved, as well as improvements in any other thing; and there is no telling how far a grass can be improved and the matter as it should be.

We have to bear in mind the past twenty years or so, been treated to Hungarian grass or millet, a harsh, coarse thing, of little merit except for the very heavy soil it will grow on; and there are five or six years since we had a tan grass. There surely must be others which would be of advantage to introduce. We see in foreign agriculture to cultivate the scutch-grass, a species of fine grass, and, in England, they grow it in a set of grass called Tussock-grass, from its growing in large bunches, and which from its coarse description appears to be barely a fit place for a good grass. It does not appear to be considered very hardy; but there are no doubt a number of places on this continent where it would find itself entirely at home. It is said to grow five or six feet in height, and to produce several thousand of fine green fius after great many years. It appears to be hardy in Hungary, and if so it ought to stand considerable frost. We are not afraid to try it, but we are afraid that in this as in so many other new and re-potted valuable products of the soil, we shall not near many of these.

But it is not only the introduction of new species which would improve grasses. If there might be selected good varieties of kinds we now grow, just as we have selected good kinds of wheat, and early and abundant yields of grain, we could have a good chimney for someone.

Geronimus Telegraph.

Rotation of Crops.

In a well planned system of farming, the subject of crop rotation must be carefully considered, as one of the essential elements of success in its highest form. It is a common practice to hold to the idea that the alternation of crops, in mynte order, is a modern invention that was gradually developed by the practice of farmers, as a necessary part of the arict of agriculture. The early writers on agriculture, even from the times of the Romans, have, however, shown the necessity of varying the crops and the succession of crops from the teachings of experience. They were satisfied that a variety of crops grown in succession would give a greater aggregate yield than could otherwise be obtained. It is evident that the system could not, it is true, be given, but practical men were fully agreed in urging its importance, and many of them were doing it, with their own hands, some of the which the prevailing rule of farm practice in particular localities. That these practices are not now as common as they were, and modes of growth are based on, but not explained, principles, has been shown by direct ex-

Dr. Manly Miles in American Agriculturist.

Household Recipes.

ORANGE PIES.—Grate the rinds of two oranges and squeeze the juice. Cream a quarter of a pound of butter and by degrees add half a pound of sugar. Beat in the yolks of six eggs (already beaten) then the rinds and juice of the oranges. Beat the whites of the egg to a stiff froth and mix them lightly in with the other ingredients. Bake in paste lined tin plates.

NEW ENGLAND BAKED INDIAN PUMPKIN.—One quart of the juice of a cup of cupfuls of meat by degrees almost beaten together and sift all through a sieve. For yellow cakes take the yolks of the eggs and make with the same with sugar and flavoring to taste and bake three quarters of an hour. This preparation of tapioca is superior to any other, is nourishing, and saltable for one or two cups of beef from the skin, two pounds of cracker bricks, an onion, four stalks of celery, four potatoes, a gallon of water, pepper, salt, and nutmeg, and very gently three hours. Wash a cup of barley and soil in a very little clear water twenty minutes, strain it, put into the pot of barley and water, add the barley and simmer thirty minutes.

CORNSTARCH CAKES.—Take the whites of three eggs and beat them into a stiff froth, beat in the yolks of four eggs, two teaspoonsful of sugar, one of nutmeg, one of baking powder, and roll the corns in flour; put a lump of butter in a saucepan and set on the stove; when hot put the pasta on and let it bubble and grow up, put it in two parts or cooked whole; turn them so that they will brown on all sides.

BREAKFAST RICE.—Take three cups of sweet milk, two eggs, two teaspoonsfuls of cream tartar, one teaspoonful of salt, one tablespoonful of sugar, and one small cupful or spoonful of flour. Heat the eggs very light, put the cream in the flour and add the soda the same time. Put the rice in the bottom of a cake and roll the flour in corns; put a lump of butter in a saucepan and set on the stove; when hot put the pasta on and let it bubble and grow up, roll it up in two parts or cooked whole; turn them so that they will brown on all sides.

FRENCH TAPIOCHE POUNDING.—Take two ounces of tapioca and boil it in a half a pint of milk by degrees, and boil until the tapioca becomes very thick; put it in a basin to cool, keep it cool, and bake three quarters of an hour. This preparation of tapioca is superior to any other, is nourishing, and saltable for one or two cups of beef from the skin, two pounds of cracker bricks, an onion, four stalks of celery, four potatoes, a gallon of water, pepper, salt, and nutmeg, and very gently three hours. Wash a cup of barley and soil in a very little clear water twenty minutes, strain it, put into the pot of barley and water, add the barley and simmer thirty minutes.

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THE ARKANSAS. quarto syrup
Edited well the an of the exploitation and advertisement of Ward's Cor-
merical Museum. No. 1, vol. 2, of this rare journal is a part of the Bishel and
270. "It will mainly contain original matters: articles from various contributors on subjects connected with
ance received at the烦躁ad museum, and interest is the
field."
Ward's Natural Science Bulletin, published at the Natural Science Establishment, Roches-
, New York. Price 50 cents per annum. This is an
sacrament, and being the presentation of Ward's Natural
31. Ward's planter is the editor of the Cultivator, and
and of a number of other American journals. Ward
is only a name to be kept in the catalogue of offenders, and we don't
see how any one who does keep a specialty, can afford to do it.

THE SOUTHERN CULTIVATOR. "We have received the January number of the Southern Cultivator, the oldest, as it is the best, agricul-
tural journal in the Southern States. It is now pub-
ished at Washington, D.C. by C. A. Dow, the editor." W. L. Jones, for the editor of the culti-
Cultivator will not only maintain its former high
but, with the assistance of a small capital and a few friends, and the contributions of most eminent and popular writers on agriculture in this country, will attain a higher standard of excellence. To journal of its kind which will excel it in the value of its reader's going, the
beauty and grace of its form, and the soundness of its demands of Progressive Southern agriculture.
The illustrated title page is the finest of the kind we have ever seen. The publisher, Mr. H. B. Smith, of "Herb's Farm," should be read and studied by every farmer and planter in the South. The terms, $1.50 per
year, with specialization in those subjects as the society is to
be advertised for, seems to be sillas a good "days a coming for Arkansas."

THE ARKANSAS FARMER. "Non-partisan, non-
political, but devoted to the real interests of our agri-
cultural class," is the motto of this journal. It is printed at Little Rock, Ark., and is
sold for 50 cents per year, in advance. It is a valuable and
instructive periodical, and is published with the utmost care. The
Arkansas Farmer, 1882.

THE AMERICAN BEER JOURNAL. This oldest and
oldest paper devoted exclusively to progress in the use of beer, has been a valuable and in-
formative periodical for many years. It is published at New York, every week, at $2.00 a year, by

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THE OAKLAND EASTER, a repository of literary
verse, comprising poetry, tales, sketches, essays, notices, social
lite, humor, humor, &c., from the world of literature, science and art. Edited by Emerson Bennett, 102 S. Market St., Philadelphia, Pa., at $2.00 per annum issued monthly.
This is truly a "paper for all times, all people, and all ages, and by all, and for all, and of all."
We find it-all that its title claims it to be truly "a casket of gems," and we publish it, with all its literary and practical interests, &c., and for all the world, and no scientist should be without it. No one can form any conception of the labor it must have required to bring forth such a work, without carefully examining its pages.
Address, S. E. Cassino, No. 23 Hawley st.

THE ORIENTAL CASKET, a repository of literary
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Important to Grocers, Packers, Hucksters, and the General Public.

THE KING FORTUNE-MAKER.

OZONE.

A New Process for Preserving all Perishable Articles, Animal and Vegetable from Fermentation and Putrefaction, Retaining their Odor and Flavor.

"OZONE—Purest air, active state of Oxygen."—Webster.

This preservation is not a liquid pickle, or any of the old and exploded processes, but is simply and purely OZONE, as produced and applied by an entirely new process. Ozone is the antiseptic principle of every substance, and possesses the power to preserve animal and vegetable structures from decay.

There are few industries of our time in which the earth liable to decay or spoil which Ozone, the new Preservative, will not preserve for all time in a perfectly fresh and palatable condition.

Ozone is a natural preserver, has been known to our elder chemists for years, but until now, no means of producing it in a practical, inexpensive, and simple manner have been discovered.

Microscopic observations prove that decay is due to septic matter or minute germs, that develop and feed upon animal and vegetable structures. Ozone, applied by the Fleming method, destroys these germs at once and time preserves. At our office in Cincinnati can be seen almost every article that can be thought of, preserved by this process, and every visitor is welcomed to come in, taste, smell, take away with him, and test in every way the merits of Ozone as a preservative. We will also preserve, free of charge, any article that is brought to us sent prepaid in a bottle of any kind.

FRESH MEATS, such as beef, mutton, veal, pork, poultry, game, fish, etc., preserved by this method, can be sold in the stores or at the butcher's shop, at the same price or less, and with a better appearance, than if bottled. E.G.G.S can be treated a cost of less than one dollar a thousand dozen, and be kept in an ordinary room six months or more, thoroughly preserved by this method, and the eggs are fresh and perfect as eggs that were laid a month before they were treated, and will sell at strictly "wholes." The advantage in preserving eggs is readily seen, there being no fear of the dozen, and by keeping these, can be sold for an advance of two hundred to three hundred per cent. One man, with this method, can preserve $500 dozen a day.

FISH may be preserved in shops and their native state can be preserved in any part of the world. The perfume expressed from fruits can be held for an indefinite period without fermentation—save the great value of the fruit. The fish can be held perfectly sweet for any length of time.

VEGETABLES can be kept for an indefinite period in their natural condition, retaining their odor and flavor, longer than is possible by any known method. All vegetables, as long as they are kept in their normal condition, B.B.T. after being treated by this process, will not become rancid.

Dead human bodies, treated before decomposition sets in, can be held in a natural condition for weeks, without any use of any chemical. Hence the great value of Ozone to undertakers.

There is no change in the slightest particular in the appearance of any article thus preserved, and no trace of any harsh or unnatural odor or taste.

The process is so simple that a child can operate as well and as successfully as a man. There is no expense of machinery required.

A fortune awaits any man who secures control of OZONE in any Township or County.

A. R. Rowan, Marion, Ohio, has cleared $2,000 in two months. $2 for a test package was his first investment.

W. W. Beiler, Lebanon, Warren County, Ohio, made $10,000 on eggs purchased in August and sold November by using the Fleming method.

K. Raymond, Norristown, Belmont Co., Ohio, is clearing $2,000 a month in handling and selling Ozone.

E. W. Estes, Ironsboro, Tenn., has cleared $1,000 from a $2 test package since August.

J. H. Spradlin, Baton Rouge, La., has cleared $2,000 a month in the sale of Ozone.

I. G. Taylor, 20 La Salle St., Chicago, is preserving eggs, fruit, etc., for the commission men of Chicago, charging $5 per dozen for this process. He is preserving 150 dozen eggs per day, and on several occasions has made as much as $250 a month clear. $2 for a test package was his first investment.

J. F. Smith, 154 South Street, is making $50 a month in handling vinegar mills, preserving and shipping it as far as all parts of the country. Many vinegar makers are using Ozone in their business.

F. W. Johnson, 206 Main Street, by using Ozone, has cleared $1,000 in the first six months of this year.

There are hundreds of instances which we have had in the privilege of publishing. There are scores of others. Write to us in your own handwriting.

A. H. Warner, 245 W. 8th Street, Los Angeles, Calif., is making $2,000 a month in the preservation of fruit and vegetables.

How to Secure a Fortune with Ozone.

A test package of Ozone containing a sufficient quantity to preserve one hundred dozen eggs, or other articles, as a proposition, will be sent to any applicant on receipt of $2. This package will enable the applicant to preserve any article he desires at the cost of Ozone, and thus satisfy himself as to the extraordinary merits of Ozone as a preservative.

A man who can sell socks at ten cent, or can sell out his stock of Ozone at $2 a package, will have a fortune.

Now, to point the absolute truth of everything we have said in this paper, we propose to place in your hands a blank by which you can make a fortune at no cost. Write to us in your own handwriting.

The job rooms of THE LANCASTER EXAMINER are filled with the latest styles of press, material, etc., and we are prepared to do all kinds of work and furnish business in its healthiest form.

The man who secures control of OZONE for any special territory, will enjoy a monopoly which will surely result in a fortune.

Send in the blank, and we guarantee to send you at once a package of Ozone worth $5.00, and we will send a Test Package without charge. You must raise and sell enough Ozone to pay your expenses in the business, and if you sell enough to pay the expenses of your Test Package, we will send you the OZONE, worth at least $5.00, for nothing more. The man who sells 10 packages will have a fortune.

THE JOB ROOMS.

The job rooms of THE LANCASTER EXAMINER are filled with the latest styles of press, material, etc., and we are prepared to do all kinds of work and furnish business in its healthiest form, and we pay the best rates at all times. We will also make your job to order, and we will have a complete line of the latest and best forms at all times.

SUE BILLS A SPECIALTY.

With a full assortment of money that we have not purchased, we are prepared to print the finest and most attractive work in the line.

JOHN A. HIESTAND, Proprietor.

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MARTIN & SON, No. 12 Centre Square, Lancaster, Dealers in Boots, Shoes and Rubbers. Repairing and using. Next attendance.

M. LEVY, No. 9 East King Street. For the best Dollar Shoes in Lancaster go to M. Levy, No. 9 East King Street.

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FURNITURE.

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CHINA AND GLASSWARE.

HIGH & MARTIN, No. 15 East King Street, dealers in Glass, Glass and Porcelain Wares, Fancy Goods, Lamps, Lamps, Lamps, etc.

CLOTHING.

MYERS & BATHSON, Center Hall, No. 12 East King Street, Largest Cut Goods House in Pennsylvania outside of Philadelphia.

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FARMING FOR PROFIT.

It is conceded that this large and comprehensive book, invented in another column by J. C. McCurdy & Co., of Philadelphia, the well-known publishers of Standard works in not only the best and healthiest, but also the best work of the kind which has ever been published. Thoroughly treating the great subjects of general Agriculture, Live-Stock, Fruit-Growing, Business Principles, and Home Life; telling just what the farmer and the farmer's boys want to know, combining Science and Practice, stimulating thought, awakening inquiry, and-interesting every member of the family, this book must exert a mighty influence for good. It is highly recommended by the best agricultural writers and the leading papers, and is destined to have an extensive sale. Agents are wanted everywhere. Jan-11

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Wine Presses!

Fruit Presses. Apple Slicers.

Fodder and Ensilage Cutters.

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Grain and Fertilizer Drills.

Broadcast Seed Sowers.

Corn Shellers, Corn Mills.

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1848 The Oldest of All 1881

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All the Estimable Styles of CLOTHS, CASIMIRAS, WORKSHIES, COATINGS, CUTTINGS and VESTINGS

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All Wool Suits from $20 to $300.

All Wool Frock from $100 to $200.

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A full supply of Wringers and Smarter Goods just opened and on hand.

Thankful to give an open public-for past patronage they hope to merit its continued recognition to their "near departure."

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1848

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[February 13, 1882.]

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THE LANCASTER FARMER,

A MONTHLY JOURNAL,

Devoted to Agriculture, Horticulture, Domestic Economy, and Miscellaneous.

EDITORED BY DR. S. S. RATHVON.

TERMS OF SUBSCRIPTION:

ONE DOLLAR PER ANNUM,

POSTAGE PAID BY THE PROTEMPOR.

All subscriptions will commence with the January number, unless otherwise ordered.

Dr. S. S. Rathvon, who has so ably managed the editorial department in the past, will continue in the position of editor. His contributions on subjects connected with the science of farming, and particularly that specialty of which he is so thoroughly a master—botanical science--such knowledge of which has become a necessity to the successful farmer, are alone worth more than the price of this publication. He is determined to make "The Farmer" a necessity to all households.

A copy that has so wide a reputation as Lancaster county for its agricultural products should certainly be able to support an agricultural paper of its own, for the excellence of the opinions of farmers interested in this matter. We ask the co-operation of all farmers interested in this matter. Work among your friends. The "Farmer" is only one dollar per year. Send them your copy. Try and influence them to subscribe. It is not much for each subscriber to do but it will greatly assist us.

All communications in regard to the editorial management, that should be addressed to Dr. S. S. Rathvon, Lancaster, Pa., and all notices are in regard to subscriptions and advertising should be addressed to the publisher. Rates of advertising can be had on application at the office.

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From all leading varieties of pure bred Poultry.

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Bulbs and Plants. All descriptions of plants are accompanied by full descriptive
matter and full directions for planting and care. The following prices are made in
 Favor of friends and friends of friends. All for sale at any time at the rate of $1.00 per
 catalogue. We guarantee whole lots of Bulbs to arrive in perfect condition.

Jan. 33

WE WANT OLD BOOKS.
We Want German Books.
We Want All Kinds of Old Books.

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On Concord Grapes, Transplanted Evergreens, Tulip, Poplar, Linden, Maple, etc. Trees, Seedlings and Trees for timber plantations by the 1000.

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For SOLDIERS, Widows, Fathers, Mothers or children. Thousands yet entitled.
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Pensions are granted for every degree of disability, from a little way limp to a
mutilation from head to foot.

PENSIONS
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In every Township in the State.

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LAW SOCIETY.
Incorporated by Act of Legislature, June 4, 1834.

WANTED—6 ANVILS for the LANCASTER WEEKLY EXAMINER.

Jan 3

W. F. RABSON, Supt. T Buell.
LANCASTER, PA.

WANT A FARM?—Write the LANCASTER EXAMINER.

Jan 3

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Outstanding guarantees the best of all augers. The Auger is cheap and best in the
world. A well auger can beat our SAVING MACHINE. It saves oil, a 50c auger in 2 minutes.

Futurial tools work. W. GILLES, Chicago, Ill.

Jan 30
II. THE LANCASTER FARMER.

Pennsylvania Railroad Schedule. Trains leave the Depot in this city, as follows:

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WAREROOMS: 102 East King St., Cor. of Duke St., LANCASTER, PA.
The Lancastor Farmer.

Lancaster, Pa., March 1882.

Vol. XIV, No. 3.

Editorial.

Our Aprology.

An apology is due our patrons for the late appearance of The Farmer, due to the death of February, and also the present number, and we can't tell how long this state of things may continue, but we can assure our readers that it is only temporary, and is not without a mitigating cause. Since the destruction of the Inquirer building by fire, a large portion of the printing executed by that establishment devolves upon our office; and, as the arrangement is only a temporary one, we can only make a temporary provision for it. When our patrons become aware of this fact we feel assured that they will sympathize with us in our efforts to accommodate those who in a fall whipped by the devouring flames have been deprived of the mechanical means to execute their business engagements. These contingencies cannot be foreseen, but when they do occur, charity dictates that we should help to bear each other's burdens.

Our Winged Friends.

We publish in this issue of The Farmer the very interesting paper on insectivorous birds, read by S. P. Bly, Esq., of Lancaster, Pa., before the State Horticultural Society, at its annual meeting, held at Harrisburg in January last; and we regret that we were not able to publish it sooner, for such papers are worthy of a permanent record, and especially when they come within the category of one of the leading specialties of this journal; from its very origin, namely, to make it a record of the sayings and doings of the people of Lancaster county in relation to agriculture and its allies. The essay needs no commendation of ours, for, having it before them, our readers will be able to judge for themselves, and we can assure them that they will be both interested and instructed.

Kitchen Garden for March.

In the Middle States spring has arrived according to the calendar, but the experienced gardener is not caught by arbitrary terms; and though March and the almanac may indicate spring, frost and storm and biting winds caution him to care and patience. He will wait the progress of the month and bide his time.

Artichokes dress; plant, Asparagus sow; plant the rose-root rooted. Peas—Extra Early, Philadelphia Turnip, and Early Blood Turnip sow. Cabbage sow in a sheltered place, if not already in a hot-bed. Turn Landreth's new varieties of Welshcel, Early Market, and Nursery Kale. Cauliflower, Horn, sow; Cabbage—attends to those under glass. Celery sows, Cress sow; Compass pinwheels, Spring favorite for the horse; asparagus, horse-rash. Hot-beds make; also force. Lettuce sows; trick out. Mushroom beds attend to; Mustard sows. Onions put out in sets—these known as Philadelphia Buttons much the best. Parsnips sow—the Sugar is the best. Peas—Landreth's Ex-
and not mere theories. It is true that an educated man by fallacious arguments may be more successful in impressing false views than an uneducated man is in advancing true ones, but time and experience will eventually demonstrate who is right and who is wrong. As to the matter of other reptiles and, in particular, the degree of it in order to be able to tell the truth when we know the truth.

In conclusion, lunar influence upon the earth's surface involves questions that are in an unsettled condition among men—even among those who are educated—but there are plenty of other subjects of a more practical character, which are worth the pen of the experienced farmer—subjects more tangible and nearer to his daily life, and should become the objects of his occasional illustration.

THE BANE AND ANTIDOTE.

The two paragraphs added below illustrate a state of things in India that perhaps never enters the mind of the average individual who concerns himself but little as to how other people live and die in this world; and, even those who may feel an interest in their fellow-men, and contribute to their alleviation, may be astonished at the aggregate of human exposure to the fatalities of animal ferocity. Venomous reptiles and carnivorous mammals seem to be the bane of India, however en- dowed she may be with other resources; and, although we may suppose that she also, to some extent, possesses the antidote, yet it can not be sufficiently strong to overcome the preponderating one. India possesses many snake destroying birds, notably the Secretary, the Cassowary and the Vulture, besides many others. If, therefore, with all these checks to the increase of venomous snakes, together with the hundreds of thousands destroyed annually, under the auspices of government, there is still such a fearful mortality from snake bites, what might it be if none of these counter-operations existed. The question invol- ved may perhaps be best illustrated before us on a large scale the relations that one class of animals bears to another, in maintaining the equilibrium of nature, in which it is plainly evident that if the one did not at all exist, even though its presence might be re- garded by some people as an unmitigated nuisance—what a fearful redundancy, there might be of the other more objectionable class. This rule may also be applied on a smaller scale to the noxious animals and their natural antidotes in our own country. We don't know what the mortality from snake bites is in the United States, but from all the facts into the public we may infer that it is very trifling when compared with India. We have, however, a tolerable idea of the injuries sustained by agriculture from noxious insects; but we cannot even guess what it might be if none of the natural antidotes existed; and yet because these often operate against the interests of certain individuals, they would have them all destroyed. Birds in our own country, as well as in India, are the natural enemies of insects, and to a greater extent, too, we may be aware of; and yet many people are restive and impatient under the presence of birds, because they also appropriate a little fruit, or other substance of human production.

Death from Wild Animals in India.

The total number of persons killed by snakes and wild beasts in the several Provinces of the United India, has increased from 19,273 in 1877 to 21,960 in 1880. The largest number of deaths occurred in Bengal and the North-western Provinces and Oudh, in the latter of which the year aggregated 11,359 and 5,284, respectively. In Bengal 10,064 deaths were caused by snake bites, 339 persons were killed by tigers, while in the North-western Provinces and Oudh, 4,725 persons died from snakebites and 325 were killed by wolves. The total number of persons killed by wild beasts and venomous snakes during the years 1877-80, inclusive, was about 1,200 in the number of cattle killed. The total number of wild animals destroyed has fallen yearly by year from 23,489 in 1876 to 14,578 in 1879. This decrease com- pared with the previous year the falling off was common to all Provinces, except British Burmah. The number of cattle killed increased from 5,430 in 1876 to 5,914 in 1878, and 6,526 in 1879, exclusive of the figures for Mysore, where the deaths in the previous year amounted to 5,899. The increase compared with 1870 is common to all Provinces except the North-western Provinces and Oudh, the Punjab, and Ajmere-Merwara. In the North-western Provinces and Oudh the totals for the two years are nearly the same, and in the Punjab the decrease was about 1,126—results obtained by the regular registration of warrants and disfranchise which would have supposed that the sharp fangs or broken bones projecting through the mangled skin in its passage down must sometimes produce the same results, and thus provide a means of inoculation, even if the aggressor did not get bitten in the combat. Neither accident, however, has been observed to occur by those who have carefully watched the operations. Pigs are tremendous fellows on snakes, too. They, as well as peacocks, have done good service in ridding entire islands of these dangerous pests; and it is said that Marius was cleared of poisonous reptiles by the wild hogs which he imported there in the first instance, and have spread over the island,—All the Year Round.

REVISED FRUIT LIST.

We insert the following from the German- town Telegraph, not because we feel confident that it will accord with the preferences of all horticulturists—even in the same latitude—but because it has been compiled, and at various periods revised, by a veteran experienced farmer of the highest standing and editorial lore; and, also, because it may be more general in its practical application than catalogues embracing the fruit stock of the entire Union, it not the entire world. Of course individual fruit growers will also have their preferences based upon their own experiences. Moreover, it has not only been demonstrated that one particular farm is better adapted to the thrift of some particular fruits than another one near it, but that even on the same farm, to a great extent, these diversities of adaptation exist. If a man posses- ses only a small farm, or desires to restrict his cultivation to only a few varieties, other things being equal, it would perhaps be judicious in him to make his selections in the numerical order that they appear on the list, unless he is positive a variation from this would be better for him individually. Under any circumstances, that should be selected which is best adapted to the special locality. Every fruit season we still see a great quantity of "trash" in the way of fruit and vegetables exposed to sale in our markets, and we have often wondered whether people will ever discover that the best is the most profitable and finds a more ready sale, and can also be cultivated more easily and cheaply than the ordinary vari- eties; and even if it cannot, it is quite certain that the gathering and bringing to market is the same, but when there the compensation is always favorable to the superior kinds. It would not do to say that farmers keep the best of their produce for their own use, and only sell the worst to others; for, nine times in ten, the converse is the case. Doubtless it is altogether owing to indifference to the subject of fruit culture, or devotion to some other more absorbing interest or prejudice against "Book-farming." But it is never too late to
learn, nor is there any rational source from which we cannot learn something, and those who think this, we feel confident, may glean that "something" from the following list:

Since the last publication of our fruit list, we have given our attention to reviewing Rogers' No. 22, the opinions with respect to a few of the fruits which it contained. But in regard to the list as a whole we can see no just grounds for dissatisfaction. We are opposed to any such list being improved for this section of the country, or as a general list for all the Middle States. Some of the early sorts selected may not be obtainable, and others may not be needed, and yet they need admiringly on another. Each grower must find out for himself the particular apples, pears, and, especially adapted to his soil and location, the earliest and best varieties of those who are successful fruit-growers, whose soil is somewhat similar to their own.


For those who may desire a smaller number we shall select: 1. Gillard; 2. Early Catharine; 3. Kirtland; 4. Bartlett; 5. Belle Lucrative; 6. Seckel; 7. Lawrence; 8. Reading; 9. Kieffer. They ripen in about the order they are arranged, except as to the third, which will ripen a little later, or can be made to ripen, early in November, will keep until March, which being the only part of our stock still in our fruit vault.

In the above list, from No. 1 to 8, are summer varieties; from No. 9 to 16 autumn early and late; from No. 17 to 19 winter. We think it affords a sufficient number for each of the periods of the best known sorts for this region.


We have substituted in the peach list Troth's Early for York Early, and Admira ble, which is accounted a failure to wind up our list seems to have seen its best days, and the latter is too shy a bearer for profit.


We have added to the list Rogers' No. 32, which, should it maintain its present character, will doubtless be cultivated. It is a beautiful pink, or rather maroon colored grape, and at times is transparent. It bears regular crops yearly with us. Occasionally a single bunch may be obtained and is probably the best for that purpose. We add the Brighton, a maroon color, as promising well. It, however, a small berry and of slight size, and is not so highly cultivated as the varieties above mentioned. It is perhaps the best for that purpose.

We add the Black, a maroon color, and probably the best for that purpose.

The Brighton, a maroon color, as promising well. It, however, a small berry and of slight size, and is not so highly cultivated as the varieties above mentioned. It is perhaps the best for that purpose.

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Our readers will easily gather from the above tabulated statement the number of years to be expected to live on the law of averages, may reasonably be expected to extend.—Harper’s Bazaar.

Inasmuch as the above claims to be based upon which the London insurance companies operate, it may be regarded as good as reliable as the subject could well be presented, as every householder who pays premiums, and when they eat, is less essential than how they eat. The appropriation of nutrition, or eating, is the greatest moving force of the animal universe—and proximately also of the vegetable—and unless that all pervading want is supplied, everything animate would hopelessly perish; but the rationale of eating depends upon assimilation, in order to produce the most favorable result. Hunger is a great leveller, and has no respect to any condition in life. The rich and the poor, the intelligent and the ignorant, the high and the low, are all amenable to the law of natural demand. Perhaps the greatest mistakes, blunders, and willful perversions in eating, occur among the human family. All in the animal world, below the genus Homo, “eat to live,” whilst it is very evident that many people “live to eat.” Seeing that physical life is based upon this primary condition, too little regard is paid to rational eating, and also to healthful culinary preparation, to say nothing about social condition. The first thing that every living mortal craves—after fresh air—that comes into the world, is eating and sleeping; and if the first is not supplied, the second will not follow, and the subject is liable to perish. It cannot and will not sleep if hungry, whether man or beast.

How Long Are We to Live?

It is not every one who asks himself this question, because, strangely enough, it is the belief of many persons that their lives will be exceptionally lengthy. However, life assurance companies are aware of the credulous weaknesses of these whose lives they assure, and have therefore compiled numerous tables of mortality, in order to have some idea as to what the laws of chance are, as they are, as they do at various ages. In the first column we have the present ages of persons of average health, and in the second column we are enabled to pick out how long the same persons would live, according to the laws of chance, and gather from their table the number of years they will give us to live. This table has been the result of careful calculation, the use of the sciences of actuarial law, course, sudden and premature deaths, as well as lives unusually extended, occasionally cut off, but this is a table of average expectancy of life of an ordinary man or woman.

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The German Heusler has suggested on the same point that the ancients did not divide as we do. Previous to the age of Abraham the great patriarch lived one hundred years, after only three months, or a season; so that they had a year of spring, one of summer, one of fall, and one of winter. The year was extended, as when Abraham and of twelve months after Joseph.

Voltaire rejected the longevity assigned to the patriarchs, and had not anyone the question the stories of the great ages attained by some men in India, where, he says, "it is not rare to see old men of one hundred, two hundred, and sometimes two hundred and fifty years. But, according to this author the moment of a complete development may be recognized by the fact of the junction of the bones with their apomyses. But, according to this author the moment of a complete development may be recognized by the fact of the junction of the bones with their apomyses. It is also known that human life may be essentially prolonged under certain conditions of comfort, sobriety, freedom from care, and observance of the rules of hygiene.

Weak Lungs.

Every one knows that physical exercise invigorates the muscular system; that the constant action, within limits, of any muscle enforces and strengthens that muscle. The same is the working of the same law that gives fullness and vigor to the blacksmith’s arm. This law is physiologically universal, and therefore applies to the lungs.

The one work of the lungs is to inhale and exhale air: and this depends on the alternate expansion and contraction of the chest. Now, most physicians believe that the greatest number of persons have weak lungs. The lungs of these persons are generally weak, and easily become diseased, because seldom brought into full, vigorous action.

The weak lungs of other people—students, tailors, seamstresses, shoemakers, etc.—are such as do not call out the full actions of the lungs; but are simply what are known as weak lungs.

If such persons are troubled with general weaknesses, have difficulty of breathing after exercise, and dull pains in the sides, the physician orders exercise; although there may still be no organic disease. What is needed is to strengthen them—not by medicine—but by their own proper action. The Medical and Surgical Reporter gives an account of a young student whose pulmonary symptoms of weakness were wholly overcome. It was done by him simply breathing through a small tube, the size of a small, a dozen times every three or four hours each day. Every third respiration he withdrew the tube, when the lungs were thoroughly filled, and held his breath as long as he could. Keeping this up during his student-life, he acquired the ability to exhale his chest five inches by an inspiration, and to hold his breath powder long by an expiration.

It is our belief that the same thing may be accomplished by breathing as above through a small nostril, closing the other with the fingers; and also by a more gentle and quiet respiration.

We have thus far considered the lungs, and find that your own personal experience, the above extract contains sound doctrine. When we were first bound an apprentice to the tailoring business (1827) we were jocosely admonished that we would not live to serve out our term of five years, and we confess we sometimes felt some boyish anxiety about it; for our mother had died of consumption when we were just twelve years old, and since then our elder sister, our two brothers and one of our sister’s daugh-
ters have died, and three of them unmistakably of the same fell disease, and at about the same age as our mother; moreover, quite a number of our mother’s relations have died of the same disease. One day a physician well advanced in years, coming into the shop in which we were employed, and noticing our peculiar attitude on the “board,” advised us to sit straight, expand our chest as much as possible, and to cultivate a habit of breathing through the nostrils. And furthermore to take some active outdoor exercise, as we could possibly find opportunity to do, and when we sat at rest, to throw our arms backward over the back of the chair, or bench, if it had such a support. We followed this advice and with good results.

Notwithstanding, about forty-five years ago we were troubled with a pressure of the lungs and difficulty of breathing—perhaps a collapse of the cells of the lungs—induced by a too incessant confinement to the shopboard. One day an agent for the sale of Dr. Fitch’s “Inhaling Tube” called on us, and explained the nature and use of the instrument. We bought one at a cost of $1.75. This instrument is hammer-shaped, and consists of a cylinder three-quarters of an inch long, and three-eighths of an inch in diameter; one end is closed and the other contains a small ball-valve. This valve is attached in the middle, a shaft or stem about four inches long and three-sixteenths of an inch in diameter. This tube is taken in the mouth and a deep inspiration is taken, thoroughly filling the lungs. After a moment, or as long after as the breath can be conveniently held, when expiration commences, the ball-valve will be partially closed, and the breath will not escape as easily as it was inhaled. If the nostrils are then held shut, the effort to force the breath through the diminished aperture, will also force it into the collapsed cells of the lungs, and gradually open and expand them, and this effects their cure.

This practice we continued, at intervals, until 1848, when we abanoned the shopboard for more active employment, and the cause being removed, there was no necessity of continuing the remedy. The good effects do not follow immediately, but by continuing the process the respiration becomes gradually free and strong. We have on many occasions been able to take a full inspiration and hold our breath long enough to read a paragraph equivalent to forty or fifty lines in the columns of the Lancaster Farmer. We by no means pretend to say that lungs in an absolute state of decay could be cured by the aid of this instrument—indeed, we have loaned it to persons so affected, and they have declared that they could not use it, or a continued use of it would kill them—but where there is only a weakness, or a compression of the cells of the lungs, it, or any substitute of it, cannot fail to be beneficial if judiciously and perseveringly used. About twenty-five years ago, through an inadvertent exposure, we contracted a stubborn and protracted congh, which, according to the opinion of our medical adviser, terminated in rupture of the lungs. It is only necessary to say that in this case our instrument was altogether useless, as we needed a different treatment; and we were finally relieved—we may say totally cured—by the use of medicated inhalations, these were progressively modified to the pending condition of the lungs.

The predisposition to pulmonary affections is said to be greater than is generally supposed by the thoughtless and unobservant; and, that the disease is not merely more frequently and fatally developed, may be owing more to favorable contingencies than to remedial agencies. Mental or emotional condition may also be a potent factor in the development of pulmonary diseases. It has been alleged that every violent paroxysm of anger, hate, envy, jealousy, fretfulness, anxiety, sorrow, chagrin, obstinacy or grief, adds so many nails to the coffin of the consumptive; and doubtless this may also be said of violent physical exposures, dissipations, debaucheries, or any irritating draft made upon the passions or the material energies. Inhaled lungs, no more than an inhaled cuticle, cannot heal as long as they are in a state of violent friction. We have now attained our “three-score and ten” and if we can do no special merit for such a fortuitous contingency, yet it is none the less a commentary upon the judgment of those who predicted our demise before we completed our apprenticeship, more than half a century ago.

THE WILL AND THE DEED.

There are circumstances under which charity compels us to regard the will as equivalent to the deed—in a moral sense at least. It is very true, that the will, or the wish, unaccompanied by the necessary food, would never save a needy man from starving; but in a moral sense, it might excalate a destitute person who had been supported for help; and in the same sense, it might even go farther than the real material gift of another. All would depend upon the motive which instigated the deed. ‘“There, take it, and may it choke you,” uttered in a snappish vein, when imparted for part of the loaf you are eating, would be a deed far inferior to a generous wish or will, in a moral sense, although the latter might not be so effectual in alleviating one suffering from hunger. We are led to these reflections in considering the responses to our solicitations to ‘write for the Farmer.’ For instance, Leoline writes: ‘I am a friend, I will not induce you to write you a few lines. As my husband told you, I have my hands full just now. But, if I could have the opportunity to write as often as I wish, you would get a goodly number of contributions from this quarter.’ Now, we happen to know that Leoline is a self-educated farmer’s wife, in medium circumstances, and has a large family of children, just at that age when they most need a mother’s care, and that the general labors of the household devolve upon her. Under such circumstances the wish, or will, becomes equivalent to the deed, and yet from time to time she has contrived to do more than meet the conflict in unsatistabul wishes; and we feel confident that she, nor any one in like circumstances, will sustain any moral injury in ulti-mating their wishes in corresponding actions.

The most effective way to educate the ‘million’ is for the million to write for and become the instructors of the million. Domestic hints and recipes emanating from the “upper ten,” are often inaccessible and impracticable to the millions. They occupy a plane beyond the reach of the million. Culinary preparations that cost a dollar are of no practical use to the person that can’t afford more than ten cents for the same. But the million is characteristically timid and diffident, and hence practical knowledge is often overthrown by theoretical assurances; and because the million can’t or won’t write with the fluency of the upper ten it prefers to abandon the field and continue a ‘heuer of wood and a carrier of water.’ All, within their spheres are useful, no doubt, but the common people need the experiences of common people; instead of being spoken at they need to be spoken to.

By the common people, we by no means have reference to the ‘tramps,’ ‘sanecelebates,’ the ‘Greasers,’ and the ‘Leerand’ of the human family, but to those who willfully labor for the benefit of mankind, whether from necessity, from love, or for its own sake. What superfluous or domestic antagonism necessarily exist between the common people and the upper ten, for it must needs be that a diversity of classes will exist in the present constitution of society; but we should ever remember the ‘pots of earth and the pots of brass,’ as we float down the stream of time. If the lion were finshing with hunger, and the bull were to bring him a bundle of hay, the pig an ear of corn, the parrot a bunch of fruit, and the partridge a pint of seeds, it might be all very kind in them, but it would not meet the wants of the lion. His needs, under such circumstances, could best be supplied by an animal that had a clearer appreciation of those needs. Many books have been written on Domestic Economy by those who were characteristically neither domestic nor economical, and hence, so far as they concerned the common people, they were a dead letter. But if the common people will not place the results of their life experiences on record, the society will have to appropriate such domestic literature as it can find, whether adapted to its wants or otherwise.

EXCERPTS.

Chester white pigs have increased in price in the past two years.

Like the blackberry, the raspberry bears the fruit upon the cane of the previous year’s growth, which, after fruitage, dies, the new cane coming forward for the next year’s crop.

Nearly, all kinds of fruits do well on a mixture of superfosphate and wood ashes. Lime is not suitable for strawberries, but excellent around apple, peach and pear trees.

Grapevines should be pruned as early as the season will permit. If deferred too late they will allow an escape of sap (bicide), even if trimmed a little while before it begins to ascend.

Fine flowers require thoroughly rotted manure and wood mould mixed, and tomato or other early plants can be grown in boxes, and afterward transplanted with better results with such a mixture.

In cold weather, eggs for hatching should be collected daily. They freeze easily when exposed, but will retain vitality for several
THE LANCASTER FARMER.

THE 41,000,000 - 540,977,000 of the Americans, more than 20,977,500 people. When it comes to the question of timber, the number is likely to be perpetual.

Therefore, its reproduction must necessarily continue. We live in an age of absolute necessity, and also in an age of great indifference and negligence, in regard to the preservation of our forest growth. The American and the European, the Greek and the German, the Protestant and the Catholic, were more careful, more diligent, and valued the forest resources more than we do at the present day. The Orientals were like us Americans, they made no provisions for the replenishment of their exhausted forests. They became so impoverished in timber that they were compelled to abandon their country for the want of it, and migrate to Europe, where they learned to appreciate its value. Timber was held in classic veneration in Greece. The students of Athens habitually assembled under stately poplar trees to take the air and to acquire the knowledge of their fellow men. Political gatherings, would assemble in timber groves, reserved for that purpose.

The ancient Druids recommended, and even enacted laws requiring states to make large reservations for all time to come, in order to supply the people with timber, and to avert the timber famine of Asia. They especially proscribed great veneration for the oaks, under the wide expanding branches of which, they delivered their lectures, worshipped their Deity, and performed their mystic rites; believing that majestic tree of the forest to be the emblem of the omnipotence of the Almighty. They would leave it unmitigated in some places in order to note its age, which has been known to exceed three or four hundred years.

It was through the example of the early settlers in Europe that these large forests were reserved, and have been preserved to the present day, and will continue to be kept up, for all time to come. These forests are generally owned by the different governments—whether large or small—who appoint officers, exercising a supervisory control over them. The "Wald-Herr," or "Forester" is quite an important personage, and exercises an indispensable authority within his domain. The matter of properly keeping a systematic forest is not a merely haphazard affair, and does not require all the trees to be left perpetually standing. When the cutting is finished at one end, then the other end is in a fit condition to begin afresh, and in this way they always have flourishing forests, and also always have timber. A judicious manipulation of a forest requires some science, more observation, and a great deal of experience, acquired through the exercise of common sense.

Standing pine. Cut census of 70.

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<th>State</th>
<th>Acres</th>
<th>Cents</th>
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<tr>
<td>Minnesota</td>
<td>5,109,000</td>
<td>549,277,000</td>
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</table>

This does not include some of the most important timber regions—Oregon and Washington Territory, which will be given hereafter by the Census Bureau.
acres of the farm is preserved; or a favorite oak, walnut, or chestnut is left standing—so many monuments to the memory of a grand old forest that has passed away; and perchance if these farms pass into other hands under morbid ideas of improvement, the first thing done is to fell those venerable relics to the ground and utilize them, according to modern principles of economy. Under such circumstances we sensibly recall the sentiments of Morris' immortal lines—

"Woodman spare that tree,
Tench not a single bough,
In youth it sheltered me
And I'll protect it now."—L. B. R., Oregon, 1882.

There seems to be but one way to induce our people to commence the planting of forest trees, and that is for the Governments of the States and the nation to offer premiums to those who plant a given number of trees, and assess an additional tax on those who refuse or neglect to perform that duty.

True, this might be construed into both a bribe and a threat, but it would not be the first instance in the world's history, where people have been bribed, or threatened, to do that which was their plain duty to do. Economically, as well as morally, men should do their duty as they understand it, or as it is made manifest to them in the present; and not be unnecessarily anxious about the future; but, it does not require an extraordinary amount of intelligent men to induce the present may be so improved as to make it a pleasant and noble post, and at the same time amply provide for the future. Had our forefathers adhered to a similar rule in regard to our primitive forests there would be no necessity for their posterity to indulge in anxious discussions on the subject. But all that is now past; they needed cleared land; the forests were their bane and cutting down the trees the antidote. Things now are becoming reversed. Treadless, arid and sun-baked hills and valleys in time will be the base, and tree replenishment the antidote. To those who are now conscious of life, it may make little difference what is done in this respect, but then we should never forget that the earth is "God's footstool."—L. B. R., Oregon, 1882.

The Lancaster Farmer.

STRAWBERRIES.

Among all the circle of fruits there is none that is so easily raised, or gives so much satisfaction to the amateur, as the strawberry. No other fruit gives greater pleasure as it does. A bed planted in July or August, will, if well taken care of, make a full yield in less than a year. Sometimes, on account of drought, it is difficult to establish a good bed at that season, so upon the whole it is safer to plant in the spring as soon as the ground gets in good working order. The yield in good soil and proper conditions is simply enormous. Last year on a plot 7 by 10 yards, there were raised over 100 quarts of the Sharpless variety, equal to 7,000 quarts to the acre. There are reports, apparently well authenticated, of twice that amount of berries to the acre. It can be seen from this that there should not be any difficulty in finding a plot of ground on almost every home in the land, large enough to raise a supply of this delicious fruit for family use. Two or three rods will be sufficient. Any soil that is rich enough to produce rhubarb or corn will do for strawberries. It will thrive both in the soil, or ground filled with a large amount of vegetable refuse, in the white grub is to be found, and where it is plentiful you may come to grief, as it the grub) is a great eater, and will soon ruin a bed.

Dig deep, as you will thereby prevent the ground from drying out as soon as it will shallow. The drought, by the by, is the greatest hindrance that the strawberry grower has to contend with. For some years past strawberry growers on a large scale have been quite unsuccessful on that account. But the small ones, from one or three rows, need not suffer. Deep cultivation and careful hoeing will, in a great measure, counteract drought. These small beds are easily irrigated. The soapsuds from the weekly wash will be excellent. These small beds will need no alley ways through them, for the work here can be done to the best advantage with the hoe.

Set the plants eighteen inches apart every way. After the bed is planted give it a good raking once a week with a steel rake. Let no weed or runner grow. If any plants are missing train a runner in its place, and when well rooted, cut loose from its parent. Fifteen or twenty weeks' work every week will do all this.

In the fall, when the ground is frozen, cover with two or three inches of coarse manure, and then your work is done for the season. In the spring, when growing weather comes, rake off the coarse rubbish, but leave the fine stuff on for a mulch, and if you can add as much more as will keep the weeds from growing it will be all the better. Care must, however, be taken in putting on this mulch, that the crown of the plant is not covered. If mulching is scarce and your bed is inclined to be weedy, two weeds near the plant must be pulled by hand, as the strawberry roots are near the surface and are easily injured by the hoe. After the fruit is formed a little tannack, leaves or chaff should be laid under it to keep the dirt off. If from a severe rain, however, the berries become dirty wash them.

Some one has said you might as well try to wash sugar as strawberries, but that is all nonsense. Place a colander, or better, a square box with wire netting nailed on the bottom, in a tub, and pour water in until nearly even with the top of the box, then pour your berries in a corner of it at a time, raise up your box two or three times, and then place them in a shady place to dry. Persons not seeing you do this will never know that the fruit was washed.

After the fruiting season is over go over your beds the same as you did the first season. Beds thus treated may be kept productive for three or four years, after which it would be better to start a new bed. Now about varieties: Buist’s Prize, Crimson Cones, Howey, Longworth’s Proline, and hosts of others that were popular twenty years ago, are all superseded by others; and even the Wilson, that so long reigned supreme, is being pushed to a back seat. Now we have Charles Downing, Cumberland, and Brolio Sharpless, &c. These combine quality and productiveness in a greater degree than the older varieties. These, a year or two ago, were sold at $2.00 and upwards a dozen; now they can be bought for a dollar or less per hundred.—Casper Hiller.

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PRACTICAL POULTRY NOTES.

As the time will soon be here, when good Farmers’ wives will be sitting hens for early chicks, I will tell them how I do, though others may do better. I never give a hen more than eleven eggs if the weather is very cold, and 13 if the weather is warm.

Last spring I had a flock of 22 Leghorns. As soon as I caught them, I guessed the old hen under the wings, at the legs and breast, and every chick about the head; then I put them in the coop, to the old hen; and this I did every year about the last two weeks on state law, dry chicken and onions chopped in the cheese once a week; after that, I feed cracked corn, wheat, rye, thick milk, pure water to drink, till they are fit to eat or take to market, and only one died with the pipp out of the whole flock. I keep the mother pen’d up, but let the chicks run at large, after they are 4 or 5 days old.

Out of another flock of 32 Cochins, treated the same way, I raised 30, but do not like them so well, they lay too little. We have plenty of eggs when we keep the Leghorns, and much better water; never keep old ones over two years, and never keep over 30 through the winter; it does not pay to keep too many. A few well fed pay better than many ill fed.

Lodice.

FOR THE LANCASTER FARMER.

DOMESTIC HINTS.

To prevent small-pox pitting the face, keep a damp cloth on the face, with holes cut for the eyes, nose and mouth. This has been tried, and can be relied on; no one likes to have such marks on the face.

To prevent sore eyes, wash in warm water, never cold, as the cold water will inflame weak eyes.

To increase the cream on milk, strain your milk in hot crocks and set in a cool room. The butter will come sooner, too, if milk is treated this way.—Lodice.

For the Lancaster Farmer.

PRACTICAL RECIPES.

Fasteacht Cakes.—Set a sponge, as for bread, with 1½ quarts of good yeast. When it is raised, add 3 eggs, beaten, 1½ pounds of sugar, ½ pound of butter and egg, mixed; knead it well for about twenty minutes; let it raise again, then roll on a board, and cut in cakes with a penny roller, with notches in; also cut through the cake three or four times, and bake in hot lard, having the pan about half full. Begin taking when you have about the half rolled.

Swiss Cake.—Make a batter as you would for flamed cake, only so thick that it does not run; it should be pretty stiff, but not too stiff. Take 3 quarts of flour, 5 eggs, 2 teaspoonsful of saleratus, a large tablespoonful of salt; fry in hot lard, same as the others. By leaving out the salt; and adding a small teaspoon of sugar, you can have them sweet. They should be very light when done, and should be draped in the lazy in small spoonsful.
The Lancaster Farmer.

otherwise the outside will burn before the inside is done.

To Purify Dripping.—Make it hot in a pan, and then pour it in clear water, when it is cold gather it and try out the water, and it will not taste much any more like dripping.

People who cannot bite radishes should grate them, and season them as they eat them; they are very nice in that way.—Lebon.

Essays.

The Growth and Consumption of Timber Trees in America.*

When in a state of nature, and before Europeans penetrated far into the interior, this country was in all probability covered by a dense forest, for we find that Wm. Penn held a conference with the Indians under the spreading elm tree at Kensington; and all other information that has been handed down since 1681 confirms this belief. At the time of the settlement, says a distinguished writer, in 1682 the site of Philadelphia was a dense forest, a broad expanse of magnificent and limitless wilderness, almost untroubled by civilized man.

About the year 1720, thirty-eight years afterwards, John Bartram laid out, on the banks of the Schuylkill below Philadelphia, a garden containing a large proportion of the various forest trees of North America. But even so early as the reign of Queen Anne, who occupied the English throne, from 1702 to 1714, an act of parliament was passed “for the protection of forest trees.”

On the English American Colonies, and by an act passed in 1720 prohibited the fellings of white pine trees in the Colonies, unless within private enclosures. About the same time also some of the colonists petitioned the mother country for compulsory legislation regarding the planting of trees by the farmers. Between 1730 and 1750, orchards for the smelting of iron had been erected in Virginia, Maryland, Pennsylvania, New York and New Jersey, and great fears were entertained that the fuel would give out. In later times, and during the early part of the present century, these apprehensions were removed that the charcoals would merely cause a scarcity of fuel, but the forests held out until the introduction of coal into common use dispelled the popular delusion. But in our times, notwithstanding that the domestic consumption of wood for fuel has to a large extent been superseded by coal, other dangers confront us, that the railroads need immense quantities of white oak saplings for ties, and how to meet the demand has vexed some minds greatly. When the necessity arises no doubt a substitute will be found. We well remember similar fears were entertained twenty-five years ago that the locomotives were eating up all the pine wood, but here coal again came to our relief.

Before the discovery of coal mines and inventions of cheap means of working them, wood was the general fuel of the earth, and in many counties where the arts have not much flourished, it is still the chief fuel. In our country as in all other civilized countries the consumption of timber is immense. Its aptitude to be shaped into a thousand various purposes for the comforts, ornaments, and conveniences of society, enhances its value so that we could not well conceive how we could do without it. It appears by a late official report that Minnesota, Mississippi, Alabama, Florida and Texas have an aggregate of 125,000,000,000 feet of standing timber, and that during the year 1880 there was cut nearly 1,500,000,000 feet, showing in these five States an enormous amount of growing timber trees.

In other portions of the States and Territories there is more or less forest, and in some of the Western Territories there is no calculation or numbers big enough to measure the amount of the magnificent trees that span the horizon of Washington, Oregon, Alaska, and Idaho. To the north of the Washington Territory, Governor Newell says there are on the borders of Puget Sound 15,000,000 acres of the finest timber land in the world.

Thousands of trees are upwards of 300 feet in height and 10 feet in diameter at the base. The New Orleans Democrat estimates that Louisiana contains more than 17,000,000 acres of wooded land, and the saw mills have made very little impression upon this vast supply of timber, which comprises a large variety of valuable wood, although by the late census it appears there are 30,000 saw mills in the United States, doing a flourishing business. There is in immense amount of pine forest land in California, in the State of Maine, in Michigan, Pennsylvania, Wisconsin, Virginia, Kentucky and the Carolinas.

There are in this country 700,000 square miles of timber, of which the South owns 400,000, or nearly two-thirds of the most valuable timber; whilst there are States in the American Union that were forestless a quarter of a century ago that are becoming wooded by the planting of trees, Iowa, Kansas, Utah, etc. When the Mormons settled at Salt Lake, in 1847, the country was destitute of trees, except what grew on the Wasatch, excepting the oaks which the pioneers desired for their homes. The Utah valley is highly productive, but few farm houses are found beyond the limits of the towns, which to a distant observer present the appearance of immense orchards, with but here and there a chimney or steeple rising above the trees, indicating the presence of houses. And all this wooded appearance of the towns has been brought about by the policy of tree planting in thirty-three years.

The broad and rich prairies afford advantages to the settlers, which the settlers in the wooded districts cannot compare with. But it seldom happens that any spot of land combines all the gifts of Providence. It is there that we find the richest lands, charged with the elements of agricultural success. There is an absence of trees, which has been considered a serious drawback. Experience, however, has shown the contrary. Those pioneers who weathered the storm and settled the timber lands of Pennsylvania, Ohio and Indiana, can testify to the weary life time of labor required to clear the breadth of a farm fit for cultivation. On the prairie it is entirely different, the farmer can go to work with his ox team and plow down the soil on which the tall grass has been growing uninterruptedly for years.

*Read before the Lancaster County Agricultural and Horticultural Society, by C. L. H uncover.
ent time. Similar were the fears in England, about the same time, that the timber for ship-building would fail, but Sir Robert Seppings contrived the means of substituting straight timber for that of different forms and dimensions, before considered indispensable in ship-building. Although this want of timber for ship-building is not felt in the United States, the business is not flourishing very much. It may be said with truth that the cultivation of forests has been, greatly neglected in most countries, and in many a very sensible want of wood is felt.\(^1\) Trees should be planted around country residences. Houses without being sheltered by trees against the wind and sun have a monotonous and bony appearance.

In regard to the longevity of trees, Linnaeus gives an account of an oak tree 300 years old, but we have traditions of some that have arrived to more than double that age. An English writer makes the Fort-west chestnut 1,100 years old, and the cedars of Lebanon are as old as the Bible. The great tree, Washington Elm, at Cambridge, has a surface of 260,000 square feet. Dr. Trumble, of New York, stated, some years ago, that he once saw a tree in the DISMAL Swamp of Virginia that was 1,100 years old by the annual rings.

It is very difficult and almost impossible to get at the amount of the timber consumed, and the supply of growing timber remaining in so large a country as the United States and Territories. But at any rate it is a favorable sign, that year by year more stone, iron, steel, tin, slate, &c., is used in the construction of dwellings, bridges, ships, mills, and less wood, so that building timber should much enhance in price, more substantial material would be used to construct buildings, and there would be fewer disastrous conflagrations.

Who shall plant trees. In the old world governments are paternal, and can decree and set apart land for the growth and protection of forests. In our country it is entirely different, the government has no such right; the destiny of trees depends upon the will of the citizen.

Mr. Faber, the manufacturer of the red cedar lead pencils, bought a large tract of land and planted it with cedars. In Virginia the Landreths, of Philadelphia, have been planting a large area of its worn out and abandoned fields, with catalpa, allantus, white oak, hackery, tulp, &c. A Scotch Emigration Company has purchased 140,000 acres of land in Barry co., Mo. To these lands the Company propose to draw families and communities of their countrymen. Some have already arrived near Purdy, a station five miles beyond the Wyalusing settlement. These families have in a few months made a great change in the lands about Purdy. They have cleaned out the underbrush, and left standing the larger trees. This clearing off of the underbrush and the leaves annually would materially lessen the risk of forest fires.

The most valuable suggestions that I have met with are those of Mr. Williams, of Monongahela City, Pa., who propes to plant 10,000 walnuts, sow them in rows, after two years' growth thin them out, leaving the thrifty trees; in five years eat or thin them for table legs; in eight years cut again, alternate trees for new posts; in ten years begin to harvest nuts by the thousand bushels. This system of raising a forest is somewhat similar to that practiced in the cultivation of the pine forests in the Hartz Mountains of Germany. There the seed is sown; after growing two years the young shoots are transplanted into portions of the mountains. Five years later they are called a thicket, because the branches are then so closely interlaced that it is difficult to get through them. Ten years later the forester thins them out, leaving the best stems only for future growth. The growth of the tree is slow, the average age of the full-grown tree being 120 years.

**OUR WINGED FRIENDS.**

Since the time when man began to till the soil, he has called around him many assistants to lighten his labors and help him earn the bread he was to "eat in the sweat of his brow."

All our domestic animals have at some time been reclaimed from their wild state by man and trained to a higher condition of intelligence and usefulness.

Of the manner in which this is done we have already made account. We can read in these days there were "mighty hunters," and it is to be presumed that when they hunted and slow, they likewise captured and tamed some of the animals, and that the work of domestication was gradually brought about in that way.

The latest accession to the list, we believe to have been the wild turkey of the American forest. Why the work should have stopped with him, when other birds of equal merit, if not equal weight, are left to roam at large, is a question that remains unanswered.

Besides our domestic group, there is another and more numerous class that, on account of the kind of food on which they live, and their consequent migratory habits, cannot be domesticated, but are in their wild state equally the friends of man, doing him in many ways incalculable benefits, which by a little more protection and encouragement might be greatly increased.

It is in behalf of some of these neglected and oftentimes persecuted friends of the farmer and fruit-grower, that we desire to enlist your kind attention and sympathy for the brief space of time allotted to us.

When our remote ancestors, emerging from barbarism, began to build permanent homes, and settle down from a roving to a more civilized life, they observed that many of the tenants of the primitive forests began to approach their habitation and take part in the protection of the newly-planting fields and orchards, or busied themselves in clearing the surrounding atmosphere.

For instance, one kind of swallow left the hollow forest trees, to build in the newly-erected chimneys. The martin and rock-pewee forsok the savage cliffs, to rear their young under the friendly thatch. Robin and oriole came to assist, where the hand of the husbandman proved unequal to the work of keeping the growing buds and blossoms free from destructive insects.

Likewise came others, to pray upon the weaker ones, or to feed on the fruits of man's labor. These latter had to be driven off, and thus, between the two classes and man there sprang into existence a mutual feeling of friend and foe. He gave protection to the one, and waged war against the other.

The one coming in ethereal shapes with pleasant voices, to assume their labors at the time their services were needed, and again leaving for unknown lands when the season of usefulness was over. The other, issuing from their hiding places, to commit depredations at uncertain and unexpected hours, and again retreating to the depths of the adjacent forest, themselves unseen; they left behind them unmistakable evidence of their work—either friendly or hostile.

We can readily perceive how under such circumstances the untutored but imaginative minds of our remote forefathers, actuated by their love or hatred, invested some of these creatures with shapes and attributes half-human, and in that way peopled the stream and groves with strange beings "visible only by the uncertain gleam of one's knees to be regretted," said a writer, "that the light of modern science has frightened away all our elves and fairies."

This we believe to be a mistake. They are still with us; perhaps less numerous than formerly; but they are still here; as in the "olden time" the whims of the good require to be honored, and the tricks of the bad ones to be guarded against.

In the days of Esopus the beasts were made to speak and the birds to reason. The ancients accepted the fable, and according to the latter any more than we moderns do; but for the lessons they conveyed. Even so with the creatures with which they were brought in contact. They represented the good or evil genius that hannied the ancient streams and groves, or hid within the dim recesses of the German forests.

Clothing them in shapes half human only served to bring them closer to man himself, and intensified the feelings already existing.

The transformation must have contributed to their influence, such as were considered friendly and to the destruction of those looked upon as hostile.

Learning from the ancients let us interest ourselves a little more in the creatures by which we are surrounded. In the birds, for instance—as our good fairies, if we choose, or in the light of modern science. They will stand the test either way. Let us get our children and neighbors interested also. Teach them bird history, teach them to observe their habits, the manner of procuring their food—their enemies—the skill with which they build their nests, the tender affection they show towards their mates, and the untiring industry with which they labor to rear their young. Direct their attention to the fine vocal powers some of them possess and the sweet and varied songs with which they help to swell the grand lyman of Nature.

In short, let us learn that bird life has its labors, duties, difficulties, joys and sorrows, for sympathy, very much like human life; and the chances are we will love and protect our "winged friends" more, and in return reap the benefits of their multiplied labors in orchard and field.

\(^{1}\)An essay read before the Pennsylvania Fruit Growers' Society, at Harrisburg, January 15, 1852, by Silas Eby.
The number of insects a single pair of these birds destroy in a season, if it could be accurately computed, would be astonishing. Some small idea may be formed by watching a nest of the young while the parent birds are feeding them. From our own observation we are satisfied that the visits of a pair of barn swallows at such a time was not less than once in every ten minutes each time, with their bills filled with insects.

Mr. Palmer, of Massachusetts, states that he saw a parent bird visit a young purple martin on a church spire opposite his window five times in as many minutes, each time with an insect.

The barn swallow and purple martin, by no means homely in dress, are sociable in habits, and exceedingly graceful on the wing.

The first insect that is met with, or about the barn, follows the farmer to the field, and keeps him company while at work; skimming around and past him and his team —now close to the ground—now over the loaded hay-wagon—then away into the adjoining field, circling among the grazing cattle—it snaps up such insects as may be put to flight by the workmen or animals.

We remember one occasion seeing a nest of winged ants issuing out of an old fence post. It was not long until a swallow discovered them, and must have communicated the fact to the others; for in a short time quite a flock of swallows and martins were swooping back and forth over the spot, snapping up the insects as fast as they took wing, and few, if any of them, escaped.

The purple martin is equally a favorite. Wherever these birds have once established themselves, which is usually in small colonies, among the habitations of man—they will, if not disturbed, return annually to the same boxes, and become, as it were, a part of the household during their stay. Their coming is anxiously looked for in the spring, their arrival is hailed with delight, and their departure, in the latter part of summer, more or less attended with feelings of sadness, such as we experience in parting with a friend.

The presence of these birds, like the presence of the swallow, is by many persons considered as an assurance of continued prosperity; while their failure to return would be looked upon as an omen of impending misfortune to the house they have deserted.

They are a lively, garrulous and spirited bird. Not gifted with the power of song, they seem to make up for this deficiency by an increased love for gossiping. Their early morning salutations in front of their boxes are, however, very pleasant to listen to.

The male bird makes a model husband. During the time his mate is sitting, he comes quite domestic, and spends part of his time in front of the box dressing and arranging his plumage, occasionally passing to the door of the apartment as if to inquire how she does. His notes, at this time, have assumed a peculiar softness, expressive of much tenderness. And yet he is a courageous bird, and will unhesitatingly attack with great spirit and audacity hawks, crows and other large birds, and even cats, if they show themselves in the vicinity of his home. Thus recalling to mind the classic lines of Bayard Taylor's "Song of the Camp":

"The bravest are the tenderest,
The loving are the darlings.*"

"Conjugal fidelity, even where there is a number together," says Mr. Wilson, "seems to be faithfully preserved by these birds."

The martin feeds upon the larger kind of insects, wasps, and bees for his principal food. We are aware that he has been accused of a failure to discriminate between such legitimate prey and the honey bee, and that neighboring swarms have sometimes suffered in consequence. Be this as it may, for our part we shall find no fault with him on that account. Since its cross with the Italian our honey bee has become such a pest to fruit-growers that we might well be rid of it altogether.

There are two other well-known members of this group with which we could not well do without.

Our summer sky could hardly be considered perfect without at least a pair of long-winged night-hawks sporting hazily through its, and descending occasionally with a sounding swoop.

Neither would our summer evenings be properly rounded off without a flock of twittering chimney swifts circling over our heads and dropping successively out of sight, as parting daylight is fading into darkness.

In the second group we will speak of those that watch for their prey from the perch, but take it while flying. These are called the fly catchers.

Prominent among them are the king bird, rock pewee and wood pewee.

"It seems a provision of nature," writes Mr. Samuels, "that all fly catchers shall only take those insects that have taken flight from the foliage of trees and shrubs, at the same time making the warblers and other birds capture those which remain concealed in such places."

"The king bird, in seizing a flying insect, flies in a sort of half-bolding hover and seizes it with a snap of the bill. Sometimes he designs from his perch and captures a grasshopper that has just taken a short flight and occasionally seizes one that is crawling up some tall stalk of grass."

"Those farmers who keep been dislike this bird because of his bad habit of eating as many of those insects as show themselves in the neighborhood of his nest, but they should remember that the general interests of agriculture are greater than those of a hive of bees."

He is possessed of great courage and is more than a match for hawk or crow, which he attacks and drives off whenever they venture into his neighborhood.

The rock pewee, or house pewee, comes to us in the early days of spring, and announces his arrival by uttering the notes from which he derives his name.

Fledgling, he generally seeks his last year's nest and makes such repairs as he fancies necessary; perhaps a small addition to strengthen the outside or a new lining.

The foundation of the nest is composed of pellets of mud mixed with fine roos and grasses, plastered to the wall or other object against which it is built, and lined with soft grasses, wool or feathers.

His favorite haunts is under arch of a bridge, or under the eave of a mill or dwelling. Here he can be seen during the breeding season, perched on the branch of some overhanging tree, or upon the rail of the bridge, or neighboring fence post, darting his eye, uttering his plaintive notes and darting about in all directions snapping up the insects which generally swarm plentifully in the locality he has chosen for his home.

The rock pewee is generally found foraging along the edge of the woods that hides his nest, or among the lower branches of the fruit trees near the garden, and even among the trees growing on the city lots.

Here, like his less shy cousin, he can be seen perched on some projecting twig always or the alert, darting quickly forward and back, catching the flying insects that come within sight of his ever watchful eye. His notes uttered while thus employed, are similar to the rock pewee only more plaintive and longer drawn out.

The next group, embraces those birds, that seek and capture their food among the foliage, buds and blossoms of the trees and shrubs.

Prominent among them rank the Baltimore oriole, orchard oriole, wood or song thrush, the vireos and some of the warblers.

"The food of the oriole is almost entirely insectivorous, young peas and stamens of cherry and plum flowers forming the only exceptions. These small robberies are but a slight compensation for the invaluable services he renders the gardener in the destruction of hosts of noxious insects. At first beetles and hymenopterous insects form his diet and he seeks them with restless agility among the opening buds. As the season progresses, and the caterpillars begin to appear, he forsakes the tough beetle and rejoices in their juicy bodies. Even the hairy kind he does not refuse, and is almost the only bird that will eat the disgusting tent caterpillar of the apple trees."

To its usefulness it adds a plumage of rare beauty and brilliancy, a song of great cheerfulness and a nest wonderfully constructed.

"There is in his song," says Mr. Wilson, "a certain sweet plaintiveness, extremely interesting; that is uttering with the pleasing tranquillity of a careless boy, whistling for his own amusement."

"It is a joyous, contented song," says a writer in Harper's Magazine, "standing out from the chorus that greets our half awakened ears at daylight, as brightly as its author shines against the dewy foliage."
T. W. Higginson exclaims, "You're oriole fills with light and melody the thousand branches of a neighborhood."

He is a social bird—a bird of sunlight. His hammer-like nest is never found in the deep woods. His haunts are those grand old trees which the farmer leaves here and there in his fields as shade for his cattle, that lean over the brier-tangled fence of the lane, or droop toward the dancing waters of some rural river.

We are now among a host of feathered choristers, to which the song of the oriole is like the bugle notes for the opening of the grand winged orchestra.

Where all possess so much merit it is difficult to assign precedence. Out of the deep woods, however, comes a beautiful melanocholy strain, which is not very common, but when heard cannot fail to arrest the attention.

"The prelude to this song," says Nuttall, "resembles almost the double-tonguing of the flute, blended with a tinkling, shrill and solemn wail, which echoes from his solitary retreat like the dirge of some sad recluse, which abundance of years haunts life of the wing."  "

The whole air consists usually of four parts, or bars, which succeed in definite time and finally blend together in impressive and soothing harmony, becoming more mellow and sweet at every repetition. It is nearly impossible by words to convey any idea of the peculiar wrinkle of the vocal hornet; but among his phrases the sound of "aurée," peculiarly liquid and followed by a trill, repeated in two separate bars, is readily recognizable.

We have followed this song, which seems to blend before us deep into the woods as we advanced, without getting a sight of the bird, until brought to a sudden halt by a sharp "chuck!" when for the first time we saw the object of our search perched upon a twig of a neighboring tree and eyeing us sharply. It was the "song thrush" or "wood thrush;" a small bird in size between the blue bird and robin; cinnamon brown on the back and whitish breast marked with well-defined dark triangular spots.

Its notes are uttered while engaged in hunting for insects among the foliage.

Next we have the "Vireo's," of which there are four reported as visiting this part of our country. The red-eyed warbling white-eyed and blue-eyed—all useful birds, that feed on insects, which, like the two preceding, they hunt among the foliage. They are in size about like the canary, of a grayish olive green, and variously marked as their names indicate. Their nests are pensile or hanging—generally fastened to the fork of a horizontal twig, shaped not unlike a shallow, open-mouthed purse.

Mr. Scaunes writes of the Red-eyed Vireo in the following commendatory manner: "I feel that no description of mine can do justice to the genial, happy, industrious disposition of this, one of our most common, and, perhaps, best-loved birds. From the time of its arrival, about the first week in May, until its departure, about the first week in October, it is seen in the foliage of elms and other shade trees, in the midst of our villages and cities, in the apple trees near the farm-houses, and in the tall oaks and chestnuts, in the deep forests—everywhere, at all hours of the day, from early dawn until evening twilight, his sweet, half plaintive, half meditative carol is heard; and whenever we see him, we notice that he is busily searching in the foliage of trees for caterpillars and numerous larve, or pursuing winged insects that have taken flight from the trees.

"Of all birds, I think this, my favorite family, I feel that it is impossible to say too much in their favor; their next and delicate plumage; and sweet song, their engaging and interesting habits, and their well-known insect-destroying proclivities, have justly rendered them great favorites; and the farmer in protecting them and encouraging them to take up homes near his orchard and gardens, extends a care and welcome to his best friends."

The wren and blue-bird may be considered together; both being insectivorous, capturing their food alike upon the trees and on the ground, and building in crevices and boxes. These birds seem to be getting more scarce in late years. In our school-day days there was no season that we did not know of a wren or blue-bird's nest. We recollect instances when the wren contended for quarters with the martin and out-witted him by narrowing the entrance of the box with sticks, strongly and skillfully placed, so as to admit himself, but keep his larger antagonist out.

The wood-pecker family have been voted great scamps—fruit-stomping, sap-sucking rascals—a proper target for every idle boy, who could handle an old rusty gun, to blaze away at. Of late years their usefulness has become less apparent, and they are not allowed to pass them from total extermination. They are the "policeman" of the wood and woody part of our timber, fruit and shade trees. In fact, to us, the red-headed wood-pecker does not seem unlike a licensed policeman patrolling his beat, up and down and around the trunk, and out along the limbs of some old tree, tapping and rattling for concealed marauding insects, and dragging them from their hiding-places without mercy when discovered.

We have frequently noticed the trunks of old apple trees punctured in a regular succession of circles; or have seen spots as large as a hand where the bark seemed dead, ridged like the bottom of a colander, all the work of this or a smaller speckled wood-pecker, known as the sap-sucker, in their efforts to damage the insects under the bark.

Should these faithful servants be denied a few of the fruit of the trees they help to save? A few years ago we observed several Scotch pines in one of our cemeteries treated in this manner, and the resinous sap exuding and filling the punctured circles. Surely, we thought, this time the bird could have been after no honest purpose; and deserved the bad name it bore. Behold, in the following spring one of the pines was dead; and taking a friend with us, we examined into the cause and found the inner bark and some of the larger limbs reduced to the condition of fine sawdust, having been entirely eaten by worms. Here the borers had been too numerous or the trees too far gone. The other pines were no doubt saved by the timely interference of this much-slaughtered bird.

Closely allied in habits of life to the wood-pecker are the titmouse and chickadees, of which ornithologists report three as visitants to this country. They feed on insects and the eggs of moths deposited on and in the crevices of the bark and in the buds of trees and shrubs.

During breeding season they are busy through the whole of the summer, in acquiring vast quantities of caterpillars, flies and grubs, "it has been calculated," says Mr. Scaunes, "that a pair of these birds destroy on the average no less than five hundred of these pests daily."

"The chickadee trips along the branches, trips under every leaf, swings round upon his perch, spurred out every insect and secures it with a peck so rapid that it is hardly perceptible."

Last but not least in our list come some of our best known and most reliable friends. Prominent among which are the brown thrush, or song bird, robin, black bird, blackbird, meadow-lark, chipping-sparrow, song-sparrow and indigo-bird. These feed on small fruit, seeds and berries, as well as on insects, grubs and worms. They help themselves to some of our early fruit, and in that way sometimes annoy us. Still if an account could be made up of what they take, and the good they do, the balance would show largely in their favor.

They compensate us in still another way; they cheer us with their presence and songs; for amongst them are some of the most talented musicians. Unlike the oriole and veireo, which carol while they labor, this class lay aside other duties when they addressed themselves to song. Ascending some elevated perch and concentrating all their vocal powers, they pour forth their strains of melody, as if it were to a listening audience.

Mounted on the topmost spray of a neighboring tree or bush, the brown thrush welcomes the farmer planting seed at early morning with cries of "drop it, drop it, cover it up, cover it up. Pull it up, pull it up; see, see, see; there you have it; work away, work away; cover it up." This bird, although often seen in the orchard and pasture field, generally builds his nest in the neighboring thicket and seems partial to sprout land, or woods having undergrowth.

A few years ago we considered ourselves highly favored when a pair selected a small evergreen upon the lawn for their nesting place, and we gave strict orders for no one to go near while the work was progressing, but unfortunately some unknown enemy must have discovered them, for one day we found the eggs broken and the nest deserted.

Of the robin a writer in the Atlantic Monthly says: "I shall not ask pardon for assigning to him the highest rank as a singing bird, while others may surpass him in some particulars: the notes of the robin are all melodious, all delightfully loud without vociferation, mellow without monotony, fervent without ecstasy, and combining more mellowness of tone, plaintiveness, cheerfulness and propriety of execution than those of any other bird. Without his sweet notes the mornings would be like a vernal landscape without flowers, or a summer evening sky without tius."
After the noon-day heat has silenced the early performers, the song sparrow, chipping sparrow and indigo bird continue to sing at intervals during the greater part of the day. The song sparrow has been assigned a high place among singing birds. His song is certainly very soft and sweet, without a harsh note in it. We hear it mostly from the hedge rows, and along the edges of the grain or pasture fields.

The sprightly little indigo bird selects the highest twig of some tall tree in the vicinity of his nest to pour out his noon-day song.

Last and least is the chirping sparrow, greeting us from the fence posts, along the highways and country lanes, with its peculiar but pleasant little song not unlike that of a summer breeze.

Having thus spoken in behalf of some of our "winged friends" as time would allow, leaving, however, many of them unnoticed, and many of the good things which might be said in their favor unaided, the next question naturally arises — how can we best preserve these winged institutions, which have become interwoven with some of our earliest and happiest recollections of rural life, and hand them down to posterity unimpaired?

The woods, of course, have ever been the great nursery for birds. We do not mean the endless forests, which at one time covered this country, but belts of timber with plenty of undergrowth lying between farms, adjoining the cultivated land, and along the streams.

These gave plenty of room and material for nests, were within convenient reach of the sunlight, and the food there found; at the same time there was some protection from man against birds of prey.

As our woods are cleared away we should endeavor to provide other shelter, by saving the trees, wherever possible, upon the farm; by planting thickets of young timber in such places where land cannot be profitably cultivated. Hedge-rows become good nesting places for the smaller kinds of birds, and afford protection when pursued by hawks.

Evergreens planted for ornament or protection oftentimes attract birds. The summer-house or open building on the lawn or in the orchard is generally selected by the robin for a nesting-place. So the shrubbery and climbing vines around the house should be at the service of the chirping sparrow and warblers.

The orchard, of course, we expect to have its full share of nests, and the elm, or weeping willow, or the old pear tree, to have one of its drooping limbs graced with an oriole's hammock. A row of boxes should be put up against the south or east side of the house for the martins; shelves under the forelay for the swallow, and an opening in the upper part of the barn for them to pass in and out freely, being on the south side of the building.

Such chimneys as are not used in the summer should be left uncovered for the chimney swallows. Boxes should be put up against the outbuildings, and on the sheltered side of trees, for the blue-bird and wren; so that the whins of these our good fairies may be properly humored.

When these accommodations are provided and the birds happily do come to occupy them, or some of them, do not interfere with their housekeeping nor suffer anyone else to molest them, whether it be thoughtless man or sneaking cat. Do not approach their nests unnecessarily nor allow anyone else to do so; remember this is a tender point with all birds, and will cause them to change residence very soon. Do not allow the English sparrow to take possession of the boxes and drive the others out.

One more suggestion and I am done. If there is no running water on your farm or in the vicinity, provide a place for the birds to drink, and where they can get soft material to build nests. Swallows and martins love to skim near the surface of the water and take an occasional dip. Robins and cat-birds will help themselves at the water trough in the barn-yard, but the more shy birds, like the brown thrush, will not venture that far. Water should be kept for their use in a more secluded place.

A cheap bird fountain can be made with an old demi-john or carboy, which can be had at a drug or liquor store for a trifle.

Select a suitable spot frequented by the birds and where they will not be disturbed. Place a trough or other shallow vessel on the ground; drive stakes for the demijohn to rest upon in an inverted position so that its mouth will nearly touch the bottom of the trough and hold it in that position, then fill the demi-john and turn it upside down upon the stakes. The water will run out and keep the trough partly filled until the supply in the demi-john is all used; on the same principle as a small bird fountain.

We had a fountain made in this manner with a five gallon demi-john, which answered the purpose admirably, and required refilling once a week. The depth of the water can be regulated by raising or lowering the mouth of the demi-john.

And now with your "winged friends" properly cared for, yourselves cheered and comforted by their presence and grateful song, your orchards saved from the ravages of insects and their golden fruit safely stored away for winter use, you may live as contented and happy as it is possible for mortals to be.

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### SEEDLING FRUITS.

*This question may be answered in a general way in a few words, viz.: Sow seeds and raise plants, shrubs, vines and trees. And further, does not nature attend to this matter without the aid of man? Are not a large proportion, if not the largest, of the most valuable fruits accidental seedlings? I will not for a moment dispute the said assertion, but at the same time I hold that, many valuable varieties of fruits are the result of seeds planted by the hand of man, for which he has received no crdt.*

Many trees have been planted throughout our country since its settlement, by missionaries, travelers and others, the result of which have been the formation of fruit-growing colonies.

Within the last quarter of a century, however, many new fruits have been produced by more intelligent methods, viz.: by hybridization and by cross fertilization by design, which have produced the most gratifying results, we must be surprised at the result.

With the grape greater success has been attained than with any other kind of fruit. Of the value of grapes produced by design it is now impossible to estimate, when we compare the time when the Isabella and Catawba were the only popular grapes, with the present day, when scores of improved and superior varieties are being disseminated through the length and breadth of the land.

Thanks to Messrs. Rogers, Hickory, Wyley and others for the choice we may now make in our selection for planting; and from present indications we are just on the threshold of what we may expect, and, unless the future shall be the past, this country will, in the near future, be enabled to claim as great a variety of fine native grapes as any other.

The number of new and improved varieties of strawberries, raspberries, blackberries, cherries, pears and other fruits have of late years been multiplied to such an extent as to almost confound the planter with limited room or means. This, however, should not deter him from selecting the choice, by observation and testing will eventually decide so as to lead to the "survival of the fittest." The venerable President of the American Pomological Society has in almost every annual address urged the production of new fruits by hybridization and cross fertilization, and is in his advanced years leading a helpful hand in this laudable cause.

The only serious drawback in the multiplication of new fruits is the disposition to make too great a speculation of new things, and too many make extravagant claims for their pet products and cling tenaciously to those claims whether worthy or not, simply because it is their own production. May this, as well as other horticultural and pomological societies, be slow to recommend any new fruit or vegetable for general cultivation unless thoroughly and extensively tested: no new fruit should be added to our catalogues unless it has special merit not possessed by any already on the list.

But to the question. Prior to the formation of the flower and period of inflorescence, nature seems to work in the dark, but during and from this time until the fruit is perfected, her operations are intensely interesting to the close observer. Let us follow her progress in the development of the flower, the expansion of the corolla, the spreading of the petals, exhibiting the stamens and pistil—a perfect flower in all its beauty and fragrance. The most important parts, however, are the reproductive organs—the stamens and pistils; the former are termed male and the latter female organs. When the anther of the stamen is ripe it casts off its pollen in very minute particles which falls upon the stigma of the pistil, which when in a condition to receive the pollen is of a glutinous nature, to which same adheres; thence it passes down through the style of the pistil into the ovary and there is fertilization completed.

Some plants, shrubs and trees have flowers purely stamine and others purely pistillate on the same plant or tree, while others have stamine flowers on one plant or tree and pistillate on the other. The latter are termed dioecious, the former monocious; but whatever the nature of the plant may be, unless
The polen reaches the ovary of the pistil, there can be no fertilization, and consequently not seed or fruit.

It is well known that seeds do not always produce the same fruit as their parent, showing that pollen is carried from other trees, by insects or by the wind, or both.

It is not at all strange, therefore, that, by planting seeds that have been fertilized by nature the chances will be few and far between of the seedling being superior to its parent, although such cases have occurred. Some fruits reproduce their kind truly, more commonly than pip fruits.

The object in producing new varieties is to combine desirable qualities of both parents in the progeny, on the same principle on which stock-breeders operate, and we must admit that they have more nearly attained their ideal in that particular than horticulturists and plant breeders.

The former, however, have followed their object practically for a longer period than the latter, who will, in my opinion, eventually, by judicious selection, breed out objectionable and breed in desirable qualities in fruit, as breeders of animals do in live stock. Let us not be surprised some day to hear of thouroughbred apples, pears, peaches, grapes, and other fruits; and that books of fruits, with their pedigrees, will be kept as well as herd books.

The new and improved varieties of fruit produced by design by hybridization and crossing of different sorts and by careful selection to prove the above assertions, for very few, if any, have been re-crossed to test the theory of transmission.

Is it not reasonable that laws which govern the vegetable kingdom are as immutable as those that govern the animal kingdom, however limited our present knowledge of the subject may be?

In crossing a sweet fruit with an acid one, we would reasonably expect the new seedling to be sub-acid, but such will not certainly follow. It is therefore of the highest importance that those who propose to follow, or who are now following, this very interesting business, should thoroughly understand and obey the laws which govern its processes in all its details.

For instance, the question may arise, whether the more vigorous plant or tree will transmit more of its nature than the weaker one; or, what will be the effect of applying the pollen to the pistil as early as it can be made effective, or as late as the nature of the case will admit, or by applying the pollen in its earliest available condition to the stigma as late as it will admit, and everest; the results of applying the pollen by sunshine or under a cloud; the effect of wet or dry weather following fertilization; also, whether the application of the pollen to the young ovule while the fruit is in the form of a seed, or the young seedling growing, will produce different results. Whether it will ever happen to the lot of man to fully understand the laws which govern this delicate process or not, one thing is reasonably certain; that by crossing two varieties of fruit of great excellence, the resulting fruit will be superior to the product of two inferior varieties. But how to obtain the qualities we may desire, by crossing, is yet a hidden mystery.

If, however, stockmen could breed off horns, and almost reach their idea in breeding beef, milk, and butter strains into fixed types, may not fruit-growers attain similar results in the vegetable kingdom by taking a thorough course in nature's school of experience?

But whatever we may achieve, our calling is a noble one; and, with what has been done in the past, and the progress being made at present, we may still feel that we had a hand in the good work. We may still thank a Divine Providence that we were born in the Nineteenth Century.

Our Local Organizations.

The Lancaster County Agricultural and Horticultural Society.

The Lancaster County Agricultural Society met at the Opera Rooms on Monday afternoon, March 9th, in their usual meeting.

The following members were in attendance: Joseph W. Ritter, Paradise; David B. Kendig, Crewe; H. M. Emile, Marietta; Calvin Cooper, Bird-in-Hand; S. P. Esh, Eby, J. M. Johnston, city; Capers Hieler, Conestoga; C. L. Hassacker, Manheim; F. B. Diffenderfer, Lebanon; J. W. Vermeulen, Vineyard, Lititz, Salisbury, W. W. Grist, city; Enos R. Weaver, Strasburg; John H. Landis, Manor; John G. Hess, West Willow.

On motion, the reading of the minutes of the previous meeting was dispensed with.

Crop Reports.

H. M. Engle said winter wheat and grass look well. The prospect for fruit is good.

E. H. Weaver reported old clover as frozen out in some places, but the young clover looks well.

M. D. Kendig reported a good many sales of tobacco in his township at fair prices.

Mr. Whitman thought his old clover is not fit for seed; at least, in that part of the state, that smart persons would assert they were entirely different. Although the change in location may not be very great, we have something in soil and climatic influence so unites to its natural element that none cannot supply, and which we are unable to transplant.

It will doubtless be asserted that continual changes are taking place in all newly settled neighborhoods. The laws of forests will, in itself, bring about changes not perceptible at the time. But as years go on, the changes are so manifest that every one are enabled in our comparisons of the seasons of former years with those of the later to perceive such a material difference as to call them a new era. This may affect, to some extent, the local fruit of each section. Nevertheless, I believe it is so gradual and extensive that it is not proper to adapt itself to the surrounding circumstances of its native place.

The idea that I more particularly wish to impress is the common error in braving varieties of apples and pears in the name of the same county, or even the same State, and, I might assert, of the same country, for, indeed, what might be considered first quality in the north may be considered unprofitable in the south, would be of little value in the southern section, and vice versa. Although they might be upon the same tree or branch, and under the same climatic conditions, they might not supply the requisites of its native locality. Then, too, what would flourish in the eastern section, along the Alleghenies, might not be worthy of cultivation in the fertile valleys of the western end. It does not necessarily follow that a variety which produce well and retain all its good qualities in every part of its own locality. But we have good reason to believe there is more certainty of receiving a good reward for the labor in removing sorts native to each particular section, provided the same altitude, degree of latitude and natural aspects be maintained, and even then exceptions will occur.

The grave error of our own vicinity might be attributed to the very fact that we are well supplied with variety, and a want of interest by our agriculturists in horticulture has caused them to neglect their apple crops. And, to make the matter worse, many have been grown with the want of proper nourishment and care; some, too, have become victims of the worm's vein, and while it is injurious to few in the Lebanon Valley, supplying health giving luxuries to the hospital, has been supplanted to the growth of a hosierous and noxious weed, to the great comfort of the farmer in a neighbor who had cut down a flourishing orchard, he could not control its growth. It would be well if we could raise them; and this was doubtless true in his case, and why? Because in the selection of the trees he did not abide by the rule that he was so enthusiastic in his estimation and value of the fine fruits that were then put in our markets, from the white snows of Canada, the fertile valleys of the eastern New York, where Baldwin, Spitzenberger, Twenty One, Tompkins King, Gillover, Northern Pippin, and others are cultivated, and also, what help have all observed that a loweweariness has been created in the interest of the orchardist, and that the late varieties are preferred. If the high prices of superior excellence can be brought cheaply to our markets from sections less valuable in agricultural acres, then there must be an error in our cultivation in the cities, while the poorer classes of the rural districts are not supplied and often suffer for the health-giving luxuries so essential in our temperate climate. I wish only to mention a single instance of the point I have made.

I might enter an apology here for aiding in the dissemination of varieties unsuited to our locality, but the nurseryman, like all business men, is not excepted from the laws of nature, and it does not seem reasonable why the demand was for the varieties brought to our markets from the northern districts above referred to. It would be a great error for a nurseryman to grow so many of the same varieties as his competitors, when their are varieties which our localities and the habits of our people require. A large number of such varieties is unnecessary, but Miss Harbeson as above mentioned, may be found to be a vast avenue for other novelties that in all probability will meet with the same fate. Thus from lists of from two to three hundred varieties, many may be struck out by the scores and hundreds to suit the varied fancy of customers. Hence failures have become so numerous that some book, with discrimination upon all, and plan the enterprise as discouraging and unprofitable.

Is there no remedy? Can we not grow apples as we do our grains? The abundance of rain and the plentiful hours and sun and the fertile soil have caused us to flourish as our, and we have many instances of fine orchards. Our fruit culture is not nearly so extensively carried on in the state as we might wish, and the experiments have been taken in the selection of varieties, and the attention to cultivation, pruning, and the application of fertilizers. When the time comes when everyone is a fruit grower in his immediate neighborhood, there will be a much better demand for the best fruit in that section, and then plant nine-tenths of his orchard with those known to do well there. Failure will not recur in the future, for otherwise, that else might be an experimental plot of those promising well and not fully utilized. I do not, however, wish to be understood as disparaging at all what they are endeavoring. But I do protest against them being planted to supply the demand for fruits in the state. The prevailing habit of planting a long list for the sake of variety is not only vexation to the nurseryman, but a great loss to the consumer.

I have frequently supplied orders of fifteen or twenty trees with as many varieties, while a lesser number, done under the same conditions, might have been 40 or 50 in quantity. After the trees had begun to bear, and the planter learned to know the one that was the most fertile, he would order only that variety, as many varieties selected as reliable. But the lists are often supplied with varieties which are never heard of, and a catalogue whose glowing descriptions please the fancy of the prospective fruit grower.

The following text emphatically discourages the experimental mania for varieties grown in remote districts, except to a very limited extent, and that when in connection with a few doing well generally; and I would caution all from bringing northern apples and pears into our market, unless they are of the hardy variety, water keeper, notwithstanding the fruit can be brought and kept through the winter. As a rule, the winter is so warm, the fruit ripens too early and begins to decay before the cool weather begins.

Remarks.

Capers Hieler said it was a fact that we cannot longer keep apples as we once could. What the
cause is he was not prepared to say, but the fact is indispensable. He was inclined to attribute it to a
change in the seasons. But for all this we must not
away with the apple orchard. An acre of orchard
is worth more than any other on the farm. Not in the
belief that the warm dry summers are the reason we
have not large crops of apples for winter use.
Ephraim H. Hoover thought the increase of in
seeds had much to do with our poor apples and
then keeping qualities. When we put the crop away it
will be because we have therefore will keep.
He has tried turning in hogs when the apples begin
to fall and keeping them there all the season. This
keeps down the insects and preserves the crop. In
seeds are one of the causes that make our apples
poor quality. We must dispose of the insects here
before we can hope to increase the quality of our
apples.

M. D. Kendig believed with the essayist in his
theory of planting native varieties. He thought it
was better and safer to buy either fruit or ornamental
trees of house grown origin than to get them elsewhere.

C. L. Hunsecker spoke of the fine apple crop of
1853; we have had none like it since. How long
will apples trees continue to bear; he gave some in-
fornations that he has heard of. He mentioned a tree in
Maine that lived 120 years. He also believed that certain climatic
changes had something to do with the failure of our
apple crops. If trees could be protected against high winds it might be beneficial. He believed the insects have
nothing to do with the failure of this, but we do not
take enough care of our orchards.

Mr. Cooper said hot weather makes apples drop prematurely. If the temperature in September and
October was not so high we would be able to grow
as much fruit as ever and as good.

E. S. Ely thought there were nearly all the essayist
had said. The question is, Are there any remedies to
overcome the evils that are upon us? If we select
better varieties our chances will improve. As
important matter is the will of the orchardist. The
economic value of good north can be controlled. But
this can be done only by the orchardist. It is not
only good apples even when there are many insects, but
the following year is generally a failure, because a
large apple crop is the cause of a large crop of in-
sects. The coding moth is our greatest enemy; it
does not attack our other crops. We can control this by
using the proper insecticides.

H. M. Engle also directed attention to the fact that
orchards must have as much manure as other fields.
We expect full crops, but make no effort to secure
them by putting as much manure as we do when we grow
wheat. It is necessary to improve the crops.

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Questions to be Answered at Next Meeting.

What is the best method to raise a good crop of corn? — Referred to John J. Rush.

Should wheat be harrowed in the spring? — Referred to John H. Landis.

Can commercial fertilizers be probably used on the potato crop or can they be applied? — Referred to H. M. Engle.

How should time be applied; on the surface or plowed under? — Referred to J. C. Linville.

There being no further business before the society, a motion to adjourn was made and carried.

THE POTHULY SOCIETY.

At the monthly meeting of the Lancaster County Horticultural Society, held on Monday morning, March 6th, the following were present: Secretary, J. B. Lighty, city; Charles Lippold, city; John Schum, city; E. H. Diefendorf, city; W. W. Grist, city; A. S. Flowers, Spring Garden; J. M. Johnston, city; J. B. Long, city; Henry M. Engle, Marietta; H. S. Batten, city, and John Joy.

In the absence of President Geyer, Charles Lip- pold presided.

Amendments to the constitution, authorizing the annual election to be held in February instead of January, and requiring the treasurer to report in February, and August, the money in his hands, and at the February meeting and make a detailed written report of receipts and expenditures, were adopted.

A communication from T. Frank Evans tendering his resignation as treasurer was read. The matter was postponed until the next meeting.

Fifty-nine members were reported in good standing.

FULTON FARMERS’ CLUB.

The Fulton Farmers’ Club met on Saturday, March 11th, at the residence of Joseph P. Grist, in Fulton township.

Mr. S. E. Gregg asked the question, "What is the best paying crop for farmers in the section wheat or corn?"

Joseph P. Grist said that he considered that wheat was not as hard on the land as corn, and as it required less labor and brought more per bushel, he thought it was the better paying crop of the two. He thought it would be generally put on more for wheat than for corn, and that in time we would need more alike, corn is the more certain crop, and while it is seventy cents per bushel and wheat one dollar and twenty-five, corn pays much better. The Montillon Brown and some others coincided with Day Wood.

Day Wood asked: "Is wheat going to advance in price soon, or would it be as well to sell soon?"

S. L. Gregg said he could not see what would make it advance, unless there should come a foreign demand. The price would depend on the demand for a large crop. The winter wheat looks well and they are already sowing spring wheat in the West, where they are likely to put in an unusual amount in consequence of the early spring.

Several others spoke of the reports being favorable, and they could see no reason for any permanent advance in price.

Montillon Brown asked: "What kind of fertilizers are those present going to apply for corn?"

Nearly all answered, S. and S. calf and cow manure.

Thomas Stubble said he had good results of the fertilizers using Orchidilla goya in York county, and would try it.

Melissa Gregg inquired: "Is a soap or meat vessel built of brick or stone, cemented, satisfactory?"

Joseph P. Grist and Mary A. Stubble, both reported having used it, and said they were satisfied. C. S. Gates said he had seen meat salted in such a vessel and it answered well.

Rebecca D. King asked: "How many tomatoes can be raised on an acre?"

None of those present had any experience in field culture of this plant and therefore could only guess at the amount, and the guesses ranged all the way from 1000 to 10,000 bushels.

E. H. Haline said: "Do scolding peach trees live longer than grafted ones?"

Wm. H. Haline had not found any difference. S. L. Gregg said he had not noticed much difference, but a neighbor of his had found the natural fruit to live longer and bear better than those grafted trees.

Joseph C. Stubble planted his peach trees in the fence corners and allows the cattle to keep the tops eaten off for two or three years. He thinks that by keeping the tops back until the trees are well rooted they do better. He is opposed to so grafted peach trees, and either plant them here the trees in an orchard had been cultivated, and they did not live as long as they did as some that were planted along the fence at the same time.

Thomas Stubble said he had not noticed any difference between grafted and grafted trees under similar treatment, but trees that come up along the fence do better than cultivated ones. C. S. Gates had found scoldings to do much better for him than the grafted ones.

Pricilla Coates said her husband had planted ten acres in grafted peach trees and they bore five good crops and one inferior crop, and then died. He took the worms out of the roots twice each season, the first time before the first of June and then in the fall again and scattered some salt around the trees once a year.

After dinner the male portion of the meeting took a look at things in and around the barn, where they found quite a difference made in the stock since the meeting here a year ago. The host was then feeding cattle and his stables contained some very fat hogs, and the corn that had been planted, and this kind of stock has taken the place of the former. We were shown a pair of grey mules, well matched, and weighing 2,400 pounds, and several smaller pairs, besides several horses, the good qualities of which I leave the owner to tell to his customers when called for.

After reassessing at the house some criticisms were made, generally favorable to the host. The shed over the barnyard had been improved and a field of wheat sown at the first of October had made an extraordinary growth.

H. H. Evans read from the Century Magazine a description of a meshane which had been on exhi- bition at the Atlanta Exposition, and which is intended to destroy potato bugs and other insects by sprinkling poisons mixed with water on the plants infested with pests. It is carried on a frame and having several elastic tabs attached, to the ends of which are fastened muzzles of peculiar con- struction for delivering the poisonous water to the underside of the leaves of the plants.

Montillon Brown read an article on protecting the grapes from insects and diseases, in which the writer recommends placing small paper bags, such as are used by grocers, over the bunches as soon as they are of the size of peas and tying them around the stems. This led to some discussion on the question of shaking grapes from the sun.

Joseph C. Stubble said he knew of a vine that did not good until it was allowed to grow under the eaves of the house and then it yielded perfect fruit; and also of a Catawba vine that did much better after being taken from a trellis and allowed to grow on a tree.

Pricilla Coates rested "Same Day."

The following list of officers were selected to serve the club for one year: President, Wm. King; Secretary, E. H. Haines; Treasurer, Lindley King; Librarian, Day Wood.

The next meeting will be held at the residence of Lindley King, on the second Saturday in April.

THE LINZNEIAN SOCIETY.

Twentieth Anniversary of the Founding of the Society.

The society met in the room of the Mechanics’ Library, on Friday evening, February 24, 1862. In the absence of the President and both Vice Presi- dents, Dr. Knight was called to the chair; Dr. Davis served as Secretary. After formal opening and calling in attendance of monthly dues, the following donations were received:

Museum.

A very superior specimen of Sulphuriferum, as an entire section of an oblong mass five inches in diameter, and exhibited a brilliant fracture. Obtained and donated by the curator.

Library.

"Statutes of the United States," in three volumes, imported from Europe, exclusive of copies indi- ced to each volume.


Proceedings of American Philosophical Society, from June to December, 1851, from the society.

Report of the Department of Agriculture for 1850-675, 8vo. pages, copiously illustrated.


Historical.

Two envelopes containing 24 biographical, histor- ical and scientific, and scientific, and scientific.

Anniversary.

This was the twentieth anniversary meeting of the society, and it is lamented that it was so poorly attended, especially since evening meetings were adopted in order to suit the convenience of those who alleged that they could not attend a meeting held during the day. During the year were published a paper in the origin and history of the society, which, on vote was requested to be published.

Science Gossip.

After half an hour’s pleasant intercourse under this rule of order, the society adjourned to meet on the last Saturday in March, upon which notice will be given by the Secretary.

History of the Society.

Dr. Rathvon’s paper was as follows:

Miss President: The first stated meeting of the Linzneian Society was held in February, 1862, just twenty years ago. Preliminary meetings had been held in January, but on the 8th of February its organic laws were adopted, its 1st board of officers elected, its list of members, the society was formally established.

The pages of history are filled with the names of men who have been a member of the "American Journal of Science," as early as 1847, and of the "Lancaster Conservatory of Arts and Sciences" in 1848, and I find several of these institutions disbanded for the want of working members.

Institutions of this kind need a yearly number of wealthy friends to support, and such friends are a sustaining element, as it is in England, France and Germany, and to some extent in our larger towns and most of the universities. The great men, like Peale, Thayer and Dr. Morton.

As it is in this country, they are generally composed of those who deep in Burke’s, do all that is done in their behalf by the sweat of their faces, and hence they are obliged to state their energies, to meet their secular demands.

When the Linzneian Society was first organized, its objects were the development of the natural history of Lancaster county and adjacent territory. This seemed to be the object at least of the few original members. The society was then a fairly well organized and successful one. I hardly think they fully comprehended the magnitude and value of the work they had to do.
of the undertaking; for, from the very beginning it seemed more intent on a species of scientific peculiarity, more or less outside of all practical management, it was compelled to sustain itself by monthly contributions, and even then, merely nominal as they were to the public, the strength of the movement as a whole in the city was not sufficiently appreciated. It was a glorious, at least a genial, undertaking, of the material it possesses, a matter that requires time for its development more than money. The early subscribers were not all equally enthusiastic. The society was voted to limited scientific excursions, mostly within the county of Lancaster, on which occasion large audiences were usually gathered, and which was neither scientifically nor systematically utilized. Out of these field meetings grew a sort of classification, the acquaintance by a learned society of many of the persons who had some sympathy with the original objects of the society, and consequently the success of the society depends. In the course of time, and much of the material collected on these occasions was almost a dead letter in the localities from which it was drawn, classify, arrange and label them. At first an attempt was made to catalogue and number them; but this work was soon abandoned, and finally became discouraged, on account of the rapid accumulation. Had each specimen been numbered, labeled and catalogued, as it was presented, and by the individual or member who donated or presented it, the result would have been quite different: for the majority of the material was a valuable addition to the scientific collections of the society as a scientific object collector would have been much in advance of its present condition in that respect.

From the records of the society kept by the secretary, it appears that over one hundred and thirty active members were enrolled, and that the number of subscribers was augmented by the addition of many of the persons who had some sympathy with the objects of the society, and this by the fact that one hundred and thirty odd, who were elected active members paid their initiation fees of at least one dollar, and one of twenty-five cents per month; and became merely contributing members, from the organization of the society down to the present time, has amounted to over twenty five hundred dollars. From the treasurer's report at the last annual meeting, it appeared that there was a balance of fifteen hundred dollars and this balance, with the interest earned, and with stock, extra contributions of a few members, a few other receipts, and such other items as are not mentioned, which prevailed for about three years, during the rejection. Therefore, regarding these dues as legal obligations, and regarding the interest and surplus as the property of the society from those who have been, from time to time, elected members of it. It is not generally ex pressed, and indeed it is not generally understood, that the society as a whole, in the creation of its stock, an accumulation of a large amount of material at least; indeed, a larger and a more valuable amount than the society at the present time. Of which we have always been in ignorance, was of the value of the natural history society was a well ordered museum of natural objects; and that, however essential it was to the success of the institution, that it was a matter of primary importance, for it brings the subject practically down to the comprehension even of the illiterate. This is a dry, musty, and smell old-fashioned crystal of carbonate of apatite, which, after searching and handling it, with ten minutes' instruction as to its use, and its uses, one person, for instance, a friend of this society may recognize as soon as he takes it into his hands, whether he can read a description of it or not. But if we go a step further, if the description, however scientific it may be, that it will convey the same impression to the layman, as externally, as the object itself. Not any of the members knew anything about the locality, and little information about the individuals themselves. Mr. H. furnished the society with a suit of minerals and metals, each specimen being about the size of a chestnut, that the world, if it was worth anything, thought them cheap. I could go into our storehouse and carry away a larger and better collection in my pockets, and yet you would not know that any were missing. At the same rate our collection of minerals alone would be worth $20,000. It is true, that the prices of minerals have depreciated, but fine specimens, especially if rare, are as expen sive as at any time, and in some cases more so. There is a cause there a demand for them. If the

The Lancaster Society could command the leisure and the pecuniary means to select from its duplicities, suit them to the localities where they might be sent to each village or school district in the county of Lancaster, it would approximate its legitimate function as a central scientific organism and medium of development.

For the purpose of determining the real value of any department of our museums. We have the life-hallows of two working botanists. A large collection of representative plants for the floriculture, botany, and archaeology appears to the superficial ob server—the largest collection in entomology in the province. In entomology, the vegetable kingdom, and the animal kingdom, it is evident this collection is remarkable, in that it includes the collections (or what remains of them) of Prof. Benj. Hoffman and the largest collection known to the State of Pennsylvania. This collection may be recognized specimens exclusively by Prof. Hentzel, nearly seventy years ago. Per haps it is one of the first entomological specimens in the State, and it is certainly the largest collection of entomological and ichthyological, and ornithological, of a local character, it is evident that the local importance of our natural objects, in the natural history of our localities, could be very much augmented, if it possessed the facilities for a permanent and scientific preservation. The collection in zoology could be very much increased through exchange of duplicates, if we had any one to take an active hold of that department. Perhaps it lacks more in man agement than in any other of the conspicuous branches, and the very inability to possess as much as it has any room for illustration.

On the whole, so far as the matter relates to the Zoological Department of the Lancaster Society during the twenty years of its existence, and under the peculiar circumstances in which the society has been called upon to proceed, there is a year, that it ought to be acceded an extraordinary support, in order to sustain it in the noble work to which it is called. As a result of the superior quality of the paper, the finely executed illustrations, and the literary ability of its letter press, the American Farmer is both a scientific and an educational journal, and an auxiliary to our educational institutions.

Allow me to congratulate the society on the manner in which it has been conducted during the past year, with a longevity that is hardly anticipated when it was first organized, and at a period, too, that seemed auspicious to the prosperity of the Federal Union.

LITERARY AND PERSONAL.

Two Words Worth Reading.—We have received from Ehrich Bros., of New York, a brace of the Luchs' Catalogue of about couriers of the spring number of that well known magazine of fashion, Ehrich's Fashion Quarterly.

The first is the 'Premium List' of the Quarterly, which contains as usual, a number of outer wear descriptions of the spring number of that well known magazine of fashion, Ehrich's Fashion Quarterly. The second is entitled "Shopping in New York," and is intended to convey an idea of the plan and scope of the Fashion Quarterly, and we must say that if the spring number of the Quarterly is as well executed as that by "Shopping in New York," it will be a very complete magazine of fashion. In this catalogue of sixteen page quotes, almost every department of a large New York retail trade is represented to a limited extent. The careful reader finds in it a few standard styles of undergarments, and in every page of it, a collection of wonderfully cheap embroidered; of bonnets; of window ornaments, and a dozen other necessities of housekeeping; while the less thoughtful daughter will enjoy the jewelry, the lace, and the lock-knocked robes. It is a collection that is spread before the reader, for a number of outer couriers of the last page, and fittingly completes the little book.

The Fashion Quarterly ought to have a large cir culation, and we think it will. For only fifty cents a year the publisher offers four beautiful fashion books, the most complete and most useful of the kind that has ever been published, and give to each subscriber, as well, the privilege of making a selection from a list of choice every six months, every choice by the New York music-dealers all over the country, at forty cents.

THE SOUTHERN CULTIVATOR and DEXIE FARMER. Editor and publisher: Joseph L. Jones, a weekly devoted to the cultivation and utilization of the Sugar Beet. In its issue, under the title "The Sugar Beet," the following article is reprinted from another paper: "The Sugar Beet. Devised to the cultivation and utilization of the Sugar Beet. In its issue, under the title "The Sugar Beet," the following article is reprinted from another paper: "The Sugar Beet. Devised to the cultivation and utilization of the Sugar Beet. In its issue, under the title "The Sugar Beet," the following article is reprinted from another paper:

The Miller's Review.—Devoted to milling, millwrighting, and mill-furnishing, a Royal quart page is given over to the "Miller's Review" of the week, the 37th, 755 Walnut street, Philadelphia, Pa., at $1.00 per year. The first number of the first volume of the "Miller's Review" is a most interesting and instructive one. The Editor remarks that the cultivation of the sugar beet has not only come to stay, but that the perfection of the process would make it feasible under any circumstances. It is not only a question of the value of the sugar beet to our country, but of the benefit which it will bring to the country. The Miller's Review is able to make it a success how much greater the prospect on the generous soil of Lancaster county.

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THE KING FORTUNE-MAKER.

A New Process for Preserving all Perishable Articles, Animal and Vegetable from Fermentation and Putrefaction, Retaining their Odor and Flavor.

"OZONE—Purified air, active state of Oxygen."—Webster.

This process is a new liquid pickle, or any of the old and exploded processes, but is simply and purely OZONE, as produced and applied by an entirely new process. Ozone is the antiseptic principle of every substance, and possesses the power to preserve animal and vegetable structures from decay.

To any one who is liable to decay or spoil which Ozone, the new Preservative, will not preserve for all time in a perfectly fresh and palatable condition.

The value of Ozone as a natural preserver has been known by the older chemists for years, but, until now, no process of utilizing it in a practical, inexpensive, and simple manner has been discovered.

Microscopic observations prove that decay is due to some matter or minute germs, that develop and feed upon animal and vegetable structures. Ozone, applied by the Creative process, arrests and destroys these germs at once, and thus preserves.

At our office in Cincinnati can be seen a sample of every article that can be thought of, preserved by this process, and every visitor is welcome to come in, look, smell, take away with him, and test in every way the merits of Ozone as a preservative. We will also preserve, free of charge, any article that is brought or sent prepaid to us, and have the same preserved by our process.

FRESH MEATS, such as beef, mutton, veal, pork, poultry, game, fish, &c., preserved by this method, can be shipped to Europe, subjected to atmospheric change, and yet be perfectly preserved for the same time as by other methods.

EGGS can be treated at a cost of less than one dollar a thousand dozens, and he kept in an ordinary room six months or more in its natural condition, and the eggs as fresh and perfect as on the day they were treated, and will sell strictly "choice." The advantage in preserving eggs is readily seen; there are 1000 dozen a day, and by Ozone treated eggs can be sold for an advance of one hundred to three hundred per cent. One man, with this method, can preserve 500 dozen a day.

FRUITS can be preserved in open or in cellar, and kept and preserved for any part of the world. The price expressed from fruits can be held for an indefinite period without fermentation—beneath the value of fruit which can be held perfectly sweet for any length of time.

VEGETABLES can be kept for an indefinite period in their natural condition, retaining their odor and flavor, without changing or destroying their original package at a small expense. All grains, flour, meal, &c., are held in their natural condition.

BUTTER can be made by the method which we have adopted, and held and sold in large quantities, and kept in a neat and clean condition.

Dead human bodies, treated before decomposition sets in, can be held in a natural condition for weeks, without puncturing the skin or mutilating the body in any way. Hence the great value of ozone to undertakers.

There is no change in the slightest particular in the appearance of any article thus preserved, and no trace of any foreign or medicinal taste.

The process is so simple that a child can operate as well as and as successfully as a man. There is no expensive apparatus or machinery required.

A room filled with different articles, such as eggs, meat, fish, &c., can be treated at one time, without additional expense.

In fact, there is nothing that Ozone will not preserve. Think of everything you can that is liable to spoil, and you will find it possible to preserve it, in exactly such a condition as you want it for any length of time. If you will remember this, you will see that questions as to whether you can preserve anything and every thing you can think of.

There is not a township in the United States in which a live man cannot make any amount of money, by having himself invested in interest in each county in the United States, in which we can place this Preservative, and through him secure the business which every county ought to produce.

A FORTUNE Awaits any Man who Secures Control of OZONE in any Township or County.

A. C. Powell, Marion, Ohio, has cleared $2000 in two months. $2 for a test package was his first investment.

Woods Brothers, Lebanon, Warren County, Ohio, made $9000 on eggs purchased in August and sold November 1st.

F. K. Raymond, Morristown, Belmont Co., Ohio, is clearing $2000 a month in handling and selling Ozone. $2 for a test package was his first investment.

D. F. Weber, Charlotte, Eaton Co., Mich., has cleared $1000 a month since August. $2 for a test package was his first investment.

J. B. Taylor, 80 S. State St., Chicago, is preserving eggs, fruit, &c., for the commission men of Chicago, charging 1½¢ for each egg. He is preserving 9,000 dozen eggs per day, and on December 1st, is making $3000 a month clear. $2 for a test package was his first investment.

This method is now being used in North and South Streets, is making $3900 a month in handling brewers' malt, preserving and shipping it as feed to all parts of the country. Malt unsold, beyond in 24 hours. Preserved by Ozone it keeps perfectly sweet without any addition of other substances.

These are instances which we have asked in the privilege of publishing. There are scores of others. Write to us and ask for our list.

New, to prove the absolute truth of everything we have said in this paper, we propose to place in your hands the means of proving for yourself that we have been and claim to have been right. To any person who doubts any of these statements, and who is interested sufficiently to make the trip, we will pay all traveling and hotel expenses for a visit to our office, if we fail to prove any statement that we make.

How to Secure a Fortune with Ozone.

A test package of Ozone, containing a sufficient quantity to preserve one thousand dozen eggs, or other articles in proportion, will be sent to any applicant on receipt of 50 cents. This package will enable the applicant to preserve any article of value, and make a profit of 100 to 500 per cent.

Don't let a day pass until you have ordered a Test Package, and if you desire to secure an exclusive privilege we assure you that delay may deprive you of it, for the applications come in to be preserved every day—many by telegraph. "First come first served" is our rule.

If you are not eager to send money in advance for the test package we will send it C. O. D., but this will pay you the expense of charges for return money. Our correspondence is very large, we have all we can do to attend to the shipping of orders without excepting our own, and we cannot wait until we can be sure that each order is filled, which does not order Ozone. If you think of any article that you are doubtful about Ozone preserving remember we guaranteed it in our last article, and "all that is gold does not glitter" is our motto.

REFERENCES.

We desire to extend our intention to a class of references which no enterprise or firm based on any thing but the unusual and extraordinary commercial merit could secure.

We refer, by permission, as to our integrity and to the thoroughness of the Prentiss Preparatory, to the following gentlemen: Edward C. Royer, Member Board of Public Works; F. O. Estabrook, City Comptroller; Angell Smith, Jr., President Attorneys Blythe M’Kechnie; W. C. Harrell, B. W. Howards, Chief Commissioners; W. S. Appel, County Auditor, all of Cincinnati, Hamilton County, Ohio. These gentlemen are each familiar with Ozone preparation and use for preservatives as well as for preservation and purification of the atmosphere.

The Most Valuable Article in the World.

If you invest in a test package, you will surely succeed to a township or county, and then your way is absolutely clear to make from $2000 to $10,000 a year.

PRENTISS PRESERVING COMPANY, Limited,
S. E. Cor. Ninth & Race Sts., Cincinnati, O.
WHERE TO BUY GOODS IN LANCASTER.

BOOTS AND SHOES.

M. LEVY, No. 3 East King street. For the best Dollar Shoes in Lancaster go to M. Levy, No. 3 East King street.

BOOKS AND STATIONERY.

J. BAER'S, No. 15 and 17 North Queen street, Dealers in Books, Stationery, Pens, Pencils, etc.

FURNITURE.

HENITY'S, No. 195, East King st., (over China Hall) is the cheapest place in Lancaster to buy Furniture. Picture Frames a specialty.

CHINA AND GLASSWARE.

HIGH & MARTIN, No. 15 East King st., dealers in China, Glass and Queenware, Fancy Goods, Lamps, Burners, Chimneys, etc.

CLOTHING.

M. RATHFON, Centre Hall, No. 12 East King st., Largest Clothing House in Pennsylvania outside of Philadelphia.

DRUGS AND MEDICINES.


J. E. LONG & SON, Dragstills, No. 12 North Queen st. Drugs, Medicines, Perfumery, Spices, Dye Stuff, Etc. Preparations carefully compounded.

DRY GOODS.

G. F. GIVER, BOWERS & HURST, No. 25 E. King st., Lancaster, Pa., Dealers in Dry Goods, Carpets and Merchant Tailoring. Prices as low as the lowest.

HATS AND CAPS.

C. H. AMER, No. 29 West King Street, Dealer in Hats, Caps, Furs, Robes, Etc. Assortment Large. Prices Low.

JEWELRY AND WATCHES.

Z. KOHN & BRO, No. 4 West King st., Watches, Clock and Musical Boxes. Watches and Jewelry Manufactured to order.

PRINTING.


FARMING FOR PROFIT.

It is conceded that this large and comprehensive work, advertised in another column by J. C. McDougal & Co., of Philadelphia, the well-known publishers of Standard works, is not only the newest and handsomest, but also the best work of the kind which has ever been published. Thoroughly treating the great subjects of general Agriculture, Live-Stock, Fruit-Growing, Business Principles, and Home Life; telling just what the farmer and the farmer's boys want to know, combining Science and Practice, stimulating thought, awakening inquiry, and interesting every member of the family, this book must exert a mighty influence for good. It is highly recommended by the best agricultural writers and the leading papers, and is destined to have an extensive sale. Agents are wanted everywhere. Send it.

CIDER MILLS!

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Nov-17.
EDITORIAL.

ENSILAGE.

"Whatever is worth doing at all, is worth doing well," and this rule applies in a very special sense to the silo and ensilage. It is true, the subject may have been overestimated, or excessively lauded; and it may also have been underestimated, and needlessly disparaged; but these circumstances ought not to militate against the subject as a fundamental principle that is capable of practical illustration. There is a vast difference between saur-kraut and rotten cabbage, practically; although theoretically, they may be synonymous. Well-made and well-preserved saur-kraut, is healthful and nutritious, and millions in the world subsist upon it during a great part of the year, and would experience a great deprivation, if not a great distress, if they could not obtain it. But rotten cabbage is unhealthful, enerating, and the source of stomach cramps, inflammation of the bowels, diarrhea, and possibly death. Doubtless, for lack of skill, there is a vast deal of this spurious saur-kraut made and consumed. Now, practically, ensilage is nothing more nor less than a sort of saur-kraut, made on a large scale, as food for cattle. It skillfully manipulated, and systematically preserved, cattle will eagerly appropriate it, and thrive upon it. The maker of good and nutritious saur-kraut, is careful to exclude it from the corrod- ing and corrupting action of the air, and in proportion as he succeeds in this, in that degree will he have good and healthful saur kraut. The same rule obtains in ensilage. The mere opinions of men, either pro or con on this subject, must go for just what they are worth, whatever may be the standard of indifference; and even where ensilage has been tried and succeeded, or failed, in its results, it may not be sufficient to establish the system as a fixed fact in the domain of domestic economy; much less when such failure is the result of an insufficient or ill constructed silo.

It has been alleged that cattle—or at least some cattle—will not voluntarily appropriate the contents of the silo, and thrive upon it, unless it is mixed with other kinds of food, as a sort of condiment; but, admitting this to be the case, it does not "settle the question." No one eats his saur-kraut "naked," but on the contrary, he always accompanies it with pork, or bacon; but this does not prove that saur-kraut is not nutritious. We presume that the gastronomic faculty in all animated nature is subject to cultivation—indeed we see it in many animals, (including even insects) as well as in man. And especially in ensilage has it been demonstrated during the past year, that cattle, which at first rejected it, ultimately became the most fond of it. This is nothing new.

Mr. S. S. Spencer, whose model farm and dairy is in near proximity to the western suburbs of the City of Lancaster, thoroughly tested the silo last year, and in every respect the results were satisfactory—indeed, more than realizing all he anticipated. But his silo was mechanically constructed, and on philosophical principles. His cattle consumed every shred of its contents, and looked, and longed for more; and this year his silo will be increased, at least ten-fold. He considers that there is no risk whatever in it, if the silo is properly constructed and intelligently manipulated. But this is not all: his cattle thrive upon it, and produced more and better milk, cream, and butter, than on any other kind of food. Had we heard or read such testimony coming from an unknown source, in view of the conflicting experiences and opinions published on the subject, possibly we might have received it with a large margin of doubt; but we have it from Mr. Spencer himself, and we know him to be an intelligent witness, and one not likely to continue long in self-deception. True, it might not just suit every man to have a silo, nor might it in every case be profitable. Perhaps to a man, keeping on a single cow it might not be as profitable as it would be to the man who owns a dozen cows: and yet if a quarter or a half barrel of saur-kraut can be preserved in a sound and healthy condition, there seems to be no good reason why the same quantity of ensilage fodder could not be equally as easily kept. When canned fruits and vegetables were first introduced as an adjunct to domestic housekeeping, immense quantities were utterly spoiled and had to be thrown away every year, because of the inexperience of those who manipulated it. But this is not the case now; and hence, we find many possessors of montial stores of pasturage, and other stock, and daily discovering that the animal kingdom for the most part, and in the case of that which in the beginning was deemed impracticable to preserve. Experience will doubtless work the same results in regard to ensilage and the silo.

APRIL MEETING.

For aught that we know, and for aught that the Daily and Weekly papers knew—at least, for aught that they uttered in their columns, there was no meeting of the Agricultural and Horticultural Society, on the first Monday (3d) day in April. True, there is a law of the Society, that when New Year's day, First of April, Fourth of July, and any other public holiday, occurs on the first Monday in the month, then the stated meeting of that month shall be held on the second Monday in that month, and it shall be stated, or proclaimed at the preceding meeting; and the object of said proclamation was for the purpose of making a record of it in the proceedings of the Society, and published with the other proceedings, in order to enable the members to act intelligently on the subject. But, no such statement or proclamation was made at the meeting held in March last, unless it was "suppressed" by the Reporters, or omitted in the proceedings.

This may have been neglect, forgetfulness, or inadvertence—we do not think it was the result of indifference—but, under any circumstances, it was contrary to that good order which should distinguish such a society, or any living society.

When it is necessary to omit, or dispense with a meeting in any society, and especially in one which is a "body politic in law," a record should be made of such omission or dispensation, to complete the chain of its existence; it will only add to the apathy, indifference, or lukewarmness, into which societies are liable to lapse, when nonattention is paid to their organic laws.

Attending the stated meetings of the society, and an active participation in its proceedings, are twin relatives to contributing to the literary columns of its representative journal; neither of which should be neglected or ignored. There are societies and journals in this country which have been in existence for more than half a century, and it is doubtful whether any one who had been connected with them, had ever been socially, morally, or intellectually injured by such connections. They may have had occasional duties imposed upon them, or may even have sustained pecuniary loss, but they have been compensated by a consciousness of having done something—having done something—for the benefit of mankind.

Man, in his normal condition, is essentially a gregarious—perhaps more properly—social creature, and when any number of men are banded together under organic laws, for the advancement of legitimate objects by legitimate means, they will only be elevating on earth those qualities which will fit them for a more useful hereafter: for, it seems totally at variance with all we know of the word and the works of God, that the red wine which all seem to covet in the hereafter, is a state of isolation, or, in other words, a sort of sobriety, or slothful indolence. When a man prefers habitual solitude—all other things being equal—depend upon it, there is something deformed in his mental or moral organization. He cannot work out his moral salvation more effectually through social intercourse, than he can through solitary seclusion. Those who are incapacitated for social intercourse, through physical or mental infirmities, are more to be commiserated, than enters into the imagination of the general run of men. Therefore, all institutions founded upon principles of equity and usefulness, should keep their organization intact.

Another great hindrance to the progress and the thrift of societies is, that so few enter their inner temples; the larger number are content to hang on the "ragged edges" of their outer borders. They take a merely temporary and irresponsible view of them instead of regarding them as permanent fixtures. A half-willed membership can only make a half-hearted organization, whatever the object of the society may be. "Whatever is doing worth doing at all, is worth doing well," applies as forcibly to social organization, as it does to any other human vacation. Take
THE LANCASTER FARMER.

KITCHEN-GARDEN FOR APRIL.

In the Middle States, now is the time to plant and sow, if we would hope to reap. Those of us who do not avail of the present, need not expect to profit in the future.

The exact time, however, in which certain seeds should be sown must depend not only on location in respect to latitude, but also on the nature of the soil; if it be heavy, a little delay will rather promote than retard our object. It is impracticable, under any circumstances, to always give undervailing directions—the common sense of each one must be brought in requisition.

Asparagus sow; or plant roots, if not attended to last month. This vegetable is now coming into season. Wherever practicable, a bed of sufficient size should be permitted to afford an ample supply without cutting every foot of root which peeps above the surface; indeed, wherever space and means admit, two beds should be maintained, and cut alternate seasons. The colossal asparagus appears to sustain its reputation. Beets, bush or bunch sow. Broccoli, "Large Early White," is very fine. Bets, early and long, sow. Cabbage, Drumhead and Flat Dutch, sow freely, that there be enough for the fly and to plant; also other sorts described in catalogues, which will afford an uninterrupting supply. Carrots, Early Horn, and Long Orange, sow. Cabbage, late, sow. Celery, soff, if not sown last month. Cress, sow. Cucumber, Early Frame, sow, in warm spot. Horse-radish, plant, if not done. Hot-beds attend to. Lock, sow. Lettuce sow in drills, also plant from beds of last autumn’s sowing. Marjorun, sweet, sow. Mustard, for salad, sow. Nasturtiums, sow. Osions, Buttons, for table use, plant, and sow thickly for sets. Parsley, sow. Parsnips, sugar, sow. Peas, early and late, for a succession, sow. Potatoes, plant plenty of the Early Rose for the main supply during summer and autumn. Radish, Long-haired, Long-yellow, and red turnip, sow, if not already sown; also the Golden Globe and White Summer, for succession. Salsify, sow. Sage, sow or plant. Tomato, sow, to succeed those sown in hot-beds. Spinach, Bloomsdale, sow at short intervals. Thyme, sow or plant. Turnips, sow, if not sow last month—they may succeed. In short, this is the season for the main sowing and planting in the middle States. A small expenditure of time will yield large results.—Landreth’s Rural Reg.

The next thing in importance to timely sowing and planting, is good seeds, if it is not an absolute pre-requisite: for, we cannot reasonably expect to reap much except that we sow. It is also a matter of some importance to sow such seeds as are adapted to the soil and the latitude of the locality where they are sown. Nor prudent man would plant lemons, oranges and bananas in the Arctic regions.

Landreth’s "original sealed packages" of seeds, are perhaps the most reliable and certain form, in which they could possibly be presented to the public, and these can be obtained not only of Landreth themselves, but at almost every seed store in the Union. Of course, there are also other good seedmen and good seeds in the country, but it would ap-
phenomenal nature that Pennsylvanians, and especial-ly Lancaster counties, should obtain seeds grown within their own belt of latitude. These living in a district, where certain seeds, fruits, roots and tubers are cultivated and naturalized, would be more likely to succeed with them, or other weather contingencies, than if they were cultivated in a different latitude: and this relates not only to latitude, but also in a greater or lesser degree to longitude. There are still some people who have an aversion to—if not a prejudice against “book-planting,” and “book-gardening;” and those people will condescend to follow the directions on a package of seeds (just as they follow the directions on a package or bottle of patent medicine) who would not go to the trouble of looking into a book; and these “sealed packages” may furnish about all the garden literature that such people will patronize.

But the spot with there is of it. There are many people who absolutely have not the time to pore over a book, even if they possessed one; or, if in the form of a periodical, it may not have been bound, and the particular number wanted may not just be at hand; hence when the season is at hand, and they possess a sealed package of seeds, with special directions for its use, they will know exactly what to do with it.

PHENOMENAL.

White-Spotted Tobacco.

Mr. Morris Gerschel recently left at the Lancaster Intelligence office a leaf of tobacco that was very peculiarly marked with white spots and tracings, some of the lines being as beautifully curved and zigzagged as if they had been worked by some deft embroiderer. We handed the leaf to Dr. S. S. Rathvon, of the LANCASTER FARMER, with a request that he would examine and report upon it. He kindly furnishes the following paper:—Ed. Intelligence.

White-Spotted Tobacco.

White spotted, like white-veined tobacco, is a phenomenon that comes distinctly within the scope of vegetable physiology; and is the result of some cause, and there are various theories and opinions, opinions among intelligent and experienced tobacco growers. I am sure I noticed white-spotted tobaccos more than fifty years ago, and they were generally esteemed the best of cigars. I supposed then, that the spots had been produced by artificial means, because there were peculiar brands and boxes of them, all of which were more or less spotted—if, indeed, they were not fashionable. Before the tobacco grower deplores the presence of white spots, he should submit his leaf to competent manufacturers, in order to learn to what extent the ware is injured by the presence of white spots. Perhaps, after all, the spots may be as conventional as those which sometimes occur on Berkshire pigs; which, although depriving the extrinsic value of the animal, cannot possibly injure the quality of the pork.

Neither white-spotted, nor white-veined to-bacco is therefore anything new, and may be present every year in some part of the country where tobacco is grown, although there may be certain years in which it may be more abundant than in other years. It would be fortunate for the tobacco grower if spotted tobacco and spotted cigars could be raised to the dignity of fashion, provided the spotted crop and the fashion were coincidental events; it would afford the dealers less opportunity to get the goods at prices below their real value, merely on account of the spots.

Being a physiological question then, the subject can only be elucidated through physiologic laws and principles, and this being the case, I confess the subject is “too high for me;” because, having no practical experience in vegetable physiology, I could, at best, only advance the experiences and theoretical deductions of others, with very limited corroborations of my own. I may be permitted to say, however, that the difference between white spots and white veins may not be so great as appears from a superficial view of the subject.

For instance, we cannot prick our bodies anywhere with a line needle, but what assimilable globule of blood will exude from the wound; and this is also the case with succulent vegetation. If we closely examine a skeletonized leaf or plant, we will find that the whole disk is penetrated by numerous nerves, nervures and nerveds, all of which have their absorbing and secreting; and so that we could hardly puncture it anywhere without rupturing one or more of these delicate organs; hence, if the phenomenon is the effect of an encroachment, which has been brought about perhaps by disease or other weather contingencies, or by soil conditions, as is alleged, it is as likely to manifest itself among the smaller nerves as among the larger ones.

I have now before me a tobacco leaf from Mr. Morris Gerschel, of the firm of Gerschel & Bro, tobacco packers, also three leaves from Mr. William Roeting, of Elizabethtown, all of which are singularly marked with white, leathery spots, dots, rings and zigzag lines; some of them like miniature streaks of “chain lightning,” or Egyptian hieroglyphics; and there does not seem to be any visible connection between these markings and the “mid rib,” the lateral ribs, or any of the prominent nerves, nervures, or nerveds. They cannot be classified with white-veined tobacco.

Whilst manipulating these leaves in a moist condition, in order to expand them, I was particularly impressed with their peculiar fragrance, especially those from Mr. Roeting, which are also smaller in size and darker in color than that from Mr. Gerschel, and I cannot conceive that they are really injur- ed by these peculiar markings, although they may affect their market value. On one of the leaves from Mr. Roeting the markings are much bolder, broader and more evident than the markings of any of the other leaves—indeed, no two of them are alike, the whole presenting an almost kaleidoscopic variety; and, if such effects could be produced artifici- ally, I don’t see why tobacco might not be cultivated as an ornamental plant, the same as the colias, callatinnias and begonias, or the variegated grasses, and such like.

By the introduction of certain chemical substances into the soil, botanical experimenters have been able to produce visible effects upon the leaves and flowers of plants; and, it is very probable that these markings have been produced through a diversion, or wrong direction of the sap-flow. A similar diversion or misdirection of the fluid circulation of plants, including trees and shrubbery, often develops the elaboration of the leaves, protruber- ances, concavities, curled leaf, wrinkles, ex- crescences and numerous other outward mani- festations of disease.

Arogogous effects are produced by minute insect-agents, bacteria, fungicide, a variety of galls, and also by bacterium fungi.

As already intimated, I cannot hazard a theory of even sufficient outline to embrace this subject in a specific sense, and probably it will never be understood until some pro- gressive tobacco culturist or vegetable physi- ologist discovers how to produce these mark- ings by artificial cultivation, or chemical ap- plications.

In conclusion allow me to refer the reader to page 25 (January number) of the LANCASTER FARMER for 1882, where may be found a paper by E. H. Kennison of Creswicke, Lancaster county, on the causes of “white veins and tobacco,” which Mr. II. very plausibly regards as a disease engendered by meteorologic conditions, operating upon the soil, or a sort of starvation of the plants through the prevailing droughts. In the same number of the FARMER, page 29, is a paper on the same subject, read by Mr. Hebron Herr before the Lancaster County Agricultural and Horti- cultural Society at its January meeting, 1882, in which Mr. Herr takes ground similar to that of Mr. Hershey, and nearly all who par- ticipated in the discussion made kindled in sent- ofment with the essay. Of course these papers present mainly theories with such shadows of fact as their experiences have been able to reflect upon the subject, but I think both papers point in the right direction for the cause of the phenomenon, and I am pretty sure that can point no nearer specifically than all has come under my observation on such a complicated subject. The three city dailies of that date all contain Mr. Herr’s paper.

EATING BETWEEN MEALS.

If your children are disposed to be greedy and desire food between meals, reason with them on the subject. A woman who has even a young child can profit by working the stomach, can explain it to her child in such a way that it will make a strong impression upon his mind. To represent to an imaginative child that the stomach is like a man who, when he has eaten his breakfast, goes to work upon that with all his might, and who does not rest till he has ground the food up, and given the good part to the blood, so as to per- mit every part of the body, not forgetting the fingers and toes even, and who rejects all the bad, keeping you from sickness and pain will awaken intense interest in the child to mind and be a great aid to obedience. Put it before him, and ask him if it is not unkind and even cruel to give out another task before he is finished with the first, and that it is best to get rest been given. It will help you greatly in enforcing upon his mind that he must not eat at irregular intervals. A child’s diges- tive organs may very soon cease which is more ruinous to the digestive organs.

We have often been "poo-poo’d" for entertain- ing, and acting, on principles akin to those expressed in the above paragraph, by persons of acknowledged reliability, on all other subjects—persons of no mean moral and intellec- tual standing, either. We were in har-
The Lancaster Farmer.

When oil is heated sufficiently in a closed vessel, from which the air is excluded, it turns to gas, which occupies many times the bulk that the oil did. This is the philosophy of pop-corn and explains its tendency to burst into curious forms on being roasted.

At a meeting of the American Association of Window Glass Manufacturers lately, in Washington, the product of the past year was reported to have been nearly 2,250,000 boxes, valued at about $6,000,000. The demand for consumption has taken the entire product.

The Prefetti of Italy have been instructed to use all their influence to prevent laborers from going out to Panama. There are more men on the isthmus already than can be employed and it is the intention of those in charge of the canal excavation to depend mainly on Chimamen.

Chloral hydrate has proved an efficient antidote in several recently reported cases of severe poisoning by belladonna in England.

Charred corn is one of the best things which can be fed to hens to make them lay not as a regular diet, but in limited quantities each day.

It costs but very little per head to raise sheep. Not only will they pay as farm stock, but as is commonly known, sheep restore fertility to land.

Anybody can have grape vines by cutting them properly. Trim off a portion of the old vine and leave a bud at each end. Stick one end in the ground and it will take root.

Strawberry plants should be set out as early in the season as possible in order to avoid a dry spell. Nothing is so fatal to young plants as lack of moisture after being transplanted.

In breeding fowls, use the Leghorns, Hondans, Black Spanish and Hamburgh—non-setters. For market chicks, the Plymouth Rocks, Brahmas and Cochins should be tried.

These feeding foci shall not lose sight of the fact that wheat ground by the “new process” converts the best part of the bran into flour, and what is left is of but little value as cattle food.

One cow well fed and comfortably cared for will produce quite as much milk and butter as two that are allowed to run at large, lie on the wet ground and be subject to the exposure of the weather.

An application of 100 pounds of nitrate of soda to an acre of wheat, where the crop looks weak, will show its benefit in a few days, not only improving it in growth but largely increasing the yield.

Ensilage is nothing new, as far as preservation is concerned. It is simply keeping green food through the winter by the exclusion of air. It is on the same principle as canning, only on a larger scale.

Onions are the first vegetables that get in the ground. The land should be very rich. They can be grown in the same place every year, as they are very nearly equally proportioned in the constituent elements derived from the soil.

Ahum water is recommended for preventing bugs and worms from infesting flour mills. Dissolve two pounds of alum in three quarts of warm water and supply with a brush to crevices where insects may be concealed.
THE LANCASTER FARMER.

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The disinfecting agents, according to Mr. W. M. Hamlet, are in general those capable of exerting an immediate and powerful oxidizing action, and that it is active oxygen, whether from the action of chlorine, nitric oxide, or hydrogen peroxide, which must be regarded as the greatest known enemy to bacterial life.

Gas-fitters have recently made a most useful application of photography. They photograph the gas flames given by different burners or jets so that a customer can see if the shape and form of a light will suit him before he gives his order. As the flames are more or less, over-depicted "life-size" the purchaser can always tell whether his jet is up to the standard.

It is suggested, with a view of avoiding the bursting of water-pipes by freezing, to make them elliptical in section. As the water expands to form ice, it will alter the shape of the pipe, causing it to become circular in section, and therefore giving more room for the ice. It is proposed to squeeze the pipes into their original shape, when, by a succession of frosts, they have been rounded.

Les Montes reports that M. Buffereau has in the exposed court of his house two bars of iron planted in the earth, to each of which is fixed a conductor of coated wire terminating in a telephonic receiver. He consults the apparatus twice or thrice every day; and it never fails through its indications of electric currents to give notice of the approach of a storm twenty or fifteen hours before it actually arrives.

In Reliman's process for rendering cloth water proof the fabric is passed slowly by machinery through a tank divided into three compartments, the first containing a warm solution of alum, the second a warm solution of lead acerate, and the third pure water, which is constantly renewed. The cloth on passing from the latter is brushed and beaten to remove the salt adhering to the surface, and finally hot-pressed and brushed.

This case sulphate is deposited on the fibres.

Steel tools should never be heated either for forging or tempering, in a fresh fire, unless it be charcoal. If coke is not at hand the fire should be allowed to burn until all the gas is burned out of the coal before the steel is introduced.

Some farmers think that a cow must eat all the time when confined in the stall. It is a poor economy which puts fresh hay into a manger on the day of the old straw. A little losing of the hay left in the manger will dry it and make it seem of renewed niceness to cows or horses.

Occasional sowing of little patches of ground with mustard, green peas, etc., will do much to assist in keeping a cow on a small farm. They grow quickly and the same land will give several crops. A little discretion in this way will save much expense as to keep as well as furnishing early green feed.

Green peas are early crops. Most persons prefer the dwarfs, but the tall varieties yield better. A fault with the dwarfs is that they furnish families growing them with such few pickings. This is because they ripen nearly all at once. The better plan is to put them in the ground at intervals for a succession of crops.

What a Railroad Car Will Hold.

Taking 26,000 pounds as a fair average load the ordinary railroad freight car will hold: Corn, 450 bushels; barley, 400 bushels; oats, 800 bushels; rye, 400 bushels; wheat, 425 bushels; bran, 1,000 bushels; flaxseed, 960 bushels; apples, 360 bushels; potatoes, 480 whiskey, 60 barrels; salt, 70 barrels; flour, 90 barrels; flour, 200 sacks; cattle, 13 head; hogs, 50 head; sheep, 30 head; lamb, wool, 6 cords; soft wood, 7 cords; solid boards, 6,000 feet; shingles, 42,000; hard lumber, 29,000 feet; granulated sugar, 800 barrels; joint scotching and large lumber, 4,000 feet.

ESSAYS.

FRUIT AND VEGETABLES—THEIR CULTURE.

Mr. President:—As we have not once more to have a friendly talk on fruit, its qualities and cultivation, I will give some of my experience. With persons of experience as well as with beginners, it is very difficult to know with what to begin. I know there are kinds in the market and each person thinks he has the best varieties. There is also such a quantity of line fruit brought in for sale as to make it hard for the person to know just what comes from; but, considering the thousands of persons that are in the business the quantity of each kind is not so great after all. There is a great variety of fruit of which we may be sure that the finest quality, for in twenty years experience I found about one tenth per cent of my customers were willing to pay a fair price for fruit; they all preferred it, so the same time a cheaper fruit sold best. It is the common and poor fruit that is the most expensive, but most persons will not believe it.

It is the quality they want, not the quality. Now if we did not have to pay so dear, for our experience, we could afford to sell fine fruit cheaper with a profit, but when one must wait years for the trees to bear and then be disappointed with the fruit, it is poor encouragement. Many persons will sell their fruit for just what they can get while others will wait a year or two years for a good crop and sell it as high as the finest quality can get. In this way with most of the trees I have bought I was often discouraged and thought I was the only one cheated by trees agents, but find thru the years that there have been many others.

Several years ago a nurserman in our town received several hundred trees from a New York firm with most of the labels lost, he sold them as they were. I bought a dozen and grafted all but one (the finest in the lot) and that turned out to be nothing but the poorest kind of a seedling. The worst of it was, there were obsequies; I heard that he was selling them cheap, who bought them all just as he sold them, and when persons asked them for certain trees "O yes, they had them in the nursery," they were to be found in a distant part of the grounds, and customers. I have seen at least fifty of them come into bearing and nearly all worthless. The trouble is we have too many tree agents; all have heard that they will do all at every cost and tell the truth about what they sell; for, as one told me, "that before the trees came into bearing, the labels would be lost, or the price of the tree changed to fit certain kinds where they came from or what they were bought for. I have bought more poor trees than good, but as I said before when the fruit is ripe there is no possibility of telling them. When I have small fruit that does not suit my soil I drop them out of cultivation and keep up with those that do. Out of fifteen or twenty kinds of strawberry I have left all but three, namely: "Charles Downing," "Wilson's Seedling" and the "Sharpless," which beats all I ever had for size, but not for quality. I have also discarded all raspberries but the "Philadelphia," "Clarke" and the old Antwerp. The last two last named went back on me last summer in the ground; at the commencement of the drought or not I cannot say. In regard to currants, I have very few below the Pennsylvania, the出色的 from the southern parts, and the smaller ones, to those of my customers who appreciate good fruit. One of a gentle nature, and not over-running, which is very common on the vines longer than the Concord without dropping. Among apples, the Baldwin, Spitzenberg, Smokehouse Koons, Northern Spy, are the best for winter marketing, as they always sell and give entire satisfaction. I would not advise the keeping of too many varieties as they need considerable attention. As a general rule transplant farmers pay too little attention to their fruit. Instead of studying its nature and trying to improve it, they allow it to take its own way. The apple is too good a business to be put in at a time when ignorance I know not. I frequently see old settlers selling fruit that are quite out of season and would pay the owners much better if they could be forced to wait. It is not a subject that some decaying. In our section last year the apple crop was a failure. Judging from the display at our County Fair, what few trees I have and perdures that there was a surplus of apples and pears one year, the next is very light, for then the trees do not produce the full crop of the year before. We can expect to be the apple, the "year out" as we call it, is their rest; and then the bearing spurs are made for the following year. This you will think is a very poor means of gathering fruit. It is the common and poor fruit that is the most expensive, but most persons will not believe it.

We had no peaches in our neighborhood. Instead of the blossom being frozen, I think the trees were exhausted from overbearing the year before. Having two or three trees exposed to the northern winds and which have two or three years had full blossoms, the blossoms were not frozen. Although we are in the coldest place in the neighborhood, I never saw the peach trees make such a vigorous growth as our peach trees and some years the blossoms had rested from fruit-bearing last year. It is my belief that we will have a plentiful crop this year. If not out of place I would like to recommend our farmer friends to plant trees along the road and at intervals along their line and partition fences. Fruit trees have been suggested, but I would not recommend it. We have many fine orchards that are not respected personal rights to such property and a man would be worried more than the fruit would be worth. Walnut trees, if properly growing could be another matter. A great deal of attention given them at first to start them straight, in six or eight years they will bear, and the nuts will pay for the gathering. In the case of the peach, it is better to have a small orchard, the farm, providing they have been trained to grow straight. I am sure, he that can imagine the best system of training, will start to planting winter; as the nut must be planted in the fall, so that the shell will burst by the action of the frost to give the germ a chance to start. handsome, but of no value. It is the bottom land I would advise the planting of shirland hickory, as it is becoming very scarce, and is good is money. I was told by a farmer in the same neighborhood, who has not been wise, he used on an average two hundred acres of hickory wood a year, and that he bought trees worth ten dollars each; which was not more than they need in the outset. There is one more tree I would like to bring to the notice of
those who do not fancy the walnut. The tall poplar, that fine, majestic tree which naturally towers to the skies and is the adornment of all, especially when in blossom. This is a good article, and its use as a shade and street tree is well known. A planter. Most of our nurserymen have them for sale, from ten to twenty-five dollars per hundred. The larger size are the best to plant, as the young trees may be planted intersex with the poplar, which will make a novel appearance, and provide a chance for observing the difference in the growth and habits of the two species. The poplar but not the forest trees; but as that is not my subject, and I have already trespassed on time, I will hasten on.

In the vegetable kingdom, we do not have so many improvements as in fruit, and therefore there is not so much to say on this subject. We have many varieties of vegetables of all kinds, but not from the county. In Berks county there is a farmer, some very large one, and all extra vegetables they sell, is so much gained; but whether the soil is well suited to the vegetables, or if only their vegetables grow, it matters not how. I do think two-thirds of our market gardens are out of place. In my observation I think that it is necessary for them when brought to our markets are too stale for use, especially those brought from abroad. As a general thing our home gardeners have been quite successful. The fresh vegetables are not sufficiently paid for their labor, as it costs too much to raise them; besides being some weeks later than those brought from a distance. We must also remember that we are in the larger part of the country.

Mr. President.—You have had “Horticulture for Profit,” and discussed the subject in almost every form; as well the bright, and also the “Dark side of Fruit Culture.” But I hope we have at least to an extent realized a little that there are several of our gardeners who have spoken of “Horticulture for Pleasure.” Notwithstanding the trials, disappointments, vexations and discouragments that are common, and that have doubtless some of the charm connected with the occupation, that we all embrace for the love of it, to a greater or lesser extent. How do plants grow, is a query that meets us in the beginning, and is a problem that cannot be solved. The spontaneous action of the plant, the self-determined shapes it assumes, how it develops, is beyond the conception of the most learned botanist. Is it not a direct emanation from the Supreme Will, the fountain of all life? Is it not a manifestation of the life of the seeds, of the plants, of the universe? It springs directly from inorganic matter, and is the first step in the formation of plant life. To see the tender germ as it peeps through the bud in spring, and watch its development from day to day, has fascination for all who have an eye for the beautiful. How many of us pause to think of the trials that await the plants, when we drop the little seeds in the bed, of some of them so diminutive as to be almost invisible? and in a few days a living plant ready to battle with the world? The growth during the long day is a food that the learned and the most ignorant may embrace, and yet be unable to conceive from whence the matter is brought for its development.

I propose, in the few remarks I shall make, to take the “Bright Side of Horticulture.” Did I say “Bright”? I mean “Bright” as related to the fancy man’s garden of the 18th century. We are not to consider the trials of every undertaking, few would launch out into the sea of experiments, and new plants, and new ideas, would be in unison with the old. “Some years” are in part derived from horticulture.

I believe a large proportion of those who plant, do it as much for amusement, comfort, and home adornment, as they do for profit. One of the first requisites of a home are trees and plants to diversify the appearance, and add comfort and attraction to it in a way that cannot be done in another way. How welcome is the shade of a well-formed cherry tree on a hot summer’s day. Then, too, its fruit (if the robins have not eaten it) will render it useful, while the husbandman taries beneath its branches.

Well, I remember the farmer tree-levelling by the harvest hands at the old homestead, under which they took their nooky rest. This was a fine large "Roberts Red Heart" cherry, planted in front of the house, where the family spent many an hour, reading and dispensing a charm to the spot during the whole summer. The planting, training and care of which was all the work of a fond mother, and the only resting in a home that knows no waking.

Then, too, the quick-growing peach, with its bright, luxurious foliage, soon fills a valuable tree, and is a tree that needs filling. Then, too, they might find a few “Cerunio” for the fowls of the yard while they are in search for the early worm, or they might find a few Mediterranean cherry trees with their broad spreading branches inviting comfort in its cooling shade as the yeoman (as well as his stock) pass in their routine to and from the fields. I think the tree is a work of love, and their training to recreate during the hours of leisure, affords an amusement that diverts rather than tires. The cutting out of branches, pruning, etc., is another tree of that is likely to outgrow the rest, and the observation of the habits and growth, will afford food for thought, always pleasing to those having a tendency to quiet the nerves and strengthen the body for the duties of the hour.

And should an occasional crop of cherries, perhaps more than the family could do with, be the fruit of our labor we are doubly paid. First by the attractive appearance given to the home, and the pleasure derived by the coolness and shade of the tree during the hot summer months; and also the deliciously favored fruit with its health-giving properties, contribute wonderfully towards supplying the household with the daily requisites to sustain life.

Mark the busy merchant with his modern suburban home, how he delights in the atmosphere that surrounds him, as he meanders from bush to plant, here and there training a vine or a tree, to suit his cultivated taste, and vary the systemati city of the lawn, and perhaps select a certain spot, to divert his thoughts from the perplexing trials of his business hours; this surely is not a work of necessity nor profit, for those who know will say it is quite a drain on his time and purse, according to the magnitude of the grounds. Such is the fascination connected with the planting and training, that the labor is a pleasure to him, because of its pleasing attractions, and its power to divert rather than tire an overworked brain.

The vicious mechanic, too, has taken the inspiration, and often found during his leisure hours, in beautifying his home with beautiful gifts, the plants of the earth. Who does not know the pleasure, and the profit, of a modestly laid-out yard, with its gorgeous beds of bloom, interspersed with choice shrubs and trees, and the well-kept walks with geraniums, and pinks, and fuchsias—everything furnished by a beautiful border of variegated foliage plants, and not give a praise of gratitude to the Gardener of all good works? I do not speak in a way to affirm there is a charm, an attraction, a fascination in the work of the horticulturist, that will far overbalance the labor connected therewith, and supply a heartfelt recreation to all who will embrace it. The comparison of the wonderful works of nature are sufficient of themselves to awaken thoughts of praise. Instance if you will the stately oak with its spreading
branches, and the erect form of the Lombardy poplar; the weeping willow, with its ever-pendent branches, and the pyramidal form of a sugar maple; the smooth weeping ash, and the black or the white larch; the graceful birch, and the straggling catalpa; the giant form of the common poplar, and the trailing kilmarnock; and yet all these, and a thousand others, have some form common to their kind. The power of the tree to reproduce itself is even more forcibly shown in fruits. Top-graft an apple, and though the various shoots which are set up with ramifications may have leaves on the ends, there are leaves on the tips, each will produce its color: red, yellow and striped, and in flavor its peculiar taste: acid, subacid or sweet, and improve in quality as the season advances.

The floral kingdom has its endless attractions in the various forms of its plants; the beautiful and harmonious blending of foliage and flowers which the garden affords, the nobleman and his servant; the prissily aristocrat and the lowest mendicant; all pause to admire the woodrope productions of the vegetable kingdom.

HORTICULTURAL FERTILIZERS.*

What are Best and Cheapest and How Applied.

When your worthy Secretary referred the above subject to me, I presume it was expected that I should, with a little degree of authority, some special fertilizers especially adapted to our wants as horticulturists. If such was the case, I fear I shall disappoint your expectations. The special fertilizer for each particular crop, is a very plausible and comfortable one—yet in my experience, it is not at all reliable. It is not in experience with our teachers of Agricultural Chemistry, somewhat verifies the old adage, "That a little learning is a dangerous thing," but that a little ignorance, so far as is unwise, may be wise, in the case of farmers following their spurious theory of soil-analysis, as a reliable guide for the selection of fertilizers; and their still later leap, or the jump, as it might be, would be from analysis to a dot upon the chemical analysis of a growing crop or plant! As tillers of the soil, we are greatly indebted to scientists for help in many ways. There are yet many unexplained mysteries in the bosom of mother earth, that defy the wisest of our scientists, and that often mar the practical proof of their fine spawn theories. But we have learned, very accurately, the amount of nitrogen, potash, and phosphate, in the grain and straw of a forty bushel crop of wheat, and with some degree of assurance, and without the aid of any of these ingredients in the soil. But we have seen a difference of 15 or 20 bushels of grain and a ton or so of straw, made by an application of two hundred and fifty pounds of guano per acre—the guano containing only two pounds each of ammonia and phosphat, and distributed through six inches depth of soil. We have learned, therefore, it is very likely wise to give it a thorough trial especially as potash is now not only cheap but easily obtained. The quantity of potash shown a per cent of the wheat, can be bought for about $30, or Kainit, the German dunn salt, showing 30 to 40 per cent, potash, can be bought for $16. Either of these goods is cheap, and the bulk, the bag, can be washed away if needed. I think, sometimes, that the value of ashes is often over estimated, particularly when we judge by the effects of burned brush among the hills and mountains, and the burning of the earth, as from the deposit of ashes. In summing up all I have to say on this subject, I would give this advice, "Stand not on the bosom of the past, nor yet for the future, I am more likely to err "In the breach, than in the compliance." The farmers' orchards and fruit gardens, though highly improved, have to be treated as minor matters, as the good results are made entirely secondary, when the annual distribution of the manure-pile takes place. We seek to exceed from our fruit trees what is not necessary; we thus expect a scantly yield without adequate manure. An attempt to raise successive crops of grain upon the same field without manure, would be deemed the height of foolishness. Yet we seem to expect our apple trees to yield ten or twelve bushels of fruit, from a single tree; and to treat them like grain—and do it too, with very infrequent manuring. I regret my inability to treat this subject in the manner expected, and failing to explain some of the points, I shall conclude, or what, most content myself with commending you to put on plenty of something.

SELECTIONS.

THE NEW WHEAT REGION.

The rapid settlement of the wheat lands of Dakota is perhaps the most striking feature of recent Western development. It is estimated that the farming population of the Territory has been increased nearly 30,000 since the census of 1880 was taken, and the immigration of 1882 promises to be much greater than that of any previous year. A majority of the new comers are no doubt attracted by the profits of wheat-raising. Making due allowance for the enthusiasm of new settlers, and the usual slackness of the returns, it appears from the census returns and from the published statements of farmers that a yield of not less than twenty bushels to the acre can be depended on year after year, and that twenty-five bushels is not an extraordinary crop. The cost of breaking new land is said to average $1.75 an acre, of "backsetten," as the second or spring plowing is called, $1.50; of seeding $2.50; of harvesting $2, and of threshing $1; making $8.75 per acre. After the first year only one plowing is necessary. Some statements place the cost of the grain threshed and ready for market at $9 for each acre's yield. Others give it as low as $6. The difference being nearly due, no doubt, to variations in the price of labor. Taking the highest estimate as a basis for calculation, with wheat at $1 a bushel, the profit of the farmer on each acre of ground cultivated, after all expenses of raising and marketing his crop are paid, cannot well fall below $10 an acre.

The enterprise of railroad companies eager to occupy a field of future profitable business makes transportation facilities in Dakota keep pace with settlement. In the southern part of the Territory the Chicago and North-western and the Chicago, Milwaukee and St. Paul and St. Louis and San Francisco Pacific Railroad, are building branches north and south to widen the area of wheat culture. Thus in most of the new wheat region the farmer finds a station within a few miles of his fields and a freight train ready to handle his grain to market. The work on a wheat farm occupies only a few weeks of the year, and the business is attractive on that account apart from its profits. After the plowing and sowing are finished the farmer can look on and see Nature grow and ripen his crop until the harvest time comes. By the end of August the year*
work is done. Expensive farm buildings are not required, for the grain is threshed in the fields and hauled immediately to the nearest railway station. Very little fencing is needed on a wheat farm. Frequently the cultivated portion is left unclosed, and a barbed wire fence put around the pasture lot to confine the cattle. Thus the outlaw for improvements is comparatively light, and as the country is open and ready for the plow, the new settler makes a crop for the first season, and is tolerably independent from the start. A village, with school, postoffice, stores and churches, springs up as if by magic in the midst of a school of his house, and he suffers few of the privations which used to attend frontier life.

The extent of the new Northwestern wheat region cannot now be estimated, nor its future production foreseen. It appears to include nearly the whole of Dakota east of the Missouri River, and a considerable portion of the western half of the Territory. How far north and west in Manitoba it reaches, will only be determined as settlement advances in that little-known Province. One thing is to be borne in mind about this region—it is the only wheat-growing region in the world continuous. The wheat-growing industry has been steadily moving west for more than half a century. Western New York and Eastern Pennsylvania were once the great wheat sections. Then Ohio had its turn. Now the counties of that State which forty years ago shipped large quantities of wheat to the East do not even raise wheat enough to supply their own population with bread. Afterward Indiana, Southern Michigan, Northern Illinois and Wisconsin made wheat the chief crop, to be succeeded by Iowa, and now by Minnesota, Nebraska and Dakota. The wheat belt cannot move much farther west. It will soon reach the great grassy plains where there is not sufficient rain fall for successful agriculture. Beyond the Rocky Mountains, in Oregon and Washington Territory, a new wheat country of immense extent is being slowly developed, but on the Atlantic side of the continent the area where wheat-farming is the chief industry will not be pushed much beyond the present limits of Dakota. The rich lands in the valley of the Red River of the North and the vast rolling plains of Dakota and Manitoba are evidently destined to be a permanent granary, like Hungary and Southern Russia.

Their product, it is interesting to note, seeks the markets of the world by way of the harbor of New York. A glance at a map will show that the water route from the head of Lake Superior to Buffalo and thence to this city by the Erie canal and the Hudson river is almost a direct line from the new wheat country of Northern Dakota. A short stretch of rail transportation brings the wheat produced on the vast Northwestern plains to cheap water transportation extending to the seaboard. The commerce of New York cannot possibly be decreased, but rather increased and largely by the development of the new wheat region of the Far Northwest.—X. Y. Tribune.

HOT HOW TO DEODORIZE STABLES.

We often wonder why the occupants of large costly dwellings permit stables for horses and the pits adjoining holding the excreta so close to the house, and have hostlers and coachmen to come there, to kitchen and dining-rooms, with rank-smelling person and clothing. When yellow corn, mixed with mill feed is fed to horses generally, or hard-baked old oats given to old horses that cannot duly masticate and consequently fully digest them, the droppings and urine are unusually acid, and will badly scent whatever absorbents are about. All this injurious un-savoriness may be avoided by simple and cheap means. Very dry, waste plaster of Paris, or fine powdered sand plastered on the floors where said droppings generally accumulate, will cover or coat them and preclude the escape of ammonia.

When the bottom and sides of the vaults are dusted, and the ordure nicely leveled therein, then firmed by treading them down with the feet of stablemen standing on a thick board; finally, having a moderate cost of plaster scattered over, as painters sand-coat oiled walls, no effluvia will issue, because the ammonia is bound. On emptying these vaults the contents may be properly 'called muriarit matter unless too much salt hay or long straw, not fully soaked, was casually thrown about there. Then the bottoms being likewise profitably dusted, top and flanks, ere starting, and so further obliterate the ungrateful sight and odor of offal openly passing through the streets. We have read of a prominent livemier in Manchester, England, disinfecting his stables with Douglas' powder, made for that purpose. This did not only prove beneficial to man and beast, precluding sore eyes and coughs, etc., but the vaultings were eagerly bought by truckers, for these got the full value of their money.

The rubbish so generally bought for manuring is almost worthless—hardly worth hauling away. For the substance has largely evaporated, either before or during transit, and more yet, ere said stuff is covered with soil enough to prevent still more exposure. It might be well for the horse-car companies to try this process on a small scale.

UTILIZING ROUGH GROUND.

On many farms there are portions of land that cannot be plowed without great difficulty on account of ravines or stones. They may be needed to grass and need for pasturage, but it is hard to cut the grass that grows on them. This broken land may generally be utilized to excellent advantage by planting it to crops that require considerable room. Grapes do well on rocky and broken land, if sufficient pains are taken to prepare the places where the vines are to stand. Quite a large hole should be excavated and partially filled with manure and loose earth. A rocky soil is ordinarily warm and well drained by the spaces between the stones. Many of the best vineyards in Europe are located on land so broken and rocky that it cannot be made to produce paying crops of grain, grass, or potable waters, where there is so much earth broken on broken land. The vines require considerable space in which to spread their branches. There is some trouble in preparing the hills, but the warm location and good drainage will generally insure large crops that ripen early in the season. Pumpkins, melons and squash may be planted on broken and rocky land to most excellent advantage. As the hills should be about ten feet apart, but little difficulty will be found in making them. Excavations can be made with the spade or pick if necessary, and filled with suitable manure and fine earth. The large space between the hills will require little attention except to remove the weeds, which will not be very troublesome in a poor soil.

If a farmer has large tracts of broken and rocky land he can scarcely do better than to plant it to forest trees, giving a preference to those that will produce nuts.

THE BUILDING OF HOMES.

Double doors—folding or sliding—are a great social institution. By them two rooms may be thrown into one. A good broad hall becomes in summer an extra room. The air circulates. There is a freedom, an openness about the house, which gives an air of superiority to even very humble dwellings. The superiority is real, too. If we invite a few friends for the evening, it is not necessary to confine them to the "parlor," but the doors are opened wide, open, our guests will sit in parlor, and hall, and sitting-room and kitchen, perhaps, and yet all are one company, for the broad doors being open the whole house is thrown together. Music sounds through such a house delightfully, and people have a good time and love to come, because it is so cheerful and social. Another point in our home building which we too often overlook is the exposure of the principal living and sleeping-rooms to the direct influence of the sun. The effect of the sunlight is best gained when the house stands with its corners toward the cardinal points, for thus the sun shines with considerable freshness on all sides every clear day in the summer, and yet its power is broken, because at noonday the rays strike two sides obliquely, and very soon leaves the southeastern side in the shade. We should not forget that the sunshine is health-giving; dampness and shade, if slightly in excess, injure the health of both men and animals.

One thing more is the importance of having some provision for fire in the chambers. We build for health and not for sickness, and I do not hesitate to say that many a family mourns the loss of a member simply because the sleeping-room could not be easily heated.

The best mode of heating is doubt is by an open fire of some kind. It is very easy in building to make open fire-places in at least three chambers through which the chimney passes.

Of course, open fire-places are not economical of fuel, but in the chambers fire is seldom wanted, and stoves may be used, if preferred. As to economy of fuel, builders, as well as architects and proprietors, either frequently overlook one important fact, or they do not look at it, that is, that the warmest part of any room is under the chimney. If we make our rooms ten or eleven feet high we must heat the air in all that upper part before a person sitting at a table begins to feel at all warm, unless he is where he gets radiation from the stove or open fire. Low ceilings effect the greatest economy of fuel, and even make open fires economical as con
THE LANCASTER FARMER.

1882.

WHEN TO CUT GRASS.

The method of curing grass among farmers varies, some drying it more than others. Too much drying impairs the feeding quality of the hay. In curing some put hay into the mow while green in color, but not so green in condition as to heat. This method was deemed the best. One day of curing of grass that had been cut free from dew was ordinarily enough to cure the grass. When or at what stage of growth should grass be cut for hay was a question often discussed. It was generally conceded that early-cut grass made hay of a better quality than that cut late. Early cut fodder was more digestible than late cut, the digestive nutriment being the measure of value. Young plants were richer in protein than later cut, and therefore more nutritious, but no only the quality but the quantity from a given area had to be considered, which complicated the problem. The proteins after the grass blossoms was transferred to forming seeds, the stem, or stalk. As the woody fibre was forming, the protein decreased in both leaves and stalks. The older the plant the less digestible it was. The increase of quantity was at the expense of quality. Seeds were not material, but for practical purposes hay that was fully ripe was little, if any, better than straw. If but one crop had to be cut the cutting ought to be done when the plants begin to bloom. The lecturer then went on to give the results of experiments calculated to show that it was more profitable to cut two or three crops of young grass than one crop of ripe grass; in practice, however, it had to be remembered that the fertility of the soil, the length of the season and the cost of labor were all elements that must enter into the calculation. No general and inflexible rules could be laid down in these matters. Early cut hay was of inferior quality, was late cutting favored quantity. The quality of rye on second crop varied in quality according to the richness of the soil and the time of cutting the first crop. If cut at a comparatively early date of its growth, and properly cured, it is a valuable fodder for milch cows and sheep. It requires more skill and care in curing than the first crop, or it suffers less in quality.

VEGETABLE CONDIMENTS.

The best of all is watercress, and considering how easily it can be grown it seems astonishing how few people raise it, and how few have it on their tables. It can be produced on the best advantage on the banks of a spring, brook, as a supply may then be obtained at little cost. In the time of Columba or Latin in on the banks of a stream of this kind it will be crisp and firm and require no care. It may also be grown on the banks of lakes or of streams of tolerably clear water. Experi-

ments recently made in England show that it can be produced in any garden if pains be taken to apply considerable water to the plants whenever the ground becomes dry from lack of rain. It may be propagated by plants, which are easily transplanted if kept moist, or by planting the seed, which is kept by nearly all large dealers. The flavor of the leaves and stalk is pungent and very agreeable. The plant is promotive of health, and is recommended for curing impurities of the blood. It requires no preparation for the table, and is eaten with the addition of a little butter. The common garden cress, or "pepper grass" which resembles watercress in flavor, but is more pungent, is a desirable condiment early in the spring, when the leaves and stalks are quite tender. Celery is in most respects the favorite of all the vegetable condiments. It requires, however, more skill and care to raise, blanch and store it than most people are willing to bestow. Lately great improvements have been made in its cultivation. It is no longer found necessary to set the plants in deep trenches, which are gradually filled up as the leaves extend. Level culture is now generally adopted and is the most practical method of raising it. The little banking up. Onions may be classed with condiments, although they are generally ranked among food plants. Radishes are very desirable condiments and are very easily produced by any one who has only a very small, amount of land to cultivate. The quicker they are grown the more brittle they are. It is desirable to have a succession of them from early spring till winter. The first crop can be raised in hot-beds. Subsequently a few seeds should be sown every week. They may be dropped a few inches apart in rows when flower and vegetable seeds are planted. The seeds germinate quickly, and the roots are large enough to pull before the other plants attain much size.

TRICHINOSIS.

Few diseases have created more alarm both in this country and in Europe than the one caused by that insinuating parasite, the Trichina Spiralis. Although its ravages were little known, or at all events attracted little attention until comparatively recent period, the people of both hemispheres have taken the alarm, and half the nations of Europe have legislated against the importation of pork which is generally supposed to be the medium of its introduction. How long the "pork worm," as it has been called by way of distinction, has infected the swine of this and other countries will probably never be known. It may have existed for many years, unsuspected and undetected; but a dread of its effects has been aroused which it is to be hoped will not alight upon men shall cease to subject themselves to its insidious attacks, or discover an effectual remedy to overcome its deadly effects.

Up to the present time the trichinia spiralis, we believe, has been found exclusively among the animals used for food, with the exception of one instance in which an attack of trichinosis caused death of a cat. As much as this meat is more or less freely eaten by a large majority of the people this country, it would seem to follow that most persons are liable to be attacked by trichinosis. Fortunately there is an un-
doubted remedy in the hands of every one who chose to avail himself of it. The parasite can exist only in the living animal or in pork while in its raw condition. The flesh of an infected animal will, of course, convey the disease to all who eat it unless the parasite is destroyed. This can be easily and effectually done by first thoroughly boiling it. If this precaution was observed, the disease among the human family would be unknown. It is only when ignorant or thoughtless people indulge in eating raw pork that the insidious enemy finds a lodgment in the human system.

Numerous undoubted cases of this terrible disease have occurred in this country. The investigation of Dr. Belfield and Mr. Atwood show that eight per cent, of all the hogs slaughtered in Chicago were infected with this parasite. This fact shows how important it is that every one should know how to avoid infection. The parasite is exceedingly tenacious of life, often resisting the effects of powerful chemical agents, and the influence of putrefaction. Ordinary smoking or salting of infected meat does not destroy them.

Thorough boiling is the only remedy that has been found at once easy and effectual. Pork may be boiled in a barrel until a hole is nearest the surface, while those in the interior are not escape unharmed. If ordinary precautions are adopted there is no danger, but without them the danger is constant and great. It would be well if some feasible remedy could be discovered for its prevention in the animals themselves, but as this can only be done by a series of precautions which are impossible under ordinary circumstances, our main reliance against contagion must be by thoroughly disinfecting the meat. Most persons are well aware that thorough boiling will prevent any serious results, and cases of trichinosis ought to be excessively rare indeed. Numerous are the reasons for the confidence in this remedy; and while there is no assurance that meat so prepared is absolutely free from all risk, yet the mode of cooking is one that cannot be improved upon, and it is by far the best that can be recommended.

APPLICATION OF LIQUID MANURE.

The comparative advantages of applying fertilizers to land, in liquid form, or after the liquid has been taken up and made solid by absorbers, have not been fully settled by intelligent farmers generally. Liquid manure have the advantage of immediate action when applied; while, on the contrary the solid portions of soils must be first dissolved or washed out, requiring a considerable length of time. On the other hand, liquid manure can only be secured by more perfect and expensive buildings, and the facilities for conveying it to the fields include pumps, tanks and sprinklers. In addition to these, care must be taken to prevent the inconvenience of freezing in winter.

On a large scale, and with complete tanks and appliances, the use of liquids may be attended with less labor in applying than if they were all first absorbed and then drawn out in solid form. With a good pump, and with the tank or tub not much higher than the cistern, the laborer will load a liquid ton, ready for drawing, with less labor than he can throw a solid ton on a wagon with a fork. Through the sprinkler he spreads it with no other labor than driving the wagon across the field, and it is more evenly distributed and finely diffused than by any spreading with the fork and breaking with the harrow—In which it is scarcely equalled by Kemp's spreading cart, with its long pipe, and spreaders the manure with no labor to the driver. This manure spreader is the most perfect contrivance yet brought into use for making manure available by fine pulverization; and next to this is the full spreading of manure and breaking it fine by suitable harrowing—the autumn and winter rains washing out the soluble parts into the soil.

Very few farmers have barns, stables, drains, cisterns, pumps and tanks for drawing, to enable them to use and spread liquid manure advantageously. Most of the stable floors are not water tight, and the liquids leak through and are absorbed by the earth beneath, or are lost. On grain farms, where there is an abundance of straw, enough may be used as litter to hold all or nearly all the liquid, and large quantities of this coarse or straw manure, thrown into a heap and exposed to weather and rains, will not down and may be drawn out in the following autumn. A question becomes, which we will not enter into. This is the investigation—namely, how much gain in the labor of drawing out solid manure is obtained by the spontaneous evaporation of the water of the liquid manure as it lies in such a heap?

When absorbers cannot be had the liquid may be saved by excavating a shallow cistern beneath the stable, making the sides so sloping that the water-line mortar may be spread on the smooth face of the earth. In this way the expense will be moderate. The contents of this cistern are pumped out as needed and drawn to the fields in the watercart. There are many other ways of using liquid manure. If the disintegration is not made with the sharpest and purest sand, and the best water-line, the frost of cold winters will crumble it. The field odor from the liquid may interfere with the maintenance of the pure air which should always exist about every good farmer's buildings. To prevent these two difficulties is a subject for careful investigation, which will be differently answered according to circumstances. A large use of absorbers in the cistern would defeat the attempt to carry off its contents by pumping.

The object of these remarks is to open the question for examination, and to invite the consideration of those who have tried these different modes for securing and applying liquid manure under the most favorable circumstances. The three points to be taken especially into consideration are the comparative advantages of—1. Using the clear liquid with good and suitable appliances; 2. Employing an abundance of straw and other absorbers in the stable; 3. Conveying the liquids by means of light floors and gutters to compost heaps of earth, peat or turf, placed under or near the barn.—Country Gentleman.

EARLY PRICE OF PENNSYLVANIA LANDS.

It is interesting to note the prices at which lands are selling in Pennsylvania to-day, compared with the prices that prevailed at the time of its settlement, and for a century thereafter. From the transfer of the colony to Penn down to 1762, the price was $41.33 per hundred acres, except in the lower counties, where it was only $9.33 per hundred. From 1762 until 1765 it was $24 per hundred. From 1765 to 1766 it was $30.33. From 1767 to 1775 it stood at $22.32. Under the Commonwealth the changes were as follows: From 1774 to 1792 it was $26.063 per hundred acres. In the new purchase, made in 1784, including the north-
western portion of the State, and about one-third of its present area, land was sold from 1783 to 1798 at $80 per hundred acres. From 1799 until 1802 the price was $33.33; from 1802 until 1817 it was $13.33 per all east of the Allegheny river, bought under the 1784 purchase. Lands secured by the Penn heirs under the 1786 purchase, which included the northeastern and southwestern portions of the colony, sold from 1782 until 1814 at $8.66 per hundred acres; these latter lands have been selling since that time at $26.66. Land sales between the terms of the 1786 and to the net of 1786 are sold respectively at $9.66 and $13.33 per hundred acres. Of course the lands still at the disposal of the State are neither very choice nor of great extent. All the vacant and unimproved lands of the State are now sold at $20.66 per hundred acres, except lands lying north and west of the Ohio and Allegheny rivers and the Conewago creek, which are held at $20. It will be seen the extreme range of prices under the proprietary and the commonwealth for 500 acres ran all the way from $33.33 to $206.67, which included the choice lands of the State. We have given to the public since the beginning of May, days, when Lancaster county lands were to be had at a little more than six cents an acre. Three thousand acres could have been purchased then at the cost of a single acre today. What is more, the surveyors didn’t look after the odd perches quite as closely as they do now. William Penn and his heirs not only gave full measure, but threw in six percent. additional “for roads and highways.” The purchasers of real estate in those days certainly got the worth of their money if ever men did.—New Era.

A HOME FRUIT CANNING FACTORY

Among the little-known industries in this country is the fruit-canning factory of Messrs. C. Fell & Son, located at Kirk’s Mills, in Little Britain township. We had a visit from the senior member of the firm recently who gave us some interesting particulars concerning this industry in which he embarked so extensively last year.

The Messers. Fell were induced to go into the canning business because of the large amount of different kinds of fruits and vegetables that went to waste on their own place and also among their neighbors. The idea of utilizing these, and thus saving what would otherwise be lost, led them, in 1881, to begin putting up tomatoes, apples, plums and sweet corn. The result was out of all proportion. They had asked for six or eight thousand bushels of cans of these fruits and vegetables had been prepared for market. They are put up in one and two-pound cans and find a market in this city and in Philadelphia.

Nearly all the articles canned are grown by the Fell & Son, located at Kirk’s Mills, and some of the best being purchased from the farmers in the neighborhood. The tomatoes used were principally the “Beefsteak” and “Raspberry” varieties. These are of the large and “bell” type. The same varieties are grown in almost every part of the State. The difficulty was in procuring a sufficiency of tin cans for their purpose, and most of those used were made in Cecil county, Maryland. During the height of the season several hundred hands were employed in the various processes of canning. The quality of the articles put up at this establishment is first-class, and is more in demand as their excellent qualities, become better known.—New Era.
THE LANCASTERfFARMER.

60
had yielded

garden at the
and he conThey were raised under

for hira in a patch in the

rate of from 350 to 40O bushels per acre

sidered the quality good.

very favorable circumstances, the land being rich

and the cultivation thorough. He believes in planting potatoes in ground previously made rich and
then not to use any manure in the row. He also
exhibited a few ears of hominy corn, this is a white,
flinty,
shallow-grained variety well adapted for
making good hominy but not very productive, seldom
yielding more than 40 bushels per acre.
Josiah Brown asked "which way can we raise
the most corn, by drilling or checkering and planting with the hoe?"
S. L. Gregg said he thought that about as much
corn could be raised in one way as the other he
;

drills in his,
it is

but not because he thinks

it

better but

more convenient.

Montillion

when

Brown

prefers to checker his except

field is hilly, as it is

the

much

keep

easier to

the corn clean.

Joseph P. Griest advocated drilling in rows, four
with two stalks in a hill and the hills
thirty-nins inches apart in the rows. In this way he
feet apart,

had raised seventy

five

bushels per acre.

They

Several others spoke in favor of drilling.
believed they could

weather better

more

raise

corn,

it

stood dry

;

The following questions had been handed
Ist. Would
Brown to be asked at the club

to

M.

it

be

:

advisable in planting a field of corn to run the rows
80 as to render the field liable to

wash

for the

sake

of having the rows run north and south.
S. L. Gregg said he had no faith in the benefits tg
be had from making the rows to run from north to

The

air

would circulate

either

way, and

If

the noonday sun did not shine well along the rows

the morning and evening sun, would which answered

He always runs the rows across and
down the hill. These views seemed to

just as well.

not up and

meet the approbation of all present.
2nd. How far apart should Lima beans be planted
for a field crop ?
Nearly all were in favor of planting them about the same distance apart as corn. Jos.
P. Griest plants his in rows; four feet apart, in
in the row, in this way he
for two hills.
He plants two

one foot apart
pole answer

hills

makes one
beans

in a

hill.

Yocum

"Where

did tlie bean weevil
come from and how can it be prevented from injuring the beans?" No one could tell where the weevils
came from, but James Smedley said he had found
that by heating the beans they could be saved from

asked,

injury.

Emma

King read a selected

article

encouraging

all

who

could to write something for the papers
and maintaining that it is the duty of every person
to try to say or write something tor the instruction
and encouragement of others so that the world may
be the better for their having lived in it.
Mabel A. Haines recited "The Poetry of Housethose

THE

work."

The club having now been in existence twelve
years, Montillion Brown read a history he had prepered of it, noting briefly its rise, progress and
achievements. The first meeting was held at the
residence of William Brown in March, 1870, and two
of the six or seven persons who were pri^sent and effected its organization are still regufar attenders of
its meetings.
During the twelve years of its existence it has lost two of its members by death, whose
memories have been commemorated by appropriate
resolutions.
It held two fairs, at which tbe display
and attendance exceeded the expectations of all who
witnessed them. It has also held a public sale of
stock, etc., at which the sale amounted to many
hundreds of dollars, and last but not least it held a
public meeting in the grove of the Hon. James
Black at the now becoming famous Black Barren
Spring.
After the reading of this several others spoke of
the good effects of the club, dwelling more particularly on its social advantages and of the harmony
that had always characterized its meetings.

LINN.ffiAN SOCIETY.

met

in the hall of the T. M. C. A., crti
The
Saturday afternoon, March 35, 18SJ, when, in the absence of the President and Vice President, Chas. A.

society

Heinitsh was called to the chair. After organization
due form the following donations were reported by
the curators;

in

Museum.
specimens of minerals and metals, namely: mic. ox. iron from Rochester, N. Y., by W. L.
Hershey; asbestos from Wilmington, Delaware, and
mica slate and quartz impregnated with malachite,
from localities unknown, by students of the Lancas-

Four

ways.

Jesse

month.

than when hilled and they could

work close to it.
James .Smedley saW he once planted part of a
field in hills SU feet apart each way and from two
to three stalks in the hill
the rest of the field was
planted iu hills six feet apart one way and two feet
the other with two stalks in the hill, and by the latter plan he raised about one third more corn than by
he former. In each case the corn was worked both

south.

Jesse Tocum, who was attending one of its meetings for the flrst time, said he was much pleusad with
the exercises, but was afraid that the members would
allow it to take the place of small social gatherings
which he considered so essential to the good of
society.
The question, " Should a farmer make a specialty
of one particular kind of business or follow what is
known as mixed husbandry ?'' was adopted for discussion several mouths ago, but as the- days were
short there never seemed to be time for any discussion, and now most of the members had forgotten
what the question was, which made the arguments
come in rather a crude shaoe.
S. L. Gregg said that in this section of the country
it does not seem possible for a farmer to follow raising any one particular ithing; he must raise grain,
hay and keep some stock, but he does not believe it
pays to raise a few beans, a little broomcorn, buckwheat or sorghum to sell, for if he does he will neglect
his regular crops. Several others coincided with this
view of the subject, yet thought that some certain
thing might be made the leading feature of our farming operations, and only such other things raised as
are necessary to the carrying out of the main object
iu view.
Dairying, for instance, might be the principal object in view, and then only sucli grains raised
as furnished straw for beddi[ig, and this could easily
be done as there is in this section a necessity for
breaking up the land occasionally and resetting it
with grass in order to keep up a supply of hay and
pasture.
The next meeting will be held at the residence of
Montillion Brown on the first Saturday iu next

fine

(A number of the students of the
ter High school.
High and Secondary schools are manifesting an active,
working interest in natural science, notably in botany
and mineralogy, and they deserve encouragement.)
specimen of Triton Jeffei'soiiii, by the curators.
This reptile had been kept alive in a globe aquarium
for a period of nine months, and died on the liud of
March, 1882. As the animal belongs to the order
Batrachia, the theory of its death is based upon the
natural change in its organization, rather than upon
its physical surroundings.
During the whole nine
months it had been provided with a pair of external
ciliated gills, and was a water breathing animal, like
the flshes. But the period of its flnal transforma-

A

had arrived, when it cast off its gills and became air-breathing, and as tbe form of the aquarium
prevented it from reaching the surface to inhale the
air, and the oxygen in the water in the tank being ex
hausted, the result was natural. We kiwin now,
however, that in an aquarium these animals may
survive, at least nine months, whatever the case
may be in their normal condition.
Library.
tion

Report of the Chief Signal Office for 1879, 700
pages octavo, with 73 charts and maps. Proceed
ings of the Academy of Natural Sciences, for 1881
Messages and documents, from the Department of
State, for 1881-2.
1 vol. 8vo., pp. 1,000, from Hon.
A. Herr Smith. Congressional Record, two vols., -tto
including
index and appendix, Hon. A.
pp. 4,041,
Herr Smith. Nos.l to9, vol. 21, Official Gazette of
the United States Patent Office. Ten catalogues and
circulars of rare and valuable scientific and historical books.
Three envelopes, and thirty historical
and biographical scraps.

New

Businsss.

E. K. Hershey, of Creswell, Lancaster county,
was proposed for active membership, which, under
the constitutional rule, will receive flnal action at the
next stated meeting.
•"
J. N. Sloan, of Millville, Clarion county. Pa., was
unanimously elected a corresjjonding member.
The next stated meeting will be held at the residence of Dr. Knight, on Thursday evening, April 27,
1^82, being the last Thursday in the month.
It was marked that the evening meetings had not
yet been as proliflc of favorable results as had been anticipated.
It was thought, however, that before the
end of the year it would be demonstrated whether it
would bo best to continue them or not.
The meeting had about the average attendance
during the winter sessions, and although there were
no papers read, and little special business brought
before the society, yet there were a number of visitors present, and on the whole there was a pleasant
time spent in the Museum.

[April,

Entomological.
Swarming Ants and
March,

Allied

Phenomena.

usually a rough, boisterous month, and
therefore it is not usual to flud aiit.'i, or heex, swarming within that month. But, the March of 1882,
"went out like a lamb," and on one of those lamblike
days, near the end of the month, we were
brought a bottled swarm of these busy little insects,
which issued from a small aperture in a pavement
near " Penn Square," in Lancaster city. Males,
females and neuters came forth in great numbers ;
the flrst two, amply provided with wings, and the
last, entirely wingless.
The phenomenon seemed
strange to those who were unaware that ants ever
possessed wings, and hence they were supposed to be
"something new under the sun." Ants, however,
belong to the same natural order that the various
honey-bees do, {Hymenoptera') and have many traits
in their habits that approximate those of our common " hive-bees " {Apia tneUiJlfa) in their domestic^
economies. The colonies are usually founded by a
single fertilized female, or queen, in the spring, who
deposits three kinds of eggs, from which are hatched
male, female, and neuter ants, in time.
We have
often found, during winter, in turning over an old
log of wood, or large flat stone, or ripping the bark
from an old decaying tree, nestled in small cavities,
a large ant sometimes two or more and sometimes a large "hornet," a "wasp" or a "yellowjacket," in a state of torpor, but which would revive
on exposure to the sun, or to artificial heal. These
were the surviving females, or queens, of the previous season, and in their organisms contained all the
elements of successive colonies in and during the following season; exhibiting a wonderful adaptation of
rae^ns to ends in the economy of nature. Under
similar circumstances, specimens of the common
" bumble-bees," or of " wood-borer-bees," are found;
and, before we knew that the " white-head" wasthe
male of the wood-borer, we wondered why those
found in winter had black-heads. This bee (Xylocopa Virglnica) is also found in the winter occupying their galleries of the previous season in wood.
Now, these insects also belong to the Jfymenopterous
order, and bridge over from one summer to another,
with, perhaps, only a very few of the large colonies
of a former season, and those few fertile females,
each of which, will become the queen, or mother, of
a tuture colony; f erpetuating a dynasty that was
founded " in the beginning," and doubtless will continue " until the end."
is

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But the ants, like the honey-bees andbumble-bees'
are " social " or gregarious in their habits, whilst
the wood-borers are " solitary," and all the labor is
performed by the females. Unlike the bees, however, ants are usually wingless until the swarming,
or nuptial season arrives, and the wings are rapidly
developed in the males and females, whilst the
neuters, or workers (whether soldier, servant or
slave) remain apterous, or wingless, throughout
case was reported to the Lintheir entire lives.
na?an Society in 1S81, of ants swarming on a warm
November,
and
we have noticed this phein
day
nomenon in August, September and October. ( TerThose that swarm in August
mite): swarm in May.)

A

would, perhaps, have time enough to mature a
colony before the cold weather sets in, but this could
n(jt be sai<l of those that delay until the month of
November. As soon as they have accomplished the
purposes for which they swarm they east otf their
wings and they do it quickly too when the males
and neuters perish, and the fertile females are preserved to found new colonies in the following spring
and summer; but why they should be swarming in
the month of March, is somewhat aiioinaloiis. It
was much too early in the season for a colony to have
multiplied from a fertilized female of last year, and
hence must have been in active operation all winter,
and this suggestion is based upon the fact that under
the pavement, where the swarming occurred, is
located a furnace and boiler, which generates steampower for a number of printing presses which seems
to imply that ants are more influenced in their activiWe
ties by tetnperature than by signs and seasons.
know that a few warm days, even in mid winter will
develoiTthe foliage and flowers of plants and, if
and this
long continued, will also develop tlie fruit
is also the case when a protracted warm season occurs in autumn, producing what is termed a "second
crop." Now, this may have been a continuous or second
crop of ants, which matured during the winter under
The same phenomethe influence of artificial heat.
non frequently occurs in conservatories or warm
"green-houses," and illustrates that, primarily, insects are of the same habits in their procreative
powers all over the world and that all departures
from the primary habit are the results of temperaof course there may be other conditions more
ture
or less aflecting their development, but the main one
the one accelerating, the other reis heat or cold
tarding their progress. We can hardly name the
species referred to in these remarks, because, before
we could find time to commit them to paper, our
specimens were lost or destroyed, but they seemed to
be the " common brown ant," {Fomica fusca).

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Insects—and especially ants—are said to be capable of communicating with each other by means of the vibrations they excite for them reasoning powers; and yet they, with many other animals, make many mistakes under the influence of the external circumstances in which they are placed. For instance, chickens instinctively head for their roosts at roostime, whether it rains or not, and many a barnyard is left to the mercy of the darkness. For instance, the chickens instinctively head for their roosts at roostime, whether it rains or not, and many a barnyard is left to the mercy of the darkness. The ants under consideration, seems to have been to a similar “fly,” not being able to distinguish between the sound and momentum of the falling snow. The “white cabbage butterfly” (Pieris rapae) is said to evolve from the pupae in the month of February, when the temperature is very low, and that the air being exactly the same as that in the snow, the winter snows were found stored in February, as alive in its summer, notwithstanding the “Ground-hog,” has disappeared. It is said that there would be six weeks of winter weather after “candle-in.” In deed, intelligent human beings themselves, often come to grief when they have no protection afforded by a log and continue winter-without, without the instinctive forewarning, that on the following day there will be a cold front. A certain fog over the land may have acted as a mediator between the layers of air and water, and the ant may have inhaled it. The ant itself was unknown in the land, it was there as the time, and being hungry, they may have been tempted to take advantage of the ant's ignorance.

**Agriculture.**

**Sowing the Seed.**

There is no more prolific source of disappointment and failure among amateur gardeners, says B. M. Ferry, in his seed annual, than haste, carelessness, or improper timing of the sowing of the seed. A seed consists of a minute plant minus the roots, with a sufficient amount of food stowed in around it to sustain it during the germination period, and the period during which the seed is helpless, and not an unnecessary burden to the plant. The seeds of many plants are protected from the absorption of water, and the changing of the plant food from the form of starch to sugar. But it is clear that the seed was exhausted, and not the plant. A seed may not be killed by frost, and when germination has commenced, a check of a day will have no effect. Two or three days, or even a week, will not prevent the seed from growing, but will cause it to turn into a plant.

The natural condition of the soil is necessary for the best results at all stages of growth. The soil must be prepared to give excellent work in this direction and at small cost.

**Ploughing.**

Do not plough land until it is dry enough to be worked, and it is important to know before the farmers have drill much, else there will be hard lumps that will be hard to break, and the crop will be injured. They believed that great mischief has been perpetuated by the theoretical agricultural writers heretofore by advocating the planting of crops of clover and better crops of grain, for their lands improved through clover. Hungarian grass has been very badly injured, and the land has been labor lost by one extra ploughing or two. A thorough examination of the condition of the soil is necessary for the best results at all stages of growth. The soil must be prepared to give excellent work in this direction and at small cost.

**Potatoes.**

It is better to plant potatoes early, then a second crop may be grown on the same land after they are off, either fall furrows, Hungarian grass, or land laid down for fall. Better planting is done in May. A good year for potatoes, with a plan to drill, cover with a plough, then harrow and drag just before they come up. Thorough examination of the condition of the soil is necessary for the best results at all stages of growth. The soil must be prepared to give excellent work in this direction and at small cost.

**Onions.**

It is folly to expect a good crop without the best preparation. The soil must be prepared to give excellent work in this direction and at small cost. They should be sown by the 25th of this month, if the land is in suitable condition. Between three and four pounds of seed is about right per acre.

**Horticulture.**

The Rhubarb Plant.

No garden is complete unless it contains a few plants, and there are few gardens where the walks and sometimes near the fences, when the few are few, are wanting in beauty. Rhubarb is excellent for pies, and when prepared to taste, it is usually ready for pies. It can be put away in jars and preserved for future use. Roots set out this year will produce good-sized stalks next year, and in a few years dressing of well-rotted manure and an occasional covering of compost to keep the soil soft, and will seed will germinate. In such cases our only remedy is to try again.

**Clover and Grasses.**

In all cases where land was laid down to grass last fall, either with winter cover or without, a careful examination should be made to see if there are not perennials winter-killed, and recove with seed such places; the seed will catch and grow without harrowing. Clover seed may be sown early this month at the rate of 100. It will be of the greatest benefit, and the dressing of well-rotted manure and an occasional covering of compost to keep the soil soft, as is usual, will be beneficial. As soon as the seed will germinate. In such cases our only remedy is to try again.

**Clover.**

A. Griffin says there is no substitute for clover, so it is well to get it into good shape this spring. Clover is better in its effect on land than any other forage plant. It is said that a good crop of clover—say such a crop as would fill a large silo—will bring into play. There will be a considerable weight of roots for the farmer is always looking for a weight of clover. I cannot hear a farmer be so entangled as that he would give up the weight of clover for an equal weight of any other plant.

The mulberry trees have been a common feature of the garden for centuries, but little is known of their cultivation. The mulberry trees have been a common feature of the garden for centuries, but little is known of their cultivation. The mulberry is usually the first tree planted in the garden, and each land holder had to plant a certain number. They were hired their trial, but that this culture was not the Wellington increased in raising them. They found the timber very desirable for fuel. It also furnished the finest ma.
An Excellent Old Apple. The Yellow Bellflower—the "Majesty of Fruit"—is surely one of the best known. But the reason given in The Prairie Farmer for its unpopularity in some soils is never mentioned. But the Bellflower is almost most only partially correct. The tree is one of the very hardest, and in rather poor, dry soils it is one of the most productive, and it is a most luxuriant growth of profit, but often fails to bear. The cause of this unfruitfulness is that, in poor or dry soils, it is almost impossible for the roots to obtain water, and it is remarkable in their nursery rows for the great number of roots that it produces. But on the other hand, the Bellflower excels all other trees in its twigs, all the way up. The tree, of course, retains this disposition, with this advantage, it is as luxuriant as the first-class apple at the foot of a hill of rich loam. It is a mountain of root, and its branches are bare only of those leaves that will issue from the fruit spurs on the older wood immediately below. This is using many words and explaining it to the naked eye, but what is Bellflower has such exceptional excellencies as justify the outlay, in the first place, as a soil plant. Many of its branches are bare, and its thickets give them some shade as the rest of the piece. The tree, with its strong horizontal cut out and planted them, and gave them the same care as the rest of the piece. The tree, as is well known, is of great benefit, and like the Yellow Bellflower's branches, is much distributed from the rest, as far as the piece could be seen, and the branches were quite large, and it was a whole piece yielded a splendid crop, as did a piece of Snowflake in another part of the field.

HOUSEHOLD RECIPES.

To Make a Cheap Wash or Paint.—Put half a bushel of good lime in a clean barrel, and add enough water to make a thin whitewash, stirring with a flat stick until every lump is dissolved; then add fifty pounds, whiting, fifty pounds road dust. Then the proper consistency for spreading with a brush, by adding sweetbalm milk from the churn in small quantities at a time, to give a chance for the ingredients to assimilate.

RICE, MILANESE STYLE.—Fry one ounce of butter (cost two cents) light brown; put into it half pound round rice, stir it well, and fry it till it is well cooked and washed, and one ounce of onion, chopped fine; stir in for twenty minutes, then add a pint of grated cheese, and one ounce of pepper; stir in for another twenty minutes or until tender. Drain the macaroni, and put in boiling salt and water, and cook for twenty minutes or until tender. Drain the macaroni, and put in cold water until you are ready to use it. The sauce will be a white sauce with one ounce of flour, one pint of milk, and one-half pound of cheese, together with a little pepper and salt; stir in for about ten minutes. Rich pieces of bread toast brown are an addition.

To Clean Musty Barrels.—A German paper gives the following directions for cleaning rum: "Pour in three quarts of warm water and two ounces of flaxseed meal in barrels and large enough for two barrels; then the rum tree resembles the apple tree in its habit of growth, the Russian apple tree grows about the height of forty to fifty feet, and from three to five feet in diameter. It bears fruit very young, frequently bearing fruit when only three or four years old, and bears every year. Last year the trees were densely loaded with fruit, and it was necessary to cut away several miles of the white for desert. It varies in flavor from sub-acid to sweet; color jet black and reddish white, ninety per cent. of the trees are either red or white, the rest being a mixture of both. The Russian apple tree is called a mulberry, we know in this country, we call it "Russian mulberry." The bark is grayish white, and the wood is hard, and has the tendency to shrivel, its characteristic smell is very strong, and the wood is very aromatic. Many nature lovers make their wood into the silk business since they have been in this country, and have some coconuts for sale.

LIVE STOCK.

Sawdust for Bedding. Many farmers claim that sawdust is not only worthless as a manure, but positively injurious to crops. In some cases it actually rots the manure. But the flavor of it is much improved by being worked into the soil. The delicious flavor of it is much improved by being worked into the soil. It is the best manure, and is known by the farmer, I think it worth the money to get it. But it is because sawdust was used, and many more of these manurial improvements could be made:

An Experiment in Potato Planting. Last spring when planting my Beauty of Heraon potato plants, many farmers recommended planting them in the rows of the green corn. In Yorker, I planted one row through the piece as follows: I took potatoes below the medium size, not over the size of a hen's egg, and planted them and gave them the same care as the rest of the piece. These potatoes were planted cut out and planted them in a hill about eighteen inches apart in the row. Now, in planting the same hill of large potatoes, I planted hills, gave 145 pounds; one row by the side of it, with eighty-six hills, gave 145 pounds—a difference of 120 pounds in the same piece of soil of the same size. Italian potatoes were planted together with potatoes in two rows. This row could be distinguished from the rest as far as the piece could be seen, and the branches were quite large, and it was a whole piece yielded a splendid crop, as did a piece of Snowflake in another part of the field.

To Remove a Mustard Root.—Put one quart of black beans; soak them over night in cold water; drain off the water in the morning and add three parts of fresh water and one part of salt for every five parts of beans; drain off; add salt, pepper and a little clove. While cooking, put in meat, cooked or uncooked, as preferred. When done drain the beans and other ingredients to siliceous pieces in your dish; also add a hard boiled egg cut in slices. Pieces of bread toasted brown are an addition. Salt and pepper well is added. To Clean Musty Barrels.—A German paper gives the following directions for cleaning rum: "Pour in three quarts of warm water and two ounces of flaxseed meal into barrels and large enough for two barrels; then the rum tree resembles the apple tree in its habit of growth, the Russian apple tree grows about the height of forty to fifty feet, and from three to five feet in diameter. It bears fruit very young, frequently bearing fruit when only three or four years old, and bears every year. Last year the trees were densely loaded with fruit, and it was necessary to cut away several miles of the white for desert. It varies in flavor from sub-acid to sweet; color jet black and reddish white, ninety per cent. of the trees are either red or white, the rest being a mixture of both. The Russian apple tree is called a mulberry, we know in this country, we call it "Russian mulberry." The bark is grayish white, and the wood is hard, and has the tendency to shrivel, its characteristic smell is very strong, and the wood is very aromatic. Many nature lovers make their wood into the silk business since they have been in this country, and have some coconuts for sale.

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Finally, salt is destructive to almost all intestinal worms. When the stomach is parasitized, the stock owners have discovered this virtue, and therefore dose their animals twice a year with one pound each of salt. This practice, however, has the advantage of stimulating the appetite of the animals, the food is more easily digested, and a great increase of milk results. This is the reason the farm practises the feeding of salt. Horses are quite as sensitive to this treatment as are cattle, and when the appearance of worms is noted, a medicine is given them to check a daily liberal yet moderate allowance.

Floors for Horse Stables.
The long debated question as to the best material for stable floors is being awakened in this country. A clay floor was adhered to by some for years, and such was the earnest advocacy of its advocates that a number of experiments brought bear upon it that we were induced some time ago to try it. In three or four months we had the same result as the advocates had predicted, namely, that the second floor would be more comfortable, while this movable grating or second floor might lead to accidents. When a person carelessly steps on a grating or second floor, he is liable to get his foot or leg caught, and is at least as safe as the clay floor. It is evident, then, that what one will, holes will be dug by the stamping of the same. If one of the animals will keep it wet, it will freeze a little, and some of the small stones will lie up to the room, and as the Creator has placed round the crown a fringe of hair, which as a protection against the cold, it is right we should use them in the same manner. It is evident, then, that we will be untrue to nature with what we have until something is produced above which there will be no mistake. —German Telegraph.

Charcoal for Sick Animals.
In nine cases out of ten when an animal is sick, the digestion is wrong. Charcoal is the most efficient medicine for such cases. The owned this in the intelligence that one of the finest ingredients of charcoal is very sick, and a kind neighbor proposed the usual drug. I visited the animal and saw that by an address before the Indian Sheep Growers' Association, in speaking of pasturing: There is one species of the sheep which can stand on top of the grass, and which in the rain upon the water proof varnish, he cuts away the hair. Lastly, the Creator having given to the brown food a peculiar characteristic, a sheep, a transparent brown, gray-blue, yellow and black, and less two in horses—the farrier takes a blacking pen and brushes, polishes up the hooves until they look pale brown, and leather, and when he contemplates his work with satisfaction. In his own words, he has "turned out a finished job of it."

Advantages of Small Flocks.
The reason why large flocks of sheep—and the principles apply to all farm stock—are less thrifty than small flocks is that the owner can keep an eye upon an individual. He can question the farmer as to the health of the flock, and if he does not have an idea that the flock is healthy, he is pleased to call it. He has scooped away the sole to "give it spring." He has scored a sharp notch in the heel bone, and the toe bones, to make the foot more flexible. The rule of the time when nails were not used, and the sheep were never looped, or hob-nailed, or pegged, over the edge, one in front and one on either side. Then he has improved the whole of the outer surface of the foot by breaking the hoof, and has formed a part of the part of the hoof with a thin, hard, polished, plate, forming a sort of varnish which is impervious to all, which is more readily of use to the animals than anything else. It makes; it saves all of the liquid manure, makes the manure pile fine and easy to work over; and it is easy to make it. He has tied the sheep upon it to keep it from being heated by consider- able sweat in it; but that can be done on leisure time. His practice was to keep the spring work, and in its best shape for the crops to get the benefit. Green manure from crops that re- served under the snow, or let out of the way, and out of the cart, is not worth one-half as much if properly prepared manure. It is not only that the farmer cannot be satisfied with the grain of manure which he keeps clean, much better milking. You are getting a profit in more ways than one. —Mirror.

Incubation of Animals.
In the June number of the Medical Record, James Law has an exceedingly interesting article on the mitigation of the malignity of disease germs. A disease germ is a very minute organism, generally in the form of a lens, the plague bacillus, and while not containing anything that is new to any one who is perfectly familiar with the form and action of the plague stages, it will be new to the general reader. The plague, as called, is not necessarily a disease of the lungs. But the bacillus is one of the species which is capable of inoculating the disease in the tails. This can be done, too, with the effect of inoculation or vaccination, and the contrary to those habits from the side of the tail. Tails are as certain as if the disease had been developed in the lungs. The professor says that the disease will not only, who are more witty than wise have ridiculed the idea of thus inoculating an animal, but that their nomenclature was at fault, and not the inoculation that it is less infectious, whatever it may be called; has been really produced in the tail, and that the disease is, however, the stage which is called the plague bacillus. The plague is a disease which will develop in any vascular animal. The tail will be in the air, and the animal will not, again have the disease, however much it may be exposed. Tails are inoculated, the severity, of the disease will depend greatly upon the 4th to which the poison is planted. The exudation and swelling of the tail is immediately produced, and the lungs the air passages are closed, preventing a free ingress of oxygen, and it is an uncommon for the disease to be of the same malignity of the plague bacillus. In the body of the animal, besides its enormous liquid effusion in the blood and other parts of the body, the disease is more manifestly small, but does not the same result. The exudation is commonly but successfully performed, by drawing a warm rod, smeared in the exudate, which is passed into the skin of the tail. This is a sleep injection, but the loose texture of the wounded, serves to favor the introduction of the poison, and to counteract any dangerous change in the animal.
POULTRY.

Sunflower Seed for Poultry.

A correspondent, Mrs. M. J. C., Otter, Iowa, gives her experience in raising mammoth Russian sunflower seeds, and advises us to serve them to the stock in two ways. "First," she says, "bake them in the oven, as is usually done for human consumption; but I find it much better to scatter them over the ground or on the manger, and let the hens have them when they please. The latter method is the more economical, and the hens seem to appreciate it."

Grain and Vegetables.

There are none of the cereals raised in this country, says the Poultry World, but have their uses as feed for domestic poultry. And all the root vegetables, such as turnips, potatoes, carrots, beets, rutabagas, etc., when cooked and mixed with meal or bran, half and half, are esteemed economical and useful for stock.

The fattening properties of some grains, and the undeveloped markets for other grains, while so much as it is neither healthful, economical, or useful to stuff these birds with such feed.

Poultry on the Farm.

As a general rule, for the farmer in debt during the winter months, when, with proper care they could be made to pay a handsome profit. The first especial, cut off the head and feet, and draw out the contents, is plenty of egg-producing feed well fed, regular, with a dish of warm water (or warm skim milk is much better), and then set salt at the bottom. If you have it, add a teaspoonful of fine salt to every quart of grain; once a week add a little saltpetre and yellow pepper to every bushel, and they are a very welcome treat for them. For, while warm, just as soon as they come off the roof or can see to eat it.

Poultry Among the Corn.

The Corn. If you want fowl for general purposes take the Leghorns, Hamburghs or Spanish, or some would raisers at Cresco.

These last named breeds are what we call constant layers; but for eggs alone there is no fowl in exist- ence that can be produced to better advantage. More eggs, consume less food, and for early, fast growing spring fliers they will travel any breed. None are able to surpass these for size, weight, or say a little towards the care of fowls. There is no other class of stock on the farm, as a general rule, so easily neglected as fowls. Many farmers neglect this great source of human sustenance in the midst of all their business. But the examples of our readers will hoot at the idea, but it is true there is a great amount of poultry consumed in the United States than there is in England and France. It is not very clean, but the statistics show that such is the case. Little or no consumption of eggs alone: it is almost as great as the quantity of corn or wheat, flour or meat, that is used in their drinking water; the sour from the alum may be of no great value, but it is a wholesome food, and keep them in healthy condition. To make fowls healthy and lay well, a good way is to change Poltions, say soft, in the former part of the year, and whole grain in the evening; and green food is very essential for the health of fowls and also neces- sary for the growth of their feathers. The farmer ought to see to it and have good fowls on his farm, for the first reason it takes no more to feed a chicken than to feed a rabbit, and to sell he won't have one-half the trouble to sell stock that is usually the case with common scratch stuff. A good fowl should have a large head, the farm that will pay more interest on capital in fed fowls. 

The Roup in Fowls.

Poultry is beginning to receive more attention from the farmer in this country, as our stock is more and more vested in that class of stock a much greater profit is derived from than any other. Of all the fowls, the Roup, are the most disease prone. The signs are depression of the wings, running at the nose, sore throat and an occasional sound like "pip." It is harder to cure than cholera, and at least as much more damage than cholera, for the reason that it can be engendered in every yard without the knowledge of the owner.

Roup comes from exposure. A single crack in a fowl house will allow a slight draught that often is with warm water. Let the fowl be warmed and soothed, and keep sick fowls away from those that are well, in nearly all yards where roup appears the cause can be traced to inattention on the part of the breeder, and the farmers of this country of but little importance, claiming that hens and roosters of any breed who make this statement seldom do more than gather a few weeds and turn feed into a brood. Poultry finds quick sale in the markets, and, if the quality is good, high prices are obtained; and as to the other points the farmer is exerting himself to have as many, if not stopped. The best prevenives are warmth, cleanliness, changeable food and good shelter.

THE LANCASTER FARMER. [April, 1882.]

LITERARY AND PERSONAL.

Circular in Reference to Phytium, issued by the U.S. Dept. of Agriculture, 4 pages, with a full page illustration of Pythium rosaceum, with a history of the plant, and ample direc- tions for its cultivation. A subject of unusual interest, salient, and modes of application. If our tobacco growers could be induced to devote a little corner of their fields to these plants, it would give the same care they give to the cultivation of their favorite "weed" plants, they would at the same time be helping to improve the condition of the nation's health, and diminishes the value of their crops.

The Agricultural Epitomist, John A. Woot- boy, an address to the agricultural patrons of the Johnstown, monthly, Watertown, Pa., at 50 cents a year; de- voted to the interest of American farmers. This is valuable to the number of persons who have ever been the number before us (No. 4, April.) It is simply worthy of it. It is a five column folio, about the size of the Farmer's Journal, and contains the most practical original and selected articles, illustrat- ing that "He that filleth the land understandingly shall find joyful all his days," and "without a detailed ex- ecution are inseparable from, and there is not a single article in it that is not worthy of repetition; and, hailings from our own Pennsylvania, they are well adapted to the region of Lancaster county. We hail it as a valuable adjunct to our exchange and list, and have no hesitation in commending it to the favorable consideration of our patrons.
Important to Grocers, Packers, Hucksters, and the General Public.

"OZONE—Purified air, active state of Oxygen."—Webster.

This preservative is not a liquid, pickling, or any of the old and exploded processes, but is simply and purely OZONE, as produced and applied by an entirely new process. Ozone is the antepatic principle of every substance, and possesses the power to preserve animal and vegetable substances from decay. The process is remarkably simple, and is one of the most important discoveries of the age. What we are offering on the face of the earth liable to decay or spoil, which Ozone, the new Preservative, will not preserve for all time in a perfectly fresh and palatable condition.

The value of Ozone as a natural preserver is known to our ablest chemists for years, but, until now, no means of producing it in a practical, inexpensive, and simple manner were discovered.

Recent experiments prove that decay is due to simple water or minute germs, that develop and feed upon animal and vegetable structures. Ozone, applied by the Prentiss method, arrests and destroys these germs at once, and thus preserves. At our office in Cincinnati we can be seen almost every article which can be bought or preserved by this process, and every visitor is welcome in to see, taste, smell, take away with him, and test in every way the merits of Ozone as a preservative. We will also preserve, free of charge, any article that is brought or sent prepared to return it by the sender, or he can keep it.

FRESH MEATS, such as beef, mutton, veal, pork, poultry, game, fish, &c., preserved by this method, are shipped in a vacuum, and transported without loss or change of condition when in excellent condition, and the eggs as fresh as the day they were treated, and will sell as strictly "choice." The advantage in preserving eggs is readily seen; there are seasons when they can be bought for 10 cents a dozen, and in January, as the advance from one hundred to three hundred per cent. One man, with this method, can preserve 5,000 dozen a day.

FRUITS may be preserved in their active climate, and can be transported in any part of the world.

The juice expressed from fruits can be held for an indefinite period without fermentation—hence the great value of this process for producing a temperate product.

Eggs, in the vacuum, for a month or two months, can be kept in any part of the United States, and when delivered, preserved, in their original packages at a small expense.

BUTTER, after being treated by this process, will not become rancid.

Dead human bodies, treated before decomposition sets in, can be preserved in a natural condition for weeks, without putting on the skin or molding the body in any way. Hence the great value of Ozone to undertakers.

There is no change in the slightest particular in the appearance of any article thus preserved, and no trace of any foreign odor or vegetable.

The process is so simple that a child can operate as well as and as successfully as a man. There is no expensive apparatus or machinery required.

A room filled with different articles, such as eggs, meat, fish, etc., can be treated at one time, without additional expense or expense.

As In fact, there is nothing that Ozone will not preserve. Think of everything you can that is grown, raised, and made and preserved in the United States. If you can prevent decay, you can preserve.

The condition you want it for any length of time. If you will remember this it will save asking questions as to whether or not a thing can be preserved. Ozone does not destroy, but prevents decay from taking place to the article treated.

There is not a township in the United States in which a live man cannot make any amount of money, from $1,000 to $1,000 a year, that he possesses. We desire to get a live man into every county in the United States, in whose hands we can place this Preservative, and through him secure the business which every county ought to produce.

A FORTUNE Awaits Any Man Who Secures Control of OZONE in any Township or County.

A, P. Cozen, Marion, Ohio, has cleared $2,000 in two months. $2 for a test package was his first investment.

Wood's Brothers, Lebanon, Warren County, Ohio, made $6,000 on eggs purchased in August and sold November 2 for a test package.

R. B. Raymond, Missoula, Montana, has cleared $1,000 in one year, $1,000 a month.

P. K. Reymond, Briar, Belmont Co., Ohio, is clearing $2,000 a month in handling and selling Ozone. $2 for a test package was his first investment.

E. Wehiter, Charlotte, Eaton Co., Mich., has cleared $1,000 a month since August. $2 for a test package was his first investment.

J. B. Gloyd, 39 La Salle St., Chicago, is preserving eggs, fruit, etc., for the commission men of Chicago, charging $10 a dozen for eggs, and other articles in proportion. He is in business making $1,000 a month clear. $2 for a test package was his first investment.

We are offering a special offer to Cincinnati, making $100 a week, and interest on clearing houses, and preserving mailing and shipping 4 cents to all parts of the country. Shipment unreserved hours in 24 hours. Preserved by Ozone it keeps perfectly for every month.

These are instances which we have asked in the privilege of publishing. There are scores of others. Write to any of the above parties and get the evidence direct.

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A test package of Ozone, containing a sufficient quantity to preserve one thousand dozen eggs, or other articles in proportion, will be sent to any applicant on receipt of $2. This package will enable the applicant to pursue any business of his own, and to the extraordinary merits of Ozone as a technique by which he may make a fortune for him to live and give it to good purposes. We will give every assistance to all who are真心 to the general public, or make a fortune for himself.

The man who secures control of Ozone for any special territory, will enjoy a monopoly which will surely enrich him.

Don't let a day pass until you have ordered a Test Package, and if you desire to secure an exclusive privilege we advise you that delay may deprive you of it, for this business is rapidly taking root in many counties.
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All communications in regard to the editorial management should be addressed to Dr. S. S. Rathvon, Lancaster, Pa., and all business letters in regard to subscriptions and advertising should be addressed to the publisher. Rates of advertising can be had on application at the office.

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Marblehead, Mass.

Nov.-19-

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[April 1882.

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THE LANCASTER FARMER.

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Train Leaves the Depot in this City, as follows:

WE TWYR:
Pacific Express*.............
Way Express*.............
Niagara Express.............
Harborville.............
Hanover Accommodation.............
Mail train via Mt. Joy.............
No. 2 via Columbus.............
Sunday Mail.............
Fast Line*.............
Frederick Accommodation.............
Harrisburg Accommodation.............
Pittsburgh Express.............
Cincinnati Express.............

Eastward:
Lancaster.............
Cincinnati Express.............
Fast Line*.............
Harrisburg Express.............
Columbus Accommodation.............
Pacific Express.............
Sunday Mail.............
Johnstown Express.............
Day Express.............
Harrisburg Accommodation.............
The Hanover Accommodation, west, connects at Lancaster
with Niagara Express, east, at 2:25 a.m., and will run
through to Hanover.
The Frederick Accommodation, west, connects Lancaster
with Fast Line, west, at 10 p.m., and runs to Frederick.
The Pacific Express, east, on Sunday, when flagged, will
stop at Middleott, Elizabethtown, Mount Joy and Landis-
ville.

*The only train which runs daily.

(One daily, except Monday.)
The Lancaster Farmer.

Dr. S. S. BATHYON, Editor.

LANCASTER, PA., MAY 8, 1882.

Vol. IV, No. 5.

EDITORIAL.

PYRETHRUM.

The present number of the Farmer we devote largely to the reproduction of the circular issued by the Department of Agriculture, on the history, cultivation, preparation, use, and modes of application of Pyrethrum, as an insecticide; and we ask for it the respectful and thoughtful perusal of our patrons and readers; and not only a perusal of the paper, but also an intelligent and determined effort to cultivate—it—the same intelligence and determination that is evidenced in the cultivation of tobacco, or any other plant possessing intrinsic value. In view of the bare possibility of an efflux of noxious insects at any time, without any forewarning whatever, it benefits the cultivators of the soil to know how to produce, prepare, and apply a simple antide to the invasion and destruction of their crops by these pests and other noxious animals. Nothing seems more certain than that the higher the state of vegetable cultivation, the more liable it is to the destructive attacks of noxious insects, and therefore the base and antide should occupy parallel lines in the routine of agricultural production. A man or woman that can successfully cultivate the "common Aster," as an ornamental plant, may be equally successful in the cultivation of Pyrethrum, as a useful plant. Noxious insects are animals that we may expect to have to deal with as long as a single blade of grass is grown upon this earth, and it seems to lack wisdom even to expect this total extinction, or to ever desire it. They certainly must be of some use or their existence would never have been permitted; but there is no use that may not be perverted, or be transmuted into abuse. Hence, against a redundancy of noxious insects, the providential farmer should always be forearmed, or forewarning would be of very little avail. The Agricultural Department has distributed a limited amount of the seeds of Pyrethrum, but they can now also be obtained at many of the seed-stores—especially those in the larger towns and cities.

We thankfully acknowledge the receipt of three papers of Pyrethrum seeds from the Department, one of which, (P. cincinerarlo- linum, from Transucana), we have placed in the hands of Mr. John Zimmerman, and another (P. pyrethrum penn. grown in America), in the hands of Mr. George Hendrie, who propose to make a practical test of their cultivation in this locality. The third paper (P. cincinerarlof linum, from California), we propose to test on our own premises, unless we feel convinced that it would be better to place it in other hands. The celebrated "Persian Insect Powder," which has been on the market for a dozen years or more, and which is represented to be "sudden death" to "bed bugs, rats and raccoons," is nothing more nor less than the pulverized flowers of a plant of the composite order, and is allied to Pyrethrum, if it does not belong to the same genus. Some years ago, a vegetable powder called "Bu- bach," or C. N. Milor's California Universal Insect Exterminator, was brought out and widely distributed, but we have not been heard of nothing of it, pro or con, since its first introduction, either in an agricultural or an entomological journal, and we somehow came to the conclusion that it proved valueless for the purpose proposed.

The provident and foreseeing farmer is perfectly cognizant of the fact that a routine of domestic obligations annually devolves upon him, which cannot possibly be evaded or ignored, and hence he habitually makes ample provision for them. He requires a sufficient quantity of seed, of fuel, of clothing, of shelter, and the usual concomitants of civilization, not only for his individual self, but for all that is subordinate to his social and domestic rule. And these things he provides understandingly, methodically and continuously, because he knows that both he and his will stand in need of them as long as life remains. They are not regarded as mere incidental, or probabilities, or guess-work, but as things inevitable, and that cannot be compromised. Let him in addition to these, make provision for the continued destruction of noxious insects, for, depend upon it, like the "poor," we shall "always have them with us."

THE KITCHEN GARDEN FOR MAY.

"In the Middle States, during the past month, some of the hardier vegetables will have been sown, but perhaps not as freely as in former years, spring having been unusually, and continuously cold; but by the middle of the present month, all will probably have been put in; hence the labor will now mainly consist in transplanting, thinning, weeding, hoisting, etc. The following alphabetical directions will serve as a reminder to the unpractised gardener as well as to the directions for April. Beets, Bush, plant for succession: Litus, Carolina and other "pole-beast" may now be planted. Beets, long sow; Cabbage, plant, sow seed, if not done last month. Celery, long orange, sow. Cauliflower, in frames, remove glasses, Celery, weed, Crops which have failed when first sown, repeat sowings. Corn, Early France. Lettuce, large cabbages and Indian Dutch Butter, sow in drills to stand; thin out if too thick. Melons plant; the best is Lanthorn's Boss—see note below. Peas, thin out, if ready. Beans destroy as they appear, and hoe and otherwise cultivate the advancing crops; it is needless to particularize each duty. Where the interest and taste lead to gardening, directions for every operation are necessary to but few. Is it not, however, discreet, to the character of many farmers that till their own land, and have small cultivated gardens, that none but the simplest vegetables may be found upon their tables, and in too many instances that scanty supply is the only one."

We have in former issues of the Rural Register recommended a Farmer's Kitchen Garden, where nearly all the preparation of the land may be done by horse power, and that most ample supplies of vegetables be obtained at all seasons, without labor hand or occupation of time, which may not be readily spared from farm duties, and the women of the household relieved from tending to supply household wants."—Lanthorn's Rural Reg.

In this connection it may not be inappropriate to point out a new Water-melon of rare quality which has been originated by the Lanthorn and named the "Boss," which possesses qualities calculated to make it more popular than that term has become in the political world. When "Bossism" is founded upon real merit, there certainly can be no valid objection to its universal prevalence.

The special merits of this melon are the following: Early, large in size, bong in shape, plain, and very heavy. Rind thin but very tough, dark green in color, slightly ribbed, showy in appearance. Flesh more highly colored than any other melon in existence, crystalline or granulated, melting, of unusually fine flavor, and extending within an inch of the skin. A variety certainly valuable either for shipping or home consumption." It is confidently recommended as the best melon in the market, by those who know all the arts of this luscsous and refreshing fruit.

Of course, it might be deemed more appropriate to discuss the subject of Water-melons in the months of July and August; but, as they are not a spontaneous production we cannot begin in March," and that beginning would be too late in those districts, as: for, from seed to matured fruit there is a pretty long "sleep between cup and lip" in the development of the melon, as well as in other subjects of the vegetable kingdom.

GAPES vs. ENTOMOLOGY.

With all their knowledge of insect life, the entomologists have not yet solved the problem of gapes in chickens. A worm in the wind is the cause, but how it gets there, and where it lives during the season before and after it attacks the chicken, is unknown. In some localities it never appears, and elsewhere it is an annual pest, or nearly.

It is very easy to write an item like the foregoing, which we find in a column of the Weekly Press; and it would have been quite as appropriate to the subject to have said, "with all their knowledge of insect life, entomologists have not yet solved the problems of—" "What's blacker than a crow?"

"Gapes in chickens," is not an entomological question, any more than tapecorns in human beings is, or mussels in pork is; although, an entomologist might happen to know about it as much as anybody else, or less about it than anybody else, without adding to, or detracting from the standing of the ento- mologist. An entomologist is such, not because he makes a special claim to that title himself so much, as because it is accorded to him through the courtesy of by others, on account of his specialty in natural history. But, in this sense, be legitimately entitled to the designation of entomologist, without knowing anything about any other branch of natural science. Entomology, as a whole, or as a unit, embraces more subjects, and a greater
variety in detail, than all other branches of natural history put together; hence, those most thorough in it—those who have made the most valuable contributions to its literature, are specialists, and never aspire to anything more; nevertheless, they are still Ento- mologists; that is, those who make the study of trees, or shrubbery, flowering plants, lichens, mosses, or fungi their specialties. Scientific specialization is not as common in the United States as it is in Europe, where, amongst her entomologists are to be found many who are, or who have been Coleopterists, Orthopterists, Hemipterists, Lepidopterists, Neuropterists, Hymenopterists, Dipterists, &c., and who aspire to nothing beyond these specialties; although, in the pursuit of any of these branches, it would be next to impossible not to know something about collateral branches—indeed, even in the United States, we have many who devote themselves almost exclusively to special branches in entomology, and have distinguished themselves therein.

But considered from a practical standpoint, and as it stands related to the agricultural and domestic productions of the human family, as well as to the animal world in general; entomology and entomologists have had an immense responsibility thrust upon them, much of which they cannot know anything more about—and it is not their business to know it; they have not the time within the limits of their lives to study the habits and properties of the people of equal intelligence; and through this promiscuous demand upon their scientific energies, their special studies are invaded or dissipated, and hence they are liable to become "Jacks of all trades, and masters of none." Even a specialist may know absolutely more about what many things are not in his specialty, than what they really are; and his humble confession to that effect may indicate an infinitely greater advance in scientific lore than an empty pretension to know all about things of which he may be profoundly ignorant. Any man, no matter how expert in any line of work, may be called upon at any time to propound a problem or a question that the most intelligent or profound scientist cannot satisfactorily answer—at least not to the satisfaction of the ignorant propounder—but that does not prove the former a philosopher, nor the latter a knave. A mechanic may be able to construct the most complicated philosophical instrument, and yet be totally unable to make a shoe or a coat.

How long has it been since the sciences of medicine, of anatomy, of surgery and of physiology have been introduced to the study of professional specialists? How many paid professors have been dispensing scientific lore? How many magnificent temples for their accommodation have been erected in different parts of the world? And how many pecuniary endowments have been bestowed upon them in order to facilitate their progress and their usefulness; and yet, how many cases occur in the line of science about which its students and its professors appear to know absolutely nothing; seemingly just to illustrate how little is known about the branches they profess to study and to teach. and that men must be ever learning "a knowledge of the truth." The pursuit of any branch of natural science is something like exploring a piece of land which sinks into the earth, and bubbles up again at a more or less remote distance from where its traces have been lost.

The explorer may learn much, or all, of that part of it which comes under his immediate observation, but of that part of it which has sunk into the bowels of the earth—except theoretically—he may be profoundly ignorant. In like manner, the transformations and developmental processes of some animals are involved in conjecture, and amongst these are included the "gapes," the "hair-worms," and their coenogeners which are only known so far as their development has come under human observation. Observation, cannot draw an exact focus upon that which is under ground—which must be left mainly to theory, analogy or conjecture, for solution. The case is similar in the history of the "gapes" and its coenogeners. There is "here and there" an out-cropping—as it were—in the development of these animals, and the unseen is "analyzed" from that which is seen. True, it is of paramount importance that it should be known how the strange or gapes, get into the trachee, or windpipes, of the fowls, or why it is necessary for them to come into play during the season before and after they attack the chickens, although, it does not seem essential that the entomologist should know this as a qualification necessary to the successful pursuit of his specialty in natural science; and yet, he may occasionally have illustrations or something analogous to it in insect physiology. For instance, it has been demonstrated by those who are reputed to be competent authorities, that, like the spores of fungi, or the sporific germus of epizooty, the embryo of gapes may be in the soil, in the food, or in the water to which fowls have access; and consequently, if water is not boiled or properly distributed for an indefinite period, even after they are perfectly dried; and also that they are perpetuated by carelessly throwing them aside, without first killing them, after they have been dislodged from the windpipes of the infected fowls.

But, the following, which we clip from the columns of a cotemporary, seems to deny that the gapes are animal organisms at all, which would remove them still farther from the category of entomology.

Gapes and Chicken Cholera.

The season is at hand when young chickens require attention, and a word on the subject may be read with some interest. It is an old saying that an ounce of prevention is better than a pound of cure, and the rule is eminently good in the case of fowls. One of the most necessary things to prevent gapes is to keep them dry and well protected from the chilly rains of spring; as this disease is a very common one among young chickens grown in the cold winters, and it comes on very suddenly in children, when a false membrane forms in the windpipe and proves fatal in nearly all cases. This is usually caused by a neglected cold, and it is so with the young chickens; hence the necessity of keeping them dry and warm during the wet days common in spring. The membrane formed in the chicken and usually supposed to be a red worm, can be removed by folding a horseshoe and forcing the loop down the windpipe, and a sudden pull will bring it out. I have seen a strong pinch of the windpipe loosen it, and the chicken cough it up; but all often fail to save the life of the chicken.

Formerly I lost many chickens in the spring, but for years, since learning the preventive measure of keeping them dry and warm during the cold, damp weather, I have not seen a chicken with the gapes.

The following remedy and preventive of chicken cholera is highly recommended as a sure cure when the chicken is taken with choleratype of potash, of each 10 grams. Mix in one powder and dissolve in water enough to fill a quirt of feed. This will be enough for two pigeons, one chicken, to be given several times during the spring.

And this:

Gapes.

Gapes in chicks are caused by the presence of minute worms in the windpipe, and when there are many, as often happens in cases, the chicks die of suffocation. I don't know how the worms get there, and it doesn't matter much; the main idea is to prevent them from getting there. In the whole list of chicken ailments there is no disease more easily prevented or cured than gapes. To prevent them feed cyanme pepper and sulphur with their fowls three to four times a week, and use the "Douglass mixture" in the drinking water three times a week.

Gapes may be cured by giving a piece of charcoal to one of them until the chick seems well. Sometimes two or three liberal doses of pepper will effect a cure. If the chicks are very bad fumigate with pure sulphur fumes in a tight and solution of carbolic acid and water; sixty drops of water to one drop of acid forms the solution. Don't hold the chicks directly over the fumes of burning sulphur, and don't fumigate too long, or the remedy may prove worse than the disease. Let the chicks inhale the fumes for two or three minutes, and in most cases that will come out sufficient to effect a cure.—Prairie Farmer.

And this:

Gapes.

Chicks most subject to gapes are those that run wild, for the reason that they understand now that gapes are caused by small worms in the windpipe. These can be removed by the use of a fine horse hair twisted together and passed down into the windpipe; after turning around will remove the worms or kill them. But one must be dexterous and practiced to do this. A small feather is perhaps better. Leave only the tip, which will be about half of a gram and twenty drops carbolic acid. Twist it quickly in the windpipe, withdraw and repeat. You will see the worms come out; a little in each time is sufficient to effect a cure.—Prairie Farmer.

Here are two good gape remedies. Give the chick a piece of camphor the size of a pea. The fumes will kill the little worms. Camphor in small quantities is known to be a good medicine. Another good remedy is spirits of turpentine; dose five to ten drops at a time. Either of these two remedies will do. If not, increase the dose of camphor; then pour the same into the windpipe. Change the chicks to high, dry ground and put camphor in the water, and it will save the rest of the flock. No MAJESTIC farmer and farmer Will.

And, if more is desired on the subject, we would respectfully refer the reader to volume 13, No. 6 (June 1851), of the Lancast- er Farmer, where he may find eight columns on the subject of the "gapes" in fowls (Strongyulus Synaplanus), and its corrolates, discussed at large. To those of our readers who do not subscribe for the Farmer, we would respectfully suggest that they make immediate application to the publisher, perhaps they may be able to procure that number; and if
not, they most probably could procure the whole volume.

From the advanced condition of Gallia-
culture, and the intelligent minds now engag-
ed in its development, the gapes is a subject
that is clearly within that specialty; and
from the wonderful progress made therein
during the last ten years, or twenty years, we
would naturally suppose that something
should have been elicited in solution of this
knotty problem. There is where the light
must come from, and not from entomology,
necessarily, which, scientifically restricted,
operates entirely within a different sphere.

A NEW HISTORY OF LANCASTER COUNTY.

It has often been said—and with some show
of truth—that “the history of Lancaster
County has not yet been written.” It may not
be generally known to our readers that H. L.
Exerts, an experienced publisher of Philadel-
phia, has engaged the services of several com-
petent citizens within our county as assistants
in collecting and elaborating authenticated
material towards the production of a new
history; and, from the following synopsis of
the portion alloted to Simon P. Eby, Esq., so
far as the matter relates to the farm, the
farmer, and farming, it has fallen into com-
petent hands, and the reading public may
reasonably expect to realize their most san-
guine anticipations. If any one is in posse-
ion of important facts bearing upon the sub-
jects embraced in the outline suggested by
Mr. Eby, they ought, whether he be or not,
be very much desired. Let him see if he has
occasion to use them or not.

1. The condition of the county when the
first settlers arrived.—Its agricultural res-
ouces, soil, climate, timber, stone and water
supply. A brief notice of some of the prin-
cipal natural productions then found, and the
Indian farming, Wm. Penn’s opinion respect-
ing our native fruits.

2. The first settlers and their early farm-
ing. A brief history of their lives as they were and where they came, the different nationalities and their
characteristics, combative and non-combat-
tant elements, a brief notice of some of the
stories and traits of these representatives
they brought with them from their mother
country and fatherland.

3. How they began the work of establishing
new homes, in a new country.—Some of the
trials and difficulties they encountered and the
encouragements and successes they met with,
brief notice of their primitive log houses
and thatched barns how they had to depend
for hay on watered meadows, their early
improvements of handicraft.

4. Secondary stage of farming.—Introduc-
tion of grain farming, cultivation of corn, timothy,
new fertilizers, rotation of crops and improve-
ments in farming improvements. How log
houses became general, and some of the hand
mauls or masons with massive chisels and wide
open faucets, that welcomed newly arrived
kinsfolk from across the Atlantic to the
waving boughs, and the soft lullaby of the
newcomers loolh helping hands. Saw-mills at
work along the streams, converting the forest
trees into more convenient building materials.
Swiss farmers (immigrants from the Swiss
by the Swiss Palatinate) now receive liberal
borders; or, new-square-timbered structures
of increased capacity; go up in more suitable
places, are more elaborated and delightful
musically made upon the newly laid barn floors.
How the axe continued to extend the fields
every year further into the timberlands. How
flax and hemp were grown and dressed by the
farmer and his assistants, and the fleece of the
docks prepared for the loom. How, dur-
ning the winter, spinning wheels held high
carnival in concert with the blazing logs upon
the hearth within, and the roar of the tem-
pest without. The women of the household
fingers of matron and maidens plied the busy
spindles, and chests and presses were filled
with homemade linens and gowns. And
when some of the farmers returned from
procession with a newly-married pair riding
at its head, and loaded wagons and lowing
cattle following, issued from the parent
farm by the way and with the same sound of
wheels down beside some pleasant fountain and begin
the cutting out of a new home and fortune.

5. Glimpses into the home life of the good
old farmers, and the proud heritage of their
trade and industry. Their struggle
against pride, extravagance and ungodliness,
How they raised and educated their children.
How they lived during their time—diet,
dress, courtships, marriages and amusements.
Old-time company of young men and maidens
on horseback; apples and cider; markets and
marketing. Consecrating these elements
with the peculiar non-combatant doctrine of
many of the people held and practiced. Their
stead-fastness to the faith and the distinct
commandment not to draw the sword. How
they were allowed to live in peace while three
wars swept over other parts of the land. Their
insignificant means of entertaining their
people, especially on occasions of rejoicing
and holding of funerals; their dialect. Is
Pennsylvania German? a distinct language?

6. Tertiary stage of farms and farming.—The
advancing wave of modern improvements
and invention, introduction of new cereals
and vegetables, labor-saving implements
and farming machinery, sub-division of the
old farms and a more thorough system of tillage.
The application of line to the soil, waste land
brought under cultivation, introduction of
coal for fuel, railroads built, different views.
Now entering upon the study of agriculture,
cutting away of timber and disappearance
of many of our native birds, consequent increase
of destructive insects, partial failure of the
fruit crops and the growth of the practice of
farmers to supply the deiciency by experiments
in the preparation and introduction of native
varieties and improved small fruits, the theory
of liming and the introduction of lime, and
the cultivation of native fruits, adopted after
a lapse of nearly two centuries, change of cli-
mate and gradual diminution of the water
supply. How thorough the new system of liming
and lime, and the employment of lime, its
extensive adoption, prominent in the advance-
ment of wealth, growing dislike of the
young for manual labor, farms passing into
the care of renters and the owners drifting
to towns and villages; luxury, refinement and
the decline of farm furnishers, increase of ex-
hibitive habits.

7. Are we getting better or worse? Shall
we disregard the experience of the past, or
the present, or both? Where are we from the
coming farmer?—who and what shall he be?

LIME IN SOIL.

Every farmer, on the basis of on his fields,
should first ascertain whether the soil needs
lime. Until he knows this, his liming is
being done at random, and may be a positive injury
instead of benefit. Doctor San Grado, in his
“consultations” with his pupil (Gil Blas)
always prescribed “more blood-lettting and
additional droptons of worm water”—without
regard to previous treatment or condition—
and an alteration which the undertakers and marble
masons flourished, but the poor patients
died. Analogous are the results of liming
where the soil already contains; a sufficient
quantity. Such applications may be bene-
ficial to the limelumber, but they are deter-
mental to the health of the plants. True, a
farmer may not have a chemical laboratory
of his own, nor, if there be one, but still, for a
limited extent, he may be able to test his
soil as to the presence of lime in it, although
he may not be always able to determine the
quantity or quality. A simple analysis can be
made by mixing a small quantity of soil in
a cup with water, and pouring over it some
muriatic acid, which he can obtain at
any drug store. If a free effervescence, like fer-
menting cider, or frothing beer takes place, it
indicates the presence of lime. But if it
remains perfectly still and dead, it contains no
lime, or at least not sufficient to produce any
beneficial effect on vegetation, and in such a
case lime should be applied in some form or
other. Take a piece of common limestone and
drop on it a little muriatic acid, and you
and immediately see the boiling or fermenting
effect of effervescence. The freer it efferv-
vesces the purer the limestone is. If this
result does not follow, it would be useless to
waste fuel and labor in attempting to “burn”
such limestone.

Sulphate of lime or plaster-of-aris, exer-
ces additional beneficial action on soil, by its
subphoric acid stimulating vegetation and
assisting in the decomposition of mineral and
organic matter. Plants require lime in the fol-
loving proportion to one thousand pounds:

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<tbody>
<tr>
<td>Barley</td>
<td>1.1-7 1/2</td>
<td>Barley, straw</td>
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<tr>
<td>Barley</td>
<td>1.4-3.1</td>
<td>Spring wheat, straw</td>
</tr>
<tr>
<td>Wheat</td>
<td>2.3-2.4</td>
<td>Winter wheat</td>
</tr>
<tr>
<td>Rye straw</td>
<td>3.5-1.1</td>
<td>Cornstalk and fodder</td>
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<tr>
<td>Pea straw</td>
<td>4.5-2.5</td>
<td>Bean straw</td>
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<tr>
<td>Bean straw</td>
<td>6.1-10</td>
<td>String bean, straw</td>
</tr>
<tr>
<td>Canastra</td>
<td>5.2-1.4</td>
<td>Yellow ricke</td>
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<tr>
<td>Beans</td>
<td>6.5-1.5</td>
<td>Hemp</td>
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<tr>
<td>Lentile</td>
<td>5.1-10</td>
<td>Clover Hay</td>
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<tr>
<td>Meadow hay</td>
<td>7.5-10</td>
<td>(C. hay)</td>
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Many farms contain more than a sufficiency
of lime, while in others it is wanting; hence
an occasional application of lime alone will
act as efficiently as if artificial or ordinary
manure had been applied. But in the appli-
cation of this mineral to the soil, the more
intelligence is brought to its application the
more profitable and profitable will be the result.
The foregoing may be of some assistance to
the farmer in making the proper discrimina-
tion in the use of lime.

EXCERPTS

HEAVY work or driving soon after eating
is bad treatment for a horse. Let him rest on
a full meal, or use very moderately when use
cannot be avoided. If a dull, backward, sleepy neighborhood
desires to improve its agricultural resources,
let the farmers start a creamery. More live stock is what the
country wants.

A HORSE with no change of diet in a long
time is apt to tire of it, and indigestion will
soon result. Horses, like men, like a change
now and then, and it does them good.

The principal male raising States are Illi-
nois, Indiana, Kentucky, Tennessee, Mis-

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THE LANCASTER FARMER.

[May.

sorn, Ohio and Texas. The beauty and musical qualities of the mule are only a small part of his attractions. The nutritious consumption of this country is increasing, and also the quality of the meat. First-class, well cooked mutton is worth more than most other meats, and when dogs are scarce it will be cheaper, as well as more profitable to farmers.

After the sudden disappearance of a cow at Florence, Ala., she was found two weeks afterwards alive in a cotton shed, wedged between two bales of cotton, but was thin and nearly blind. Perhaps with a refreshment of water when wanted, she might have lasted forty days as well as Tamer did.

ILLINOIS has an average of twenty horses to each square mile of territory. In the number of horses, cattle and hogs, Illinois leads all the States. The hog-population is 731 per square mile, and one county (Stark) has 100, while the whole country, in which Chicago is located, only has seventeen.

The farmer of small means who desires to improve his lives stock should start with care, after he has observed and read enough to make a moderate investment safe. It is of little use for an ignorant, bull-headed man to attempt this kind of work. It is brain work that tells in stock-breeding as well as in professional life.

Intelligent foreigners often express surprise that with so much land as there is in the United States well adapted to sheep breeding, that we have so few sheep. This again raises the dog question. Outlaw the dogs and put a reward of $5 on every one killed, not licensed, registered and collared, and there will soon be a "bloom" in sheep breeding.

The improvement of farm live stock does not come simply from a mere investment of money, but from care, thought, observation, comparison and study of animal physiology, and the laws of breeding. Money might purchase a dozen first-class cows and a bull, but it takes something more than money to keep the stock up to the standard at starting, or to improve it. The benefit of improved stock comes largely from the fact that it is an educating force in farm life.

WILLIAM C. BLACKMAN, of Soodlesbury, Pa., kept twelve steers, averaging about 850 pounds each, through the past winter on cut and soaked cornstalks, along with one ton of wheat bran, 350 pounds cornmeal, and 150 pounds oil meal cake, all well mixed, with no hay whatever, and the animals are in better condition than usual. The bran, meal and oil cake cost less than $100, and he was enabled to sell seven tons of hay for $22 per ton. Hence Mr. B. doesn't feel that little a study of the nutritive qualities of cattle food did him harm. His milk cows got four quarts of this mixture twice a day, and never did better. We should not suppose that such results would make him hanker foruel.

WEALTHY stock breeders, who desire to see improved stock become general in order to do the country good as a whole, should not aim to keep prices at fancy figures. We notice that one writer in a stock journal advises to castrate all good bulls that cannot be sold for $100 at least. A man who does that for such a reason might as well acknowledge that his only purpose in breeding is to draw exorbitant profits from a class which ought to be benefited and yet cannot invest at fancy prices. Ordinary farmers sell their products for what they can get, and do not destroy it, and the example is a good one for rich stock breeders. If a $100 bull will bring only $80 or $75, to "get mad" and castrate him and then sell him to a butcher for $50 is rather mean sort of enterprise.

An Iowa farmer put up twenty-one-year-old hogs for fattening, and for the first twenty days fed them a diet of which only one-fourth was made of which only eighteen-three bushels. During this period they gained 37 pounds, or upward of ten pounds to the bushel of corn. He then fed the same hogs for fourteen days on dry corn meal, during which time they consumed forty-seven bushels, and gained 353 pounds, or 113 pounds to the bushel. The same hogs, next fed 14 days on corn meal and water mixed, consumed 553 bushels of corn, and gained 731 pounds, or 133 pounds of pork to the bushel. He then fed them fourteen days on corn meal cooked, and after consuming 45 bushels of the cooked meal the hogs gained 790 pounds, or very nearly fifteen pounds of pork to the bushel of meal.

Considerable attention has been recently given to the differences between the rain of the city and the country. The country rain is neutral and is considered the best adapted for human consumption of any found above the earth, on the earth, or under the earth. The rain that falls in cities, on the other hand, is acid, corroding metals, stones and bricks and mortar crumble before it. Its evil effects are visible on every side—In paint, in all decorations, and, in fact, almost, everything erected by man. The purest rain is that collected at the sea coast, more especially at considerable heights; while organic matter in the air usually contains in itself the density of population.

The best way with all grapes, and especially with those not quite hardy, is to prune in the autumn as soon as practicable after the fall of the leaves. If the vines are pruned and trained upon the renewal system it will be a very small matter to lay them upon the ground and give a covering of two or three inches of earth upon the shortened canes, which covering should be left on until all danger of severe freezing is passed in the spring.

A farmer proposes to make machine gear wheels of raw buffalo hide by cementing and pressing together, as many layers as are required for the breadth of the wheel. The blanks thus prepared are cut to form the teeth in the usual manner with suitable tools. The advantages claimed are smooth and noiseless action at very high speed, and greater durability without lubrication.

The most simple and best stain for mahogany cherry is ground burnt sienna, mixed in benzine or turpentine. Apply with a brush or sponge, let it stand for a short time and clean off with a cloth. It will be better to let it remain in this condition until the following day before commencing to finish.

HICKORY-SPUT-COOKIES.—Mix together two cups of sugar, two thirds of a cup of butter, two eggs, six tablespoons of sweet milk with half a teaspoonful of cream tartar sifted through it. Add a cupful of the chopped meats; drop, in spoonfuls on buttered pans, into shape and take to a light brown.

Corn cakes that are nice for breakfast are made of one quart of flour, one pint of meal, three teaspoonsful of baking powder, one teaspoonful of sugar, three tablespoonsful of melted lard, sweet milk enough to make a thin batter; add salt enough to suit your taste.

HOW TO TELL GOOD BUTTER.—When butter is properly churned, both as to time and temperature, it becomes firm with very little working, and it is tenacious; but its most desirable state is waxy, when it is the smaller and first, just as they are drawn out a considerable length without breaking. It is then styled gilt-edged. It is only in this state that butter possesses that rich, nutty flavor and smell, and shows up a rich golden-yellow color, which imparts so high a degree of pleasure in eating it, and which increases its value manifold. It is not always necessary, when it smells sweet, to taste butter in judging it. The smooth unctuous feeling in rubbing a little between the finger and thumb expresses at once its rich quality; the nutty smell and rich aroma indicates a similar taste, and the bright golden, glistening, cream-colored surface shows its height of cleanliness. It may be necessary at times to use the trier, or even use it until you become an expert in testing by taste, smell and rubbing.

WINTER PROTECTION OF GRAPEVINES.—The grape is a tender plant in almost every sense, and must be treated accordingly. We know how it is affected by great changes of temperature, extreme heat and humidity, severe pinching back and overbearing in summer. In winter it is still worse; millions of vines are annually lost and more hurt, for the want of a little attention in protecting them. It is only necessary to lay them on the ground at the beginning of the winter, and weight them with something to keep them down. The object is to avoid, not so much the cold, as the draft of the wind, which, when the vines are frozen, dries them, and thus perishes the smaller vine first, as they are each dried. Near the ground this is avoided, though where there is no obstruction at all to the wind, and the winter is an open one, leaving the vines exposed, harm will sometimes result.

THE Kansas Farmer says: The practice of forcing a horse to stand on his legs, or walk about, while laboring under an attack of colic, is most inhuman. The same remark is also applicable to the plan of exercising a horse during the time he is under the purgative action of a dose of physic. He should be moved gently about before the medicine commences to operate, but never after. Do those horsemen who knock the animal about while enduring the pains of colic or when suffering the purgative action of medicine, ever think of what they are doing? If they were treated themselves on the same plan under similar circumstances, they would soon come to their senses regarding the management of the unfortunate animal which is placed under their charge.
The American to-rist passing through Germany is surprised at the number of fruit trees along the sides of the public roads. These trees are pruned and looked after by the "road makers," and three or four weeks before the fruit ripens are watched day and night by these guardians. In the province of Wurttemberg the sale of the fruit thus raised is said to have realized as much as $2,000,000 in a single year.

Washing the leaves of the wax plant occasionally is the very best treatment for it. When washing, brushing with a soft brush along the edges of the leaves will tend to keep the plant free from meaty bags, one of its insect enemies. When the plant commences its growth we would supply it once a week with weak manure water.

The most profitable way to raise beef cattle is to keep them constantly in a thriving and improving condition. It is not necessary to keep very young stock rolling in fat, but there should always be an abundance of nutritious food to help mature in its development. To allow stock to run down in flesh and become ill-conditioned, simply because it is not designed for market for some time, is the height of folly.

In killing poultry, the French open the back of the fowl, and with a sharp-pointed, narrow-bladed knife, make an incision at the back of the roof of the mouth, which divides the vertebra and causes instant death, after which the fowl is hung up by the legs to bleed. This is a neat and merciful way of doing it.

Seasoned posts treated over the longer time to two or three washes or soakings of cheap petroleum will make them last longer than by almost any other process. This is easier than to coat with boiled tar, and far more sensible than to set top end down. Parker Earle, Cobden, Ill., earnestly commends this treatment after experiments.

The capacity of the glucose factories of the United States is said to be sufficient to make up about 11,000,000 bushels of corn per annum. While this adds a little to keep up the price of corn, it is all extracted back from the farmer's pocket in the shape of adulterated sugars and syrups. The glucose manufacturer is about as much a public benefactor as one who should adulterate our coin with an inferior metal.

A correspondent in an exchange wants to know how to purify bad-smelling estern water "by throwing something into it." The question does not indicate a surplus amount of "gumption" or taste. He might as well ask what will purify bad old cheese, or an egg six months past its prime. He should clean out his estern and purify that, not the water, and see that only pure water goes into it. Let him apply the bad water to his garden.

An old apple tree past its usefulness had better be cut down or dug out. It is a useless cumberer of the ground.

Marlching always retards the ripening of fruit, but that is often advantageous. It also makes the fruit larger and better.

It is not entirely creditable to me who have long been interested with fruit growing not to be able to tell what is the best system. It ought to be the aim of every specialist to find out.

Clapp's Favorite is a good market pear if picked early enough, so that it does not rot at the core. It ripens in advance of the Bartlett, and is of better quality for those who do not like the Bartlett's spicy flavor.

FRUIT TREES late in bearing can be fastened in this manner and permanently benefited by root pruning. Cut a trench about them and fill up with vegetable or animal matter, including some rubbish, and see how they will bloom.

There are many varieties of fruit on nearly every fruit farm which are unprofitable to grow in spite of excellent and popular qualities. Except a few for home use these better be grafted to more prolific and productive sorts. In many places the belladones and Seckel pears stand in this category.

A prominent Illinois fruit grower (Parker Earle), states that the Wilson strawberry is still the popular sort for the Chicago market. The Wilson is a hard berry to root out, and in going to market it bears rough handling better than any other sort. The Wilson sometimes is shipped 600 miles successfully.

Only think of it! When a man eats strawberries grown on a patch fertilized with 200 pounds of rectified Peruvian guano, 230 pounds dissolved bone meal and 200 pounds muriate of potash per acre, he eats 29.24 per cent of potassium oxide, 3.22 sulphur oxide, 13.47 calcium oxide, 8.12 magnesium oxide, 1.74 ferric oxide, 18.50 phosphoric acid and 5.66 per cent of citric acid. That is what aids them exactly.

Professor Gossman finds that an application of from three to four pounds of muriate of potash per tree to peach trees slightly affected with yellows, restores them to health. It would be a good plan undoubtedly to keep trees in health well supplied with this fertilizer, and then they might not get out of health as regards the yellows. It is quite certain that sick peach orchards are generally neglected orchards. Muriate of potash is also spoken of sometimes by chemists as chloride of potassium.

In Professor Gossman's application of muriate of potash to yellow-sick peach trees he recommends distributing it over a radius of eight feet or so on mulch. But no demonstration has yet been made as to the cause of the yellows.

ESSAYS.

SOME PRACTICAL POINTS IN PEACH CULTURE.

Having reason to think that my experience with peaches the past season was something remarkable, inasmuch as I had a fair crop amidst almost universal failure, and as this is a subject of growing importance to the fruit growers of Pennsylvania, I propose to lay before the society a few points that may be of interest from some notes that I have made principally in regard to the relative hardness of different varieties.

I see that Secretary Edge, of the State Agricultural Department, in his report of the crops for 1881, reports on fruit as follows: Comparative yield compared with average crop, apples 105, pears 100, cherries 100, plums 110, grapes 100, berries 100, peaches none. So far as I am able to judge this is about correct. And it thus appears, that while all other fruit crows were as good or better than common, in this part of the State, peaches were a total failure. And yet I had, as I have stated, a satisfactory crop, for though many varieties failed almost entirely, others were wonderfully fine, both in quantity and quality. And this in spite of the very severe drought which greatly injured some. I do not pretend to be able to give any explanation of this, but the question is certainly an interesting one, why, whilst otherwise adverse to nature, one should be partially successful. The cause of the general failure of the peach crop last year, as every one knows, was the extreme cold of last winter. The fruit bud of the peach not being able to withstand a very low temperature. And yet it would seem that there must be some other causes or conditions not yet

*Essay read before the Pennsylvania State Horticultural Association, at Harrisburg.
understood, because it is not supposed that any particular locality could escape, when the severity of the cold was so great and long continued, as was the case last winter. It is not my purpose in this paper to advance any theory in explanation of this phenomenon, although I havegrave doubts as to the truth of the universal rotting of all the early varieties. I wish to ask, first, is there a good variety earlier than Mountain Rose or Early York that don't rot before ripening? Second, does anyone know the reason why, or can anybody throw any light on the question, why all the early varieties rot, when later ones in the same ground and same kind of weather, do not?

I have also a few questions concerning yellows that I consider very important. It is claimed now by experts, that the cause of yellows is a specific fungoid affection, which is in some way communicated from one tree to another and when once the poison finds its way into any part of the tree it spreads itself by the circulation of the sap or otherwise until the whole tree is affected, and in time destroyed. And when this infection has once entered a tree there is no remedy but its removal to prevent further spread of the disease. Admitting this much to be settled, there yet remains much more to be learned in connection with this all important question. Mr. Rutter says, and I believe all other practical writers on the subject say, remove at once, and I suppose these diseased trees should be immediately burned. Now what I want to get at is, is this really necessary? Even if it were practical. To remove a tree immediately root and branch, is a very easy thing to recommend, but to put in practice next to impossible. The roots of a peach tree 10 or 12 years old, in rich and well cultivated soil, will be found to have run 50 and perhaps 100 feet or more, and their total eradicating would require besides an immense amount of labor, the destruction of all the other crops and trees within a circle of 50 to 100 feet in diameter. I have peach trees 8 inches in diameter, some of the roots of which have no doubt run for 100 feet, and most of them must be more than a foot beneath the surface, as the ground is constantly ploughed about that depth. The total eradication of one of these trees would involve the destruction of perhaps a quarter of an acre of strawberries or some other crop, besides a dozen or more pear, or other peach trees. Some time these trees will get the yellows. For according to my experience none escape, it being only a question of time. It is needless to say that I do not "totally eradicate" such trees. I do not attempt to remove the roots, because I am well satisfied that in the destruction of other crops, at least five per cent. of the trees have to be removed every year, more than the whole peach crop would be worth. I am aware that it is the practice, perhaps in most of the peach growing regions and particularly in very light soils, to remove old and diseased trees by drawing them out with a strong team, perhaps a yoke or two of oxen. But in that case I imagine only a small portion of the roots are removed. I am sure it would take at least a dozen yoke of oxen to pull out some of my trees and then the greater part of the roots would be left in the ground. To cut down and remove even a large peach tree is a very simple thing to do and costs but little time and labor. But taking out by the roots, or, as Mr. Rutter says, totally eradicating root, body and branch, and that perhaps at the busiest season of the year, is not a thing I am disposed to do generally. Now the question I want to get at is, is this really necessary? And this brings me to the other great question in which all other questions connected with peach yellows are involved. How is the disease communicated from tree to tree? Is it by actual contact alone, by being conveyed by the knife or saw in pruning; by contact of the roots, or as some have supposed by bees flying from tree to tree and carrying the pollen from diseased trees to the flowers on a healthy one and impregnating that with the poison. Or does it spread by spore or by any way other than by contact? And then again if the disease can be spread otherwise than by actual contact, it is very important to know at what season of the year are trees liable to be infected. Is it at all times, or only when the trees are growing or in leaf. This is important, because if a tree that is not in leaf cannot receive or impart the disease by actual contact, it is difficult to understand why a dormant stump of a tree could do by remaining a few years, until it rots and gets out of the way of itself; which it soon does. If, as Mr. Rutter says, the disease is communicated by contact of the roots, the mere grabbing out, or even drawing out with oxen, only removes a small portion of the roots of an old tree. And then again another question of great importance presents itself. How long after a tree has been cut down, or grubbed out, or drawn out with oxen, if you please, will the roots that remain in the ground, retain the disease so as to communicate it to another tree. I profess to know very little about Fungi, but it seems contrary to all that I have heard on the subject, to suppose that a Fungus which would thrive in living wood or bark would also live and thrive in dead or decayed wood. I have dwelt perhaps longer than I ought, upon this question of the disease of the peach, and its treatment, but I do not suppose that a reader of little importance, but it is because I have found it to be a matter of great practical import, so much so, that if I really believed it necessary to do what Mr. Rutter says must be done, I would at once abandon peach culture. Though I have never pretended to understand the yellows, and certainly have no theory about it, I cannot forbear saying here, that I have some doubts about the roots being affected to any great extent, because while all peach trees get the yellows, sooner or later with peach roots, the body and branches with the peach leaves, I have often thought it would be an interesting experiment to try how far the peach and plum might be grown together in one tree, without being liable to this disease; suppose the plum is worked on the peach several feet above the ground, or suppose a peach tree, say three years old, and free from disease, has all its branches worked with plum and no peach buds allowed to grow, so as to have, as near as possible, a peach tree with plum leaves. Would such a tree be liable to the yellows? If not, it would go to show that the infection is only received through the medium of the foliage or blossoms. But
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That the development of the disease is something incidental to the growth of the peach, and the Fungi that are found in trees affected with the yellows, are only the effect and not the cause of the disease.

Of all the theories that have been advanced in regard to the spread of the yellows, the bee theory seems to me to accord best with the facts. How else can we account for the fact, that if a peach orchard of perfectly healthy peach trees is planted a mile or more from any other peach trees, as soon as the trees grow, the disease will show itself, not, however, in regular rotation from tree to tree, as might be supposed would be the case, if the disease was spread by sporeid contagion, by contact of the roots, or by means of pruning implements, but jumping about; sometimes one, and sometimes two or three trees in a spot infected; just as bees are observed to fly, skipping about from one part of an orchard to another.

But, as I before said, it is not my purpose to go into a theoretic discussion, my only object being to bring up practical questions with which we are brought face to face in our daily practice, the proper solution of which is of the utmost importance.

For fear that the points that I have endeavored to bring out may not be clear, I will recapitulate. 1st.—What varieties will best withstand severe cold? On this I hope I have thrown some light. 2nd.—Why do all early varieties invariably rot prematurely, or are there any that do not? In regard to the yellos. 3st.—How is it communicated from tree to tree? 2nd.—Will the disease spread otherwise than by actual contact, except during the period of growth? These questions are very important in their bearing on the all important practical question. Must a tree be immediately removed on showing the first symptoms of the yellows? and must it be totally eradicated root and branch? To these may be added the following: If, as is supposed, the disease is a fungus that pervades the bark of the living tree, will this same fungus live in dead or decayed wood or bark, so as to communicate the disease to another tree, the roots of which may come in contact with them. There are of course a great many other practical points in peach culture, which might have been introduced that might be interesting; many, but it was not my purpose to bring up questions that have been often discussed here, and which are, or should be, now considered settled. I think we ought to make some progress, and I desire to take a step in advance, if I only succeed in awakening an inquiry that may throw some light on what are, as yet, some dark places in the path of the pomologist, my object will be accomplished.

MANAGEMENT OF AN ORCHARD.

The subject upon which I have been requested to write is one of such vital importance that it is with difficulty I present my views before this Society. I have no new discoveries to present. My success has been mainly due to paying strict attention to the following:

1st. Location.

Under this head comes the exposure. In my orchard I have every exposure; protected on all sides by low mountain ranges, except the northwest, which opens into a narrow valley, and through which the northwest wind has a clear sweep over a portion of the orchard. My choice would be a northern exposure, protecting on the north and west by mountain or forest. Trees thus located are less endangered by late frosts.

2d. Selection of Soil.

This is one of the most important considerations in planting an orchard. Be not governed by price. Better pay $300 per acre for good, suitable land, than take indifferent soil as a gift. In the first it will be pleasure and profit; in the latter, the opposite. In describing my soil, I have sand loam, clay loam, and clay loam. The loams are to a depth of two to four feet. We then come to a stratum of micaceous deposit, averaging from four to twenty feet in depth; beneath this a soft rock strongly impregnated with iron and small veins of plumbago. The clay loam is underlaid with a light clay sub-soil which never breaks. Were I again to make a selection, I would take the same, if obtainable. All these different soils are not equally good for any one variety of fruit, but each superior for such varieties adapted to it. I have my peach and cherry on my lightest soil. Apple on the loam. Pear, plum and quince on the clay loam.

3d. Its Preparation.

When I purchased this tract, the soil was completely exhausted, being farmed continually, and for twenty years receiving no manure. I reversed the usual mode of farming. Instead of plowing a furrow 6 inches deep and 15 inches wide, I put in a strong team and plowed a furrow but 8 inches in width and 15 inches deep, thus throwing up and intermixing 10 inches of subsoil with the exhausted surface. I then spread 75 bushels of good lime to the acre, and let it lay thusly over winter. The following spring I applied 500 pounds best dressed bones to the acre, plowed shallow, harrowed well, and considered it in good condition to plant.

4th. Selection of Varieties.

On this depends to a great extent, whether your orchard will be a profit or a loss. The best guide is to select such varieties as do well in your own immediate neighborhood. Do not be tempted by fine, showy plates of fruit you know nothing about. If you are not acquainted, ask some one on whom you can rely, who has had experience. Do not plant too many varieties. Select as near as you can, trees that are good growers and annual bearers of showy, good flavored and good keeping fruit. My selection would be, in the order named, Grimes' golden, Hubbertson nonsuch, Krauser, Cole, Hays' winter, Smith's cider, Ben Davis, Falahaw, Westfield seed-No-farther, for winter; Maiden's blush and Duches of Oldenburg, for fall: Red Asuranch and Early Harvest, for summer. Many may ask why I have omitted the Baldwin, Rhode Island Greening, Roxbury, Newtown, &c. My reply is they are usually cheaper than I can raise them, and if I have plenty of such apples as Grimes' Golden pippin, others are welcome to Baldwins, &c. Of pears, Duches, De Angouleme, (dwarf) Bartlett, Beurre de Anseau, Seckel and Louise Bonne de Jersey (standard), Plums, German, prune, imperial, gage and Lombard. Quinces, Orange and Rea's Mammoth. Cherries, Early Richmond, Mayduke, Black Tarlican and Gov. Wood. I never plant large trees, preferring 2 years old of stocky growth; peaches 1 year old.

5th. Proper Planting.

Have the holes dug large, not less than 2 feet square, and 18 to 20 inches deep. When ready for planting, throw the surface soil in below, filling the hole to such a height, keeping the centre slightly convex, that when the tree is set in, the roots take their natural position, and leave the tree when planted nearly the same depth as it stood in the nursery row. Trim off all mutilated roots, and set the tree in place, spreading all the roots out evenly; throw on some loose, mellow ground, filling up all vacant places around the roots. When sufficiently covered, press the earth gently but firmly to the roots with the foot, then finish filling the hole. When young, thrifty trees are thus planted, they need no stakes. I have planted 3,000 trees in my orchard and have never staked one, and I have scarcely a half dozen crooked trees on the place. After planting, it is very beneficial to throw around the base of the tree straw, weeds, leaves, tan bark or even coal ashes; anything that will retain moisture and keep the ground loose. This is more necessary in soil than in cultivated ground, where the loose surface soil acts as a mulch.


Here considerable good judgment is necessary. First know for what you are pruning; do not lop limbs indiscriminately; there are several objects to be obtained by pruning. First we prune a young tree when planting, to assist nature and relieve her from undue exhaustion; for when a tree is dug up the greater part of the fine roots are cut off, thus diminishing the supply of nourishment by cutting off from one-half to two-thirds of the last year's growth. You relieve the tree of that much material to supply with food, place. Prune your young trees properly and you do more. By careful pruning at the proper, buds you start the foundation for a low round symmetrical top. By proper pruning you can keep up a good, thrifty growth. For this, always prune in early spring and if the work be properly done the tree will need but little pruning in after years.

7th. Good Judgment, Close Attention and a Great Deal of Work.

We now come to a question that has caused
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more contention than any other in the management of an orchard. Cultivation or non-cultivation. I adopted the following plan and have been so well pleased with the result that I should follow the same course were I to plant another orchard. I planted my young orchard the first year with potatoes and corn. The trees all made a good growth except 14 cherry and 15 peach. Apple, pear, 

The Pyrethrum all

Asiatic a

the

The planted "peach.

in
distance. After

its branches to the hill. The result a good crop of potatoes and corn, and an enormous growth in the trees, excepting 3 acres which I put in sod. These trees made a very meager growth, although they received the same application of fertilizers. The third year I plowed the fallow ground again, applied 500 lbs. phosphate of lime per acre, planted corn and potatoes. The result this year was very marked. The trees occupying the cultivated ground made a strong healthy growth, while those standing in sod made a very small growth. The contrast between the two was so striking as to be distasteful. This was the year the committee visited the orchard. They all noticed the mark contrast between them. Fourth year I plowed under a heavy coat of manure; also turned under the soil around two tree rows; planted potatoes. Result, a fine crop of cherries, a heavy crop of peaches and a great many apples, and a strong growth from the trees under cultivation, none from those in sod, but the two rows which had the sod turned under made an enormous growth, leaving those continuing in sod far behind. Fifth year, run the cherry block in sod, cultivated the peach, apple, pear, etc., without, however, any serious injury, but a heavy crop, the apple and pear continued their strong growth under cultivation, and bore heavily, some as much as half a bushel to the tree. The peach also grew enormous, but bore no fruit, owing to the buds being winter killed. This year the trees in sod made a better growth than any year since cultivation was stopped.

I have measured several of the apple trees, under cultivation now five years, and they average 4 to 5 inches in diameter, are 15 to 16 feet high, and have a spread of from 10 to 12 feet, with heads nearly to the ground. My plan would be to cultivate a young orchard for eight to ten years, then run into sod, and top dress, mowing the grass and leaving it decay on the ground. But this is not all. Eternal vigilance must be the watchword of the successful orchardist. I wash my trees every spring with a wash, 1 lb. of caustic potash to 5 gallons of water, washing with a stiff hand scrub. This keeps the bark clean, smooth and healthy, destroying thousands of insects. At the same time potash is a very necessary ingredient to all vegetable matter. It is also very necessary to examine for the borer at least twice a year. During winter is a good time to destroy thousands of eggs of such insects as infest the tops. They can be readily seen, gathered and destroyed. It is useless for a lazy or indifferent man to endeavor to be a successful fruit raiser. He must take pride in his work. He must apply himself to work, not entrusting it to others. Nor is the exercise of muscle alone necessary.

The mind must be brought into action; he must devote a portion of his time to reading the various works relating to his business, as well as good horticulturist papers, thereby becoming familiar with the causes of failure or success of others, learning how to avoid the first, and benefit by the latter. With these remarks I will close. If what little I have said will help any one, in any particular, I am amply repaid.

SELECTIONS.

HISTORY OF PYRETHRUM.

There are very few data at hand concerning the discovery of the insecticide properties of Pyrethrum. The powder has been in use for many years in Asiatic countries south of the Caucasus mountains. It was sold at a high price by the inhabitants, who successfully kept its nature a secret until the beginning of this century, when an American merchant, Mr. Juntikoff, learned that the powder was obtained from the dried and pulverized flower-heads of certain species of Pyrethrum growing abundantly in the mountain region of what is now known as the Russian province of Transcaucasia. The son of Mr. Juntikoff began the manufacturing of the article on a large scale in 1828, after which year the Pyrethrum industry steadily grew until to-day the export of the dried flower-heads represents an important item in the revenue of those countries.

Still less seems to be known of the discovery and history of the Dalmatian species of Pyrethrum (Pyrethrum cinerariifolium), but it is probable that its history is very similar to that of the Asiatic species. At the present time the Pyrethrum flowers are considered by far the most valuable product of the soil of Dalmatia.

There is also very little information published regarding either the mode of growth or the cultivation of Pyrethrum plants in their native home. As to the Caucasian species we have reason to believe they are not cultivated, at least, not at the present time, statements to the contrary notwithstanding. The well-known Dr. Gustav Radde, director of the Imperial Museum of Natural History at Titlis, Transcaucasia, who is the highest living authority on everything pertaining to the natural history of that region, wrote us recently as follows: "The only species of its genus, Pyrethrum roseum, which gives a good, effective insect powder, is nowhere cultivated, but grows wild in the basaltic-alpine zone of our mountains at an altitude of from 6,000 to 8,000 feet." From this it appears that this species is native, but is not cultivated in its native home, and Dr. Radde's statement is corroborated by a communication of Mr. S. M. Huston, Vice-Consul General of the United States at Moscow, Russia, to whom we applied for seed of this species. He writes that his agents were not able to get more than about half a pound of the seed from any one person. From this statement it may be inferred that the seeds have to be gathered from the wild and not from the cultivated plants.

As to the Dalmatian plant it is also said to be cultivated in its native home, but we can get no definite information on this score, owing to the fact that the inhabitants are very unwillimg to give any information regarding a product the plant of which they wish to monopolize. For similar reasons we have found great difficulty in obtaining even small quantities of the seed of P. cinera
tifolium that was not baked or in other ways tempered with to prevent germination. Indeed, the people are so jealous of their plant that to send the seed out of the country becomes a serious matter, in which life is risked to a great extent.

Cultivation of Pyrethrum.

The seed of Pyrethrum roseum is obtained with less difficulty, at least in small quantities, and it has even become an article of commerce, several nurserymen, as well as growers, cultivate it. Although we cultivated this plant on a large scale in France and in the United States, we were unable to procure any quantity or information respecting the growth here.

Now it is the easiest cultivation, either by seeds or divisions. It now ripens into a great variety of all shades, from white to deep crimson, double and single, perfectly hardy here, and I think likely to be nearly everywhere on this continent." Dr. James C. Neal, of Archer, Fla., has also successfully grown Pyrethrum roseum and many varieties thereof, and other correspondents report similar favorable experience. None of them have found a special mode of cultivation necessary. In 1880 Mr. C. Willehad made a special attempt to cultivate and to distribute the plant* in the United States, and a large scale in France and in the United States. The cultivation of Pyrethrum is the best we know of, we quote here his experience with but few slight omissions: "The soil best adapted to its culture should be composed of a pure ground, somewhat siliceous and dry. Moisture and the presence of clay is injurious, the plant being extremely sensitive to an excess of water, and would in such cases immediately perish. A southern exposure is the most favorable. The best time for putting the seeds in the ground is from March to April. It can be done even in the month of February, if the weather is warm. After the soil has been prepared and the seeds sown, they are covered by a stratum of ground mixed with some vegetable mold, when the roller is slightly applied to it. Every five or six days the watering is to be renewed in order to facilitate the germination. At the end of about thirty or forty days the young plants make their appearance, and as soon as they have gained strength enough they are transplanted at a distance of about six inches from each other. Three months after this

*Mr. Willehad calls his plant Pyrethrum rosaeum or P. roseum, whereas it is more probably P. rhodanum, a synonym of P. roseum. We have drawn liberily from Willehad's paper on the subject, a translation of which may be found in the Report of the Commissioner of Patents for the year 1890, Agriculture, pp. 225-331.

**Report Conn. of Patents, 1897, Agriculture, p. 130.
operation they are transplanted again at a distance of from fourteen to twenty inches, according to their strength. Each transplanting requires, of course, a new watering, which, however, should only be moderately applied. The blossoming of the Pyrethrum commences the second year, toward the end of May, and continues to the end of September. 1 Mr. Willemot also states that the plant is very little sensitive to cold, and needs no shelter, even during severe winters.

The above-quoted directions have reference to the climate of France, and as the cultivation of the plant in many parts of North America is yet an experiment, a great deal of independent judgment must be used. The plants should be treated in the same manner as the ordinary Astros of the garden or other perennial Composite.

As to the Dalmanit plant, it is well known that Mr. G. N. Nilo, a native of Dalmanit, has of late years successfully cultivated Pyrethrum cinereum folium near Stockton, Cal., and the powder from the California-grown plants, to which Mr. Nilo has given the name of "Bubach," retains the insecticide qualities and is far superior to most of the imported powder, as we know from experience. Mr. Nilo gives the following advice about planting—advice which applies more particularly to the Pacific coast: "Prepare a small bed of fine, loose, sandy, loamy soil, slightly mixed with fine manure. Mix the seed with dry sand and sow carefully on top of the bed. Then with a common rake disturb the surface of the ground half an inch in depth, Sprinkle the seeds finely upon it, and water the whole, or the water will cause injury. After it is well sprinkled, water twice a week is sufficient. When about a month old, weed carefully. They should be transplanted to loamy soil during the rainy season of winter or spring."

Our own experience with Pyrethrum cinereum as well as Pyrethrum cinereum folium in Washington, D. C., has been so far quite satisfactory. Some of the plants which were planted in the fall of 1880 came up quite well in the spring, and a few plants bloomed in November of 1881, though such blooming was doubtless abnormal. The plants from sound seed which we planted this spring are also doing fairly well, and as they are a rather stiff clay and the rains were in early summer very heavy and heavy, we conclude that Mr. Willemot has over stated the delicacy of the plants. We have observed further that the seed often lays a long time in the ground before germinating, and that it germinates best when not wet red to heavily. We think that the too rapid absorption of moisture often causes the seed to burst prematurely and rot. Where slower absorption in a soil only tolerably moist affords the best conditions for germination.

Preparation of the Plants for Use.

In regard to manufacturing the powder, the flower-heads should be gathered during fine weather, when they are about to open, or at the time when fertilization takes place, as the essential oil that gives the insecticide qualities reaches, at this time, its greatest development. When the blossoming has ceased the stalks may be cut in about four inches from the ground and utilized being ground and mixed with the flowers in the proportion of one-third of their weight. Great care must be taken not to expose the flowers to moisture, or the rays of the sun, or still less to artificial heat. They should be dried under cover, and hermetically closed up in sacks or other vessels to prevent unmitigated pulverization. The finer the flower-heads are pulverized the more effectually the powder acts and the more prolonged is its use. Proper pulverization in large quantities is best accomplished by the tramps who make a business of it and have special mill facilities. Lelw & Fink, of New York, have furnished us with the most satisfactory powder. For his own use the farmer can pulverize smaller quantities by the simple method of pounding the flowers in a mortar. It is necessary that the mortar be closed, and a piece of leather through which the pestle moves, such as is generally used in pulverizing pharmaceutical substances in a laboratory, will answer. The quantity to be pulverized should not exceed one pound at a time, thus avoiding too high a degree of heat, which would be injurious to the quality of the powder. The pulverization being deemed sufficient, the substance is sifted through a silk sieve, and then the remainder, with a new addition of flowers, is put in the mortar and pulverized again.

The best vessels for keeping the powder are fruit jars with patent covers, or any other perfectly tight glass vessel or tin box.

The Use of Pyrethrum as an Insecticide.

Up to a comparatively recent period the powder was applied to the destruction of these insects only which are troublesome in dwellings, and Mr. C. Willemot seems to have been the first in the year 1857, (2) to point out its value against insects injurious to agriculture and horticulture. He goes, however, too far in his praise of it, and some of his statements as to its efficacy are evidently not based upon actual experiment. Among others he proposes the following remedy: "In order to prevent the ravages of the weevil on wheat fields, the powder is mixed with the grain to be sown in proportion of about one hundred to one of the powder. The grain is kept in burlap bags, which will save a year's crop." This is simply ridiculous, as every one who is familiar with the properties of Pyrethrum will understand. We have during the past three years largely experimented with it on many species of injurious insects, and fully appreciate its value as a general insecticide, which value has been greatly enhanced by the discovery that it can be most economically used in liquid solution; but we are far from considering it a universal remedy for all insects. No such universal remedy exists, and Pyrethrum has its disadvantages as has every other insecticide now in use. The following are its more serious disadvantages: 1. the action of the powder, in whatever form it may be applied, is not a permanent one in the open air. If c. g., it is applied to a plant, it immediately affects the insects on that plant with which it comes in contact, but it will prove perfectly harmless to all insects which come on to the plant half an hour (or even less) after the application; 2. the powder acts in the open air—unless, perhaps, applied in very large quantities—only upon actual contact with the insect; if c. g., it is applied to the upper side of a cotton leaf the worms that may be on the underside are not affected by it; 3. it has no effect on insect eggs, nor on pupae that are in any way protected or hardened.

These disadvantages render Pyrethrum in some respects inferior to arsenical poisons, but on the other hand, it has the one overwhelming advantage that it is perfectly harmless to plants or to higher animals; and if the cultivated insects in this country should prove a success, out of it will be evolved pyrethrum in its Powder becomes low enough, the above-mentioned disadvantages can be overcome, to a certain degree, by repeated applications.

In a closed room the effect of Pyrethrum on insects is more powerful than outdoors. Different species of insects are differently affected by the powder. Some resist its action most effectually, c. g., very hairy caterpillars and especially spiders of all kinds; while others, especially all hymenoptera, succumb most readily. In no case are the insects killed instantly by Pyrethrum. They are rendered perfectly harmless a few minutes after application, but do not die till sometime afterward, the period varying from several hours to two or even three days, according to the species. Many insects that have been treated with Pyrethrum show signs of intense pain, while in others the outward symptoms are much less marked. Differences in temperature and other meteorological changes do not appear to have any influence on the effect of Pyrethrum.

Modes of Application.

Pyrethrum can be applied—1, as dry powder; 2, as a fume; 3, as an alcoholic extract diluted; 4, by simple stirring of the powder in water; 5, as a tea or dection.

The following recommendations are based on repeated experiments in the field:

1. Applications of Pyrethrum as a dry Powder.—This method is familiar to most housekeepers, the powder being used by means of a small pair of tongs. It is then generally used without dilution, but if it is undiluted and fresh (which cannot be said, in many instances, of the powder sold at retail by our druggists) it may be considerably diluted with other pulverized material without losing its deadly effect, the nature of the powder thus becoming much cheaper. Of the materials which can be used as diluents, common flour seems to be the best, but finely-sifted wood-ashes, saw-dust from hard wood, etc. in short, any light and finely-pulverized material which mixes well with the Pyrethrum powder will answer the purpose. If the mixture is applied immediately after preparation, it is always less efficacious than when left in a perfectly tight vessel for about twenty-four hours, or longer, before use. This has been proven so far only with the mixture of Pyrethrum and flour, but holds doubtless true also for other mixtures.

E. A. Schwarz experimented largely under our direction with the mixture of Pyrethrum and flour for the cotton worm, and he found that one part of the powder to 11 parts of flour is sufficient to kill the worms (only a portion of the full-grown worms recovering from the effects of the powder), if the mixture is applied immediately after preparation; but if kept in a tight glass jar for about two days'
days, one part of the powder to 22 parts of flour is sufficient to kill all average-sized worms with which the mixture comes in contact. For very young cotton worms a mixture of one part of Pyrethrum to 30 parts of flour, and applied one day after preparation, proved most effective, hardly any of the worms recovering.

An ordinary powder bellows will answer for insects infesting dwellings or for plants kept in pots in rooms, or single plants in the garden but it hardly answers on a large scale outdoors, because it works too slowly, the amount of powder discharged cannot be regulated, and the powder is difficult to contain in any kind of bag or canister except a large plant. Another method of applying the dry powders is to sieve it on to the plants by means of sieves, and this method is no doubt excellent for insects that live on the upper side of the leaves. For large, more shrub-like plants with many branches, and for insects that hide on the underside of the leaves, this method will be found less serviceable. A very satisfactory way of applying the powder on large plants, in the absence of any suitable machine or contrivance, is to throw it with the hand after the manner of sowing seed. This method is more economical and rapid than those mentioned above, and it has, moreover, the advantage that, if the plants are high enough, the powder can be applied to the underside of the leaves.

2. Application of Pyrethrum in Flowers.—The powder burns freely, giving off considerable smoke an odor which is not unpleasant. It will burn more slowly when made into cones by wetting and molding. In a closed room the fumes from a small quantity will soon kill or render inactive ordinary flies and mosquitoes, and will be found a most convenient protection against these last where no larva are available. A series of experiments made under our direction indicates that the fumes affect all insects, but most quickly those of soft and delicate structure.

This method is impracticable on a large scale in the field, but will be found very effective against insects infesting furs, feathers, herbaria, books, etc. Such can easily be got rid of by spraying the infested objects in a tight box or case and then fumigating them. This method will also prove useful in greenhouses, and, with suitable instruments, we see no reason why it should not be applied to underground pests that attack the roots of plants.

3. Alcoholic Extract of Pyrethrum Powder.—The extract is easily obtained by taking a flask fitted with a cork and a long and vertical glass tube. Into this flask the alcohol and Pyrethrum is introduced and heated over a steam tank or other moderate heat. The distillate, condensing in the vertical tube, runs back, and at the end of an hour or two the alcohol may be drained off and the extract is ready for use. Another method of obtaining the extract is by re-percolation after the manner prescribed in the American Pharmacopoeia.

The powder worm seems to more thoroughly extract the oil than the extract, and at least we found that the residuum of quantity of Pyrethrum from which the extract was obtained by re-percolation had not lost a great deal of its power. The first method is apparently more expensive than the other, but the extract is in either case more expensive than the other preparations, though very conveniently preserved and handled.

The extract may be greatly diluted with water and then applied by means of any atomizer. Professor E. A. Smith, of Tuscaloosa, Ala., found that, diluted with water, at the rate of one part of the extract to 15 of water, and sprayed on the leaves, it kills cotton worms that have come in contact with the solution in a few minutes. The mixture in the proportion of one part of the extract to 20 parts of water was equally efficacious, and even at the rate of 1 to 40 it killed two-thirds of the worms sprayed on in 15 or 20 minutes, and the remainder were subsequently disabled. In still weaker solution, or at the rate of 1 to 50, it loses its efficacy, but still kills some of the worms and disables others. Professor Smith experimented with the extract obtained by distillation, and another series of experiments with the same method was carried on last year by Professor R. W. Jones, of Oxford, Miss. He diluted his extract with twenty times its volume of water and applied it by means of an atomizer on the cotton worm and the boil worm, with perfect success. Mr. E. A. Schuyler tried at about the same time to recover the extract obtained by re-percolation,§ and found that 10 drachms of the extract stirred up in two gallons of water and applied by means of Whitman’s fountain-pump was sufficient to kill all cotton worms on the plants. Four drachms of the extract to the same amount of water was sufficient to kill the very young worms.

4. Pyrethrum in Simple Water Solution.—So far as our experiments go, this method is by far the simplest, most economical, and efficient. The bulk of the powder is most easily dissolved in water, to which it is once incorporated the insecticide powder. No constant stirring is necessary and the liquid is to be applied in the same manner as the diluted extract. The finer the spray in which the fluid is applied the more economical is its use and the greater the chance of reaching every insect on the plant. Experiments with Pyrethrum in this form show that 300 grains of the powder stirred up in two gallons of water is amply sufficient to kill the cotton worms, except a very few full-grown ones, but that the same mixture is not sufficiently strong for many other insects, as the boil worm, the larva of the Tenebrio nigrum, and many others protected by dense hairs. Young cotton worms can be killed by 25 grains of the powder stirred up in two quarts of water.

The Pyrethrum water is most efficacious when first made and loses power the longer it is kept. The powder gives the water a light greenish color, which after several hours changes to a light brown. On the third day a luxuriant growth of fungus generally develops in the vessel containing the liquid, and its efficacy is then considerably lessened.

5. The Tea or decoction.—Professor E. W. Hildag, of Berkeley, Cal., is the only one who has experimented with Pyrethrum in this form, and expresses himself most favorably as to the result. He says:—

"I think, from my experiments, that the tea or infusion prepared from the flowers (which need not be ground up for the purpose) is the most convenient and efficacious form of using this insecticide in the open air; provided that it is used at times when the water will not evaporate too rapidly, and that it is applied, not by pouring over in a stream, or even in drops, but in the form of a spray from a syringe with fine holes in its rose. In this case the fluid will reach the insect despite of its water-shedding surfaces, hairs, etc., and stay long enough to kill. Thus applied, I have found it to be as useful as the same solution made up in the usual scale-bag of the orange and lemon, which falls off in the course of two or three days after the application, while the young brood is almost instantly destroyed. As the flower tea, unlike whale soap and other washes, leaves the leaves perfectly clean and does not injure even the most tender growth, it is preferable on that score alone; and in the future it can hardly fail also to be the cheaper of the two. This is the more likely, as the tea made of the leaves and stems has similar although considerably weaker effects; and if the farmer or fruit grower were to grow the plants, he would save all the expense of the grinding flower-heads by simply using the leader, curing the upper stems, leaves, and flower-heads all together, as he would hope, making the tea of this material by the hogshead, and distributing it from a cart through a syringe. It should be diligently kept in mind that the least amount of boiling will seriously injure the strength of this tea, which should be made with briskly boiling water, but then simply covered over closely, so as to allow of as little evaporation as possible. The details of its most economical and effectual use on the large scale remains, of course, to be worked out by practice."

The method of applying Pyrethrum in either of the three last-mentioned forms is evidently far more economical in the open field and on a large scale than the application of the dry powder, and, moreover, gives us more chance of reaching every insect living upon the plant to which the fluid is applied. The relative merits of the three methods can be established only by future experience, but so far we have found the simple water solution most convenient and satisfactory.

QUINCE CULTURE.

There is some difference of opinion as to the best length for a cutting. Eight or ten inches are recommended. My experience in Vineland gives the preference to a cutting of about fifteen inches, planted a foot in the ground. The advantages of so deep a setting are, that it guards against drought, and furnishes a greater length for the formation of roots, which comes out through the bark all the way from the lower end as high as the soil is moist.

Cuttings can be made to grow if taken at any stage of their development. If green and soft they depend on conditions of heat and moisture in the soil and air, requiring the skill of a professional gardener with the appliances of the hot-house. For out-door cultivation the wood must all be well ripened.
and taken in its dormant state, after the trees have shed their leaves in autumn. I have found February and March favorable to success. Any time before the buds start in the spring may succeed. A few grew one year taken in May. The sprouts often growing on the part of roots near the surface, suggested root cuttings as an additional means of multiplying trees. Any large root cut off near the collar of the tree is almost sure to develop buds of seed and send up sprouts. That best time to make root cuttings is just before the usual season for the buds of the tree to swell in the spring.

Propagation by grafting on the stocks and roots of other trees as well as its own, is a successful method of quince culture. The thorn and apple have been used for the quince, as that has been for the pear, and here all the different methods of grafting are available. The thorn is much valued by some on account of its strength, and freedom from borers. Roots of apple trees, as well as other quince trees, are available. Trees were on apple roots were exhibited at the late meeting of the New Jersey Horticultural Society in Vineeland. The scions of a fruitful tree grafted into one that has been borne the second year. grafting on older stocks in this way will enable us to test new varieties; and also to gain time in proving the value or worthlessness of all our seedlings. It is also a convenient way of comparing the relative merits of different varieties, by securing the perfect equality of all conditions. A good grafting wax, to be applied warm, is made by mixing together six parts resin, with one part each of bees-wax and tallow or linseed. It can be applied with a brush, or spread on strips of muslin for wrappings. For a wax to be applied by hand, cold, Downing recommends bees-wax and resin each three parts, to two parts of tallow. Scions for grafting are best if cut after the leaves have fallen and before the stimulation of the spring. They can be wintered in sand or waved if not cut till spring they may as well be set at once. By the aid of an ice-house the season of setting them can be greatly extended. Vigorous roots often prove disadvantageous. Trees grown on apple roots will be best to leave some of these to direct the circulation of the sap and thus secure a supply to the scion, but all should at length be removed leaving the graft to enjoy every advantage.

Propagation by budding, or inculcating, is a favorable method for some trees, as the peach and apricot; but is only recommended for the quince where grafts have missed, or where we want to increase the sorts for which the other methods are not available. It differs from grafting mainly in being confined to the season when the cell circulation is most active, and the union of parts much quicker than with apple roots. Budding is most successfully performed in that part of the growing season when the cambium or gelatinous matter between the bark and wood is in greatest activity organizing new cells. The "pulp," as gardeners call this cambium, must be present between the bark and wood of the stock, so that the bark can be easily separated for the insertion of the bud. It buds of the previous year are to be worked, the scions should be kept dormant till the young leaves of spring indicate that the bark will slip. If buds of the current year are used they should be well developed; and this perfection may be accelerated by cutting off the tips of the shoots from which they are to be taken. As soon as the scion is separated from the tree the blade of every leaf should be removed, so that its evaporation may not injure the vitality of the bud. If dormant buds have been used in spring the stocks should be cut away above the bud, and in the fall the same bud, and the shoots from the stock below rubbed off. If buds of the current year have been successful, then the renewal of the stocks should be deferred to the next spring. With a vigorous stock, a bud, like a graft, should make a handsome tree the first season.—The Weekly Press.

POULTRY FARMING.

The cost of adequate fencing still strikes me as one of the main difficulties of the poultry business. The easiest put-up fence is wire netting fixed to posts or stakes at proper intervals, and, all things considered, it is, perhaps, as cheap as any unless exception be made in favor of tarred twine netting, but that is not so durable. Employing 21 inch meshed wire netting, size eighteen for the bottom width, and 31 inch mesh and number nineteen guage for the top width, a yard wide and buying in quantities, the cost of netting, six feet high, with a wire to run through and stiffen the top, will be about fifteen to eighteen cents per lineal yard without the stakes and building. After allowing for this, it will bring the cost of fencing the same for each side for plot, to $5, and the fencing in the hedger for the permanent lines will cost an additional $8 for each plot.

But in my opinion the netting alone will not best answer the purpose. There would be some fighting through it; it affords no shelter; and had habits would be communicated. Birds kept as they must, be kept in such yards are observant and ready to adopt vices very quickly. If the hens in one yard take to egging or feather plucking, the vice will be learned by hens in adjoining yards when there is no obstruction to sight. To separate different flocks from sight of each other, even partially, is of some importance, and this entails increased expense. Stakes or posts of sufficient size and height may be set in the ground at proper intervals and then nine-inch thin boards attached for the bottom of the fence, and a width of netting stretched on top will make a fence that will overcome all the difficulty, but it increases the expense to double, or nearly double that of the netting alone. But it is a great deal better fence for the partition. It is to be made in sections so as to be easily removed from one side of the house to the other, as needed. We must therefore incur an expense of $13 for the eight yards, allowing at the rate of fourteen cents a head. This will cover the whole expense for fencing, if a man falls in with a streak of more than ordinary good luck. But it would perhaps be safer to make estimates on $15 per fenced plot, and the whole fencing and building per acre will reach a cost of at least $75.

It will be objected that the expense and time required are too great before the farm could be put into successful operation, but lapse of time in arrangements and investment of capital is a part of all successful business. I cannot see why people should demand a system of poultry farming that is capable of springing into existence all at once. No other kind of farming or of fencing ever did spring into existence in that way. The ordinary farmer finds to his hand buildings and fences and arrangements which have been the growth of years, I might almost say of centuries. It is then computed to expect that land to be made equally desirable for an entirely new system without time and expense and labor, and if I point out, therefore, the kind of fences and other arrangements adapted to the end in view it is no kind of answer to say these things take too much time and money. These are some of the difficulties of the undertaking, and are a very good reason why no one should embark lightly in such an enterprise, but go gradually to work, feeling his way as he goes.

Thus the planning and the fencing of a poultry farm is relatively the largest amount of capital. If any plan is to be a system that will work permanently without this preliminary labor and investment of capital he will have a large audience ready to hear him. My own experience of fowls is against all and any seductive theories of cheapest instantaneous arrangements in poultry farming, and I believe any one who tries to force success on that basis will come to grief. Granite can be boiled as easily as water if you will take the necessary steps in organizing your boiler—but not otherwise.—Dr. A. M. Dickie, Doyleston, Pa.

POULTRY ABUNDANT, BUT DEAR.

Since the year 1, or the days of Peter, the raising of poultry has been a certain gauge of civilization. The wild Indian keeps no fowls; but, as man advances from the savage state he gathers the feathered tribe around him, because they make some of the richest delicacies of his table, as well as the softest down for his couch. Although poultry is raised in large quantities in this region, it is very dear. In price in stands besides of beef, mutton and pork, all of which are about double American prices. A pair of chickens costs about $2, and they are not very large at that. Of course the common day laborer earning not more than thirty sons per day, cannot often indulge in such luxury, or the mechanic either, who earns but five francs a day. But as poultry is always abundant in market, somebody eats a great deal of it. Of the various kinds, chickens are kept in the greatest numbers. Like the farm stock they are a great deal mixed; but mostly dark-colored or black. The Black Spanish are the most common, and like cats and dogs, are kept more or less all over the city, hence you may hear the "cackling" which is their almost universal action in the morning, but it is not good enough Shaghai relations in America. It is almost as different as the little car whistle here and the big one at home. Chickens are outlawed in town and country—they must keep in bounds, or their heads will come off before their time. In the country—there is plenty of good pasture for them so that they cannot help but thrive; as we have before remarked, every
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spot of ground which has not been recently harvested or plowed is green as grass can make it. We hear of no serious diseases.

—Philadelphia Witty Press.

NOTES ON FRENCH AGRICULTURE.

Nitrogen, the most valuable and costly element of bone manure, occurs largely in an insoluble form, and may remain. All cultivated soils contain large quantities of it, so that in soluble form there would be sufficient for large crops for hundreds of years.

Many farmers, however, are not aware of the existing facts. Experiments by Messrs. Laws and Gilbert will enlighten them. In raising barley on the same ground during nineteen years in succession they found that as much barley was obtained by applying chemical fertilizers containing forty-one pounds of nitrogen in ammonium salts, which were readily soluble, as from applying bone manure containing 200 pounds of nitrogen. In other words, the nitrogen in soluble salts, which were available for plants, proved nearly five times as effectual as nitrogen in bone manure. If the latter could be as readily soluble as the nitrogen in ammonical salts four times the immediate effect usual would be obtained from it. Here is a chance for the young farmer with a "large intellect.

Nitrogen is done to render the fertilizing elements of bone manure more soluble and available for the use of plants? Dr. Laws, who has given the subject much attention, after what he calls a "scientific prelude," says: "I am bound to confess that I am just as helpless in regard to the management or improvement of dung as the most old fashioned farmer." This is certainly not very encouraging. Prof. S.C.Caldwell, of Cornell University, in commenting upon some of the results of experiments by Messrs. Laws and Gilbert, in which the crops obtained contained only a part of the nitrogen contained in the barn manure, says: "These considerations teach us to convert our manure to stable manure, as far as possible, into more assimilable forms by judicious rotting before putting it in the soil; since the proportion immediately recovered is so much larger, the more soluble the nitrogen with which the plant is fed." Much may be done by allowing it to ferment and decompose. The process, however, must be conducted with care or the ammonia formed will escape. If horse manure is allowed to ferment in a heap loosely thrown together, as is usually the case around stables, it becomes dry and ammonia escapes freely. By making the heap more compact, as may easily be done by allowing rain to fall on it, and keeping it moist, very little ammonia will be lost. Ammonia has so strong an affinity for it that a gallon of ice-cold water, it is said, will absorb 1,150 gallons of ammonia gas. By keeping the heap well moistened very little ammonia will escape. According to Dr. Volcker, lime, burned, calcite, and acryophracids are produced during fermentation, and these uniting with the ammonia form salts which are retained in the heap, and preserve the ammonia in a form easily available for the use of plants. Pigs aid in this work, and the occasional addition of soil or manure will serve as another precaution against loss. Earth and manure readily absorb ammonia and tenaciously retain it. If by decomposition half the nitrogen in barn manure could be removed and, as available for plants as the nitrogen in ammonical salts twice the effect would be obtained from it. Laws and Gilbert obtained in their experiments in barley raising,—Henry Reynolds, M. D., Auburn, Maine.

OUR LOCAL ORGANIZATIONS.

LANCASTER COUNTY AGRICULTURAL AND HORTICULTURAL SOCIETY.

The Lancaster County Agricultural Society met slatedly Monday afternoon, May 1st; the following members were present: J. F. With-mer, Parachy; W. L. Hershey, Chickies; Daniel Sneecky, city; John C. Linville, Salisbury; Peter H. Hershey, city; F. R. Diffendiller, city; J. M. Johnson, city; John Monk,Chickies; Levi S. Reitl, Manheim; S. P. Eby, city; Harry G. Resh, West Wil- low; Mr. Haws, New England.

Mr. John Monk, of West Hempfield, was nomi-nated and elected to membership.

S. P. Eby, as chairman of a special committee on the laws relating to fencing lands, reported progress and asked to be continued.

Crop Reports.

H. M. Engle said the wheat crop prospects are good. Along the river some fields are exceedingly fine. Clover has suffered. The lookout is not favorable to a heavy hay crop. The fruit prospect very good. The peach blossom is profuse; so that it of pears and plums. Potatoes are just coming out of the ground. Rain fall for February was 5.14 inches; for March, 3.216, and for April 2.114 inches.

L. S. Reitl said the wheat and fruit crops are good, but clover was never poorer. Some fields have already been planted.

P. H. Hershey remarked the singular fact that the best lands seem to have the poorest clover. Why this was so he could not understand. He wished to know why this was so.

J. C. Linville also remarked the fact mentioned by the former speaker. The best clover on his farm to day is on flinty and stony clay ground, which is contrary to the usual experience. He has noticed some wheat is far better than the rest.

S. P. Eby has also observed that clover is very poor. A promising field of his own is frozen out completely.

John G. Resh noticed that the poorest lands this year have the best clover, something that is unac-countable.

H. M. Engle has been accustomed to sow rye for green food for his cattle. It makes rough hay, but it comes early as green food, and he has been feeding it for several weeks already this season. The clover sown this spring got an excellent start, and if the season is favorable we ought to have a good hay crop next spring; but we have had poor hay crops in West more than a number of years, as all know. He believed during dry seasons that clover might be of less use to the young clover. It is pastargul closely when the ground is dry and hard, and the life is tramped out of it by the cattle which are kept on it long after they should be taken off.

J. S. Wirtzer reported a good wheat crop, but the grass was rather poor. A little corn has been planted. There is still a good deal of tobacco on hand. Young plants are coming up rapidly.

Growing Corn.

H. M. Engle thought growing a good corn crop depended on many things; good land, properly pre pared ground, good seed and good cultivation. I two-year old soil he thought best for corn. Don't plant too early nor too deep. The longer corn requires to come up the weaker the plant. When it comes up rapidly it grows much faster; from half an inch to an inch is deep enough to plant. The largest average crops are grown in hills while the largest yields have been taken from drilled fields. Where the soil receives more attention, culti- vate shallow. Remove the suckers early; when they draw the vitality of the corn plants.

S. P. Eby gave an instance of a farm on which at one time no corn could be grown. Gradually the land was brought through and corn and fine crops were grown. Much trouble was experienced from cows. The seed was then soaked in tar water, which put an end to this trouble, and also brought the plants along faster.

John G. Resh did not think our farmers should make the corn crop their first thought. They can grow it cheaper than we can. We cannot afford, therefore, to give so much time and attention to corn.

P. H. Hershey thought our corn crop a very im-portant one. The whole culture is an important point. Don't plant too deep, and begin working the moment the corn is up. You can't work your corn land too much. The best crop of corn he ever grew was in a rather dry season; he worked it eight times; it never stopped growing and gave 75 bushels to the acre.

Mr. Naoh asked whether any one had experiences with Chester county Mammoth corn.

J. S. Wirtzer had had some experience. He did not like it and will not plant it any more.

H. M. Engle never plants corn dry. He soak's it using four or five times the usual amount of water. If planted dry in dry weather, it lies there weeks in a dry season with-out coming up. He never plants corn without put-ting on cool tar. A very small quantity is enough. Put a little plaster over it; after it has been thus treated it can be easily handled. Birds will never touch corn treated in this way. He has no fear of crows. The lands along the river are very well adapted to corn, and when a two-year soil is plowed under no manure is required. A good crop is nearly always to be relied on. Failures are uncommon in Lancaster County. Lancaster County small corn is better and better, better, being easier to handle because. He also alluded to a disease, like the yellowsoe in peaches, that sometimes come upon the corn. It is caused by a minute aphids that operates on the root, and he did not know of any remedy against this ravages.

Commercial Fertilizers.

H. M. Engle believed not only commercial fertil-izers, but fertilizers of almost every kind, are valu-able when applied to the potato crop. Anything that contains potash will benefit potatoes. Even ashes from anthracite coal are serviceable. Potash, nitrogen and phosphoric acid are the three great fertilizers. Nitrogen is the most useful as the other two for potatoes. It will pay, however, to apply some of the high-priced manures to the potato crop. Nothing but experiment will tell the farmer what kind of manure his fields need. Every farmer must find out what is best adapted to his lands. J. C. Linville said some writers hold commercial fertilizers are somewhat uncertain when applied to the potato crop. Fertilizers that combine the three articles above mentioned are the best with which to grow potatoes. Nothing is better for all purposes than the mixture of nitrogen and phosphoric acid, or manure, which contains all three of them.

Mr. Engle asked why we should buy potash when our soil may already have plenty of it—more than will be used in a generation.

How Should Lime Be Applied?

John C. Linville thought we should keep it on the surface, but only under certain conditions. His potato field is applied none, and in another field worked down into the soil. Surface application of lime is desir-able because it absorbs carbonic acid, which is valuable to the soil. If plowed under this process does not take place. If lime is to be applied he believed it should be applied during warm fall weather and on the surface only.

H. M. Engle believed the best results are when applied in a fine mealy condition to dry soil, and left on the surface.
The term "strain," as used by us, is very much broader than it is by some persons. Because a breeder has for three or four years bred a certain kind of fowl does not give him the right to claim that his strain is the purest. Some strains have taken on a shape, and certain prominent features of the birds he breeds must be so established in them that their kind, quality, characteristics, and peculiarities are not shared by other strains which they may be crossed with.

To illustrate this let me give you the groundwork of the various strains of Buff Cochin, not for aggrandisement, but because of the knowledge of them.

Sixteen years ago next October 1st was taken with Buff Cochin fowls, and kept the best I could at that point, and from these was an invertebrate exhibitor at State and county fairs, whose boys with them for years.

Mr. D. W. Brubaker of Newfville was considered by me, for a perfect place at that time; and the birds which these few fowls proved the point above mentioned. The birds spoken of were from a pure and straight Stock, and stamped their good qualities so plainly on their progeny that I was convinced a strain must be established.

After some seven years close attention it now appears that the start of such a strain has been accomplished.

The aim has been to eclipse the standard and the only reward hoped for is the accomplishment of the feat.

The start was made with the best birds to be had from my old stock. To this aim we have proceeded, from the selection of the birds to be had, always using new blood on the best females in hand. By so doing the purity of the strain will be so strongly as possible. The only kind of blood allowed in the years has been that which was known to produce as well.

At times wrong crosses have been made and all the young have come out a head shorter, until now a bird is the birds except those which are kept for full English blood.

To these have been added the whole of Mr. Donis, of the stock of his fowls which have been retained; these crossed with my own in a few years established each other, and filled the ground.

This may not of course be called "a true strain," not a new breed of a few years' breeding can not be counted on to ever breed like themselves.

Long years of close attention is the only way to establish a strain, and it is to be hoped the breeders of this country will soon drop chance work and set down to establishing true breeding strains of the many fine varieties of fowls.

The establishing of a society like yours must be a great benefit to you as breeders, and I will venture to mention for your consideration a plan that, in my opinion will be both a pleasure and profit to you all. Let each meeting day which is held be an all day meeting with the breeder and some birds in the care of a few of the best young men of the country this variety of birds, and let each man present take a score of fowls and some birds and keep a record of his, and compare the case, and let the different scores be your subject of discussion.

The points will be easy to follow, and I think that, if you keep careful way, you can, in my opinion, spend an hour or two each month.

In a short time the very best judges among you will place themselves in a position to tell the gains and losses of a certain breed, and doubt some will spring up who will make themselves the equals of Piers or Bull.

The American Poultry Association should, first, to breed the very best stock he can, and not to be content with medium, but to try and be the very first in his class, and, full force and determination put to the work, he who wins over him will be the best in the breed. He should be the one to do this, and, even, and his efforts should be doubted the next year or until he does reach the point; second, do all you can to encourage the work of the young men and those who have neglected, for it should be the public we wish to benefit, and not ourselves entirely.

Trusting that the above mentioned lines may have proved of momentary interest to some of you, I will wish you all a prosperous season, and say "Good-day."

On motion the Secretary was tendered to Mr. McCreight for his essay.

On motion, the society adjourned.

FULTON FARMERS' CLUB.

The April meeting of the club was held at the residence of Lizzie King, on Wednesday, Mr. and Mrs. Brown, R. H. Haines, Joseph Blackburn, Joseph P. Griseth, Joseph Brown, Grace A. King and Solomon L. Gregg were present.

There were also quite a number of visitors in attendance.

In the absence of the President, Joseph Black-

burn was elected President pro tem.

Grace A. King exhibited some very fine Tewskbury Winter Blush apples.

Jesse Yocum, a visitor, exhibited White Russian Oats and White Virus Resistant.

Asking and Answering Questions.

Joshua Brown: Which method will raise the most corn to the acre, planting in the hill or drilling?

This question created quite an animated discussion. Nearly all present, both members and visitors, were of the opinion that planting in the hill, as recommended by Mr. Yocum, was best; but some, including the school teacher, expressed an opinion to the contrary. It was finally decided that a hill should be made in the soil, not because more corn could be raised in that way, but because it would allow working nearer to it, and was not so liable to be injured.

James Smelley, a visitor, asked if it made any difference which way the corn rows were run—north or south.

Alvin King had noticed on his way to Lancaster yesterday that the corn was growing much better in the hill in order to have them run to north and south, and the conclusion was that the corn had been washed and the rows straightened and followed the rows. Some others present had seen the same effect when the rows were up and down hill. The general sentiment was that it would be better to run the rows to suit the grade of the ground than to run to the points of the compass.

Mr. Smelley said how lima beans should be planted and cared for.

One of our questions was to plant in rows four feet apart, the hills about three feet apart. In the row, three beans in the hill. The poles should be put up if the beans were planted. Work with horse like corn.

Jesse Yocum asked if any one present had been troubled much with worms.

Quite a number had had their beans destroyed with worms.

Mr. Smelley said that his wife last fall had heated a part of their beans, but not hot enough to destroy the germ. The beans took sunburn, those that had been heated were destroyed.

Inspecting the Host's Premises.

After dinner the club made the usual inspection of the farm, the workmen, the boarders, the house, when some very complimentary criticisms were given in regard to their management. One of the illuminating points was that the yard (horserow) could show the neatest farms. (The host is a bachelor.)

Papers Read.

An excellent article on "Agriculture" was read by Emma King. "Mabel A. Haines gave a recreation. "Mourillon on the Progress of the Fulton Farmers' Club."

Twelve years ago a few farmers met in the parlor of Mr. McGrew and incorporated the Fulton township, for the purpose of forming a farmers' club, and, although the project looked rather gloomy, a few of the number had kept up regular meetings, and during the whole time there had never been manifested any desire for such a combination. The club has prevailed throughout. There appeared to be a kindly feeling existing between all the members, which is noticeable to all who visit them. They are held in high esteem by the community.

DURING the course of the meeting, the club considered the question of the fair. There was strong feeling existing between all the members, which is noticeable to all who visit them. They are held in high esteem by the community.

The picnic held last summer at the Barren Springs was quite a decided success.

John McGrew was quite an agreeable affair. In all these the public had been invited to participate on perfect equality with club members, and the proceeds from the proceeds from the proceedings, after paying the expenses, had been divided among the exhibitors as premiums. He parted a desirable tribute to the memory of William McCreight, the late president of the club.

How, lacking the advantages of a good education, and spending most of his time in the bloom of life, to keep up an old Pike's arithmetic and other books, in order to keep up with the times. In his death the community at large a live and progressive man. (We are sorry that the essay at neglect of the club, as a community, and who was a help meet for him in the true sense of the word.—Our J.

Joseph McGrew, another member, had also been removed by death, and of the original number, two were now members of the club, viz., William King and Jesse Yocum.

The question, Is it better for the farmer to pursue a mixed farming, or a special farming? It was brought up by a member and considered, and the discussion went on for some particular branch, as dairying, cattle feeding, etc., if they but money at times tried to get up something of a better title.

The May meeting will be held at the residence of Mr. McGrew, Fulton township, first Saturday in the month.
Agriculture.

French Farming

Every square foot of ground is put to use, has been since the days of the ancient French. Here there is no bush, no bushy thicket, no hedge, not even the remnants of an old hedge, in the distance appear patches of wood, carefully preserved and guarded, but the rest of the land is sown. The fields and the land are so well planned and managed that there is no untended spot. Single rows of poplars stretch with aspiring regularity across the landscape. They are not sown, but are allowed to grow, and when a plant is moved except a bunch at the extreme top, then they look as though they were planted with a purpose. There are willows by the brook, but they are so trimmed, kept for their twigs which are so copiously cut off, the plant, which would be stunted by a hand like hands from which all the fingers have been amputated.

Sand Farming

With sand? Writers differ so much in their ideas of soils that it is partly because of their meaning. Pure sand makes a poor soil, or no soil at all, on which to grow any kind of crop. Our common, sandy soil contains usually much sand, and this is what gives them their capacity for being so productive. sandy loam soils are the best of our arable soils in New England for any crop we produce. There are considerable tracts of country where a person could buy any quantity for three to ten dollars an acre, but they are so productive of all kinds of crops; but they need considerably manuring, to which they are very sensitive, showing its effects by the size of their grains. Some of these lands will now command a price from ten to fifty times as high as twenty years since.

Crop Prospects

Taking the most recent returns from the great wheat-growing States for the basis of an estimate, we are, in truth, much less copious than the west reports. What has been the case of our lands now, the largely increased acreage is reported. Spring wheat, too, has advanced to an extent that would make it three or four thousand acres that before, thus bringing to the market an abundance which persons reputed to be not over-thankingly flourished and particularly year and a half hundred million bushels. It is almost too enormous to be conceivable by the mind. The decidedly good or bad, I mean to be said of the crop this year and it is to be wondered to the anticipated value of this crop. But allowing that so much war occurs, and that the crop is large, we are to be comforted in the hope that it will have a great and favorable effect on the prices of the crop, and thus, the price of flour. And if we can compel an extraordinary draft on this country, there is the probability of not relying on keeping foreign exchange in our favor and thus retaining our gold as possible. There is already a large remaining surplus for foreign buyers from last year's crop, but there will be a demand for all that we shall ordinarily have to sell. But the calculation is, in any event, according to the experience of past years, that the cotton crop of the coming season will be the largest ever yet produced, owing to the prolonged overflow of the richest cotton producing region of the United States. It seems that, as a nation, we have everything to encourage and be very little to cloud our hopes for the immediate future.  

Fence Posts

An experimental writer on this subject very rationally remarks: "To have a fence that will last, we must have good materials, and good labor to put them up, and if the labor is cheap enough, it is as well to put it off at the surface of the soil. Then, the fence is to come down, new posts set, and the board replaced. This at one time was a difficult task. The job was done, the fences, and then seasoned oak posts oiled and then tarred with boiling coal tar makes them last the longest. If a man has a little over two and one-half square inches at one end and two by five inches at each end, let him cut them one foot and two inches long, as would build my fence, and the other half I put in the ground with nothing done to them. It would be a much better fence if it would be remembered that as well as the fence, the post as well. Some of the other posts I were oiled off, and some of the others were not." Two years after I built another fence with seasoned oak posts, same size as the first, giving them all a good coat of oil, and in a few days after tarred them, it made for the purpose, four feet deep and four feet long, and then tarred and oiled enough to hold four posts set on end; left them in the ground three years, and they have never come out and sanded them. And now, after fourteen years, not one in ten is need replacing. I shall never need to build a fence, but in the future I shall plant in rows where they are to be turned. In June and July they should be tarred and oiled, and left out six inches in the row. As soon as they become established, the soil is kept well supplied with water. Unless there are pipes or rubber hose. Some have located celery plantations on the banks of streams or the side of the river. The farmers have been slow in finding out that celery is by nature an aquatic plant, and they are now treating it as if they were wanted.

How To Chinese Make Dried Vegetables.

We have all known how the Chinese cram their women's feet, and so manage to make them keepers at home; but how they contrive to make them keepers in the garden, for half a century has always been much of a secret. They aim first and last at the seat of vigorous health, to be consistent with the preservation of life. Take a young plant—say a scudding or cutting of a cedars—be very careful to keep it in a stock of delicious fruit for the whole season's use.

Greenhouse and Window Plants.

The increased growing of many plants into flower, and at the same time to increase the production of fruits, is the small collection of plants, tended by one really fond of them, may be kept free of insects by mere "thumping" in the spring, and thus freed from the importation in the fall, a stiffish brush, like an old tooth-brush, and a pointed stick to pick off needy bugs and scale, will keep it free of insects in the greenhouse, and nip the trouble in the bud, is the case of much of the difficulty. More water will be needed by plants in bloom than by those out of bloom; the water, if it remains in the cellar, may be brought to the heat and watered. The water used in the earlier ones, cut away the stalk and let the leaves dry, and the later ones, when they begin to fade dry off the bulbs, which may be planted in the garden afterwards.

Profit in Onions.

More money can be realized from a given amount of onion land better than from any other crop that can be raised. The large amount of labor is required, however, to raise a large amount of onions. The labor of old persons and children can be utilized to good advantage in raising onions, as most of the work can be done by these persons. The black muck containing a good deal of loam. The nature of the onion should be well kept mixed with the soil, say by turning under and cross harrowing. This should be repeated as many times as may be necessary in the spring the ground should be cultivated and harrowed. Then, when the onion seed should be drilled in rows fourteen inches apart. It will take four or five pounds of seed to the acre. The onion seed should be sufficient for the seed, and red Wethersfield, and silver later. The latter are not good keepers, but sell well. As soon as the young onions are lifted, they should be set above the surface. When the onions are ripe they should be cut off and left on the ground till the tops are dry; then they are gathered in the largest market.

Celery Culture.

The demand for celery increases every year. Late- ly the demand has been greater than the supply in all parts of the country. It is the only vegetable on which the demand is unfavourable one for this crop. The spring was cold, and wet, and the summer hot and dry. The leaves were generally decayed and the crop generally small. The culture of this plant has been greatly simplified during the past year. The system of planting in trenches has been abandoned by the majority of vegetable gardeners. This effect a great saving of labor. The plant of the previous year's growth has been given up by most persons. The seed is sown in well prepared beds in the open ground, but great care is necessary in planting the seed for the growth of the tender young plants. Some burn the soil as the they do have to trouble with weeds. The seed is sown in rows about eight or ten inches apart, and the soil between them is carefully cultivated. The young plants should be thinned to stand two or three to the foot, and kept in beds about six inches where they are to mature. In June and July they should be thinned again, and stand six inches in the row. As soon as they become established, the soil is kept well supplied with water. Unless there are pipes or rubber hose. Some have located celery plantations on the banks of streams or the side of the river. The farmers have been slow in finding out that celery is by nature an aquatic plant, and they are now treating it as if they were wanted.

Household Recipes.

Tapioca Pudding.—Take one and one-half cups of tapioca and soak over night; three eggs beaten thoroughly, and reserving the white of one egg, and one-half cup of sugar, and a little of milk, and nutmeg. Bake until well done. Frost with cream colored for lemon pie, and return to oven until brown.

Bread Pudding.—Take one part of bread crumbs, leaving in a little of the milk in which it is soaked, half cup of white sugar; two eggs, beaten thoroughly; one cup of raisins if desired; baking powder and nutmeg. Bake until well done. Frost with cream colored for lemon pie, and return to oven until brown.

Chili Sauce.—Forty-eight ripe tomatoes, ten peppers, one pound table-spoonfuls salt, two teaspoonfuls cinnamon, nutmeg and allspice; one cup sugar. Slice the tomatoes and peppers and simmer with the other ingredients, adding water as needed. Stir in the sugar, and at the last moment add the pepper. Serve hot as a relish.

Oyster Soup.—Take one quart of water, one tea cup of butter, one pint of milk, two teaspoonfuls of
For a good sized chicken take one pound of flour, one-half cup of sugar, and salt. For dressing for the above quantity take the yolks of two eggs boiled hard, make them fine, and beat them with a little salt, pepper and salt, to suit taste, and the liquor of the chicken boiled in is very nice to use, putting it into the dressing. If you boil the hard yolks of the eggs, stir the sauce in the boiling while boiling, and season with salt, black and Cayenne pepper and salt, to taste.

Sour Kisises.—White of two eggs, beaten as for frying; one cup of sugar added to them. Mix well and drop in small cakes on a buttered plate. Bake in a medium oven. Serve with lemon sauce.

Lemon Pudding Sauce.—One large cup sugar, nearly half a cup of butter, one egg, one lemon—all the ideal ingredients. When the egg is beaten, add the lemon juice of one lemon; bake till done, then spread over a layer of preserves or jelly; whip the whites of the eggs stiff, add three ounces of powdered sugar, which in this mixture is the juice of the lemon. Pour the whites and the mixture in the mold, and let it brown lightly. To be eaten cold.

Pudding Chicken.—One pint of fine crumbs, one quart sweet milk, three ounces of leaf sugar, a couple of spoonfuls of salt, one spoonful of flour, one pint of boiled milk, one teaspoonful of cayenne, one tablespoonful of mustard, one egg well beaten, one tablespoonful of sugar, one tablespoonful of cream tarter, half teaspoonful of salt. Make one hour.

Shoat Pudding.—One pint of milk, one pint of syrup, half pound of raisins, half pound of currants, half pound of suet; add prepared flour as stiff as possible, calk all over with suet, and let it stand for two hours. Bake one hour.

Boiled Bread Pudding.—To one quart of bread crumbs, soaking in water, add one cup of molasses, one quart of boiling water, one tablespoonful of cream tarter, half teaspoonful of all kinds of spices, one teaspoonful of soda, about one cup of flour. Boil one hour.

Lowell Pudding.—One coffee cup of milk, one tablespoonful of flour, half teaspoonful of sugar, one teaspoonful of raisins, half teaspoonful of salt; pour to make a stiff batter. Bore through and add suet. Beat and bake an hour.

Hominy Puddings.—Two cups of boiled hominy; beat it smooth, stir in three cups of warm milk, half cup of suet; add salt and pepper. This is a good soft pudding. Add three eggs well beaten; one teaspoonful of soda, dissolved in hot water; two cups of flour. Bake in a pan about an hour and a half. Serve hot.

Potato Cakes.—Roast some potatoes in the oven. When done, skin and pound in a mortar, add two or three eggs, one tablespoonful of flour, a little pepper, a little salt, a little milk, mix well, put them on the griddle, and fry.

Corn Oysters.—One pint grated green corn, one cup flour, one spoonful of salt, one teaspoonful of soda, one tablespoonful of cream tarter, one tablespoonful of cream tarter, one tablespoonful of sugar, and fry.

Boiled Leg of Lamb.—Time, one hour and a quarter. There should be one pint of flour, one table- spoonful of sugar, a little pepper, the leaves of lamb, weighing about five pounds; soak it in warm water for rather more than two hours, then remove it and put it on the spit to cook a quarter. When done, dish it up and garnish with a border of carrots, turnips, and parsley. When the meat is cooked, add it to the gravy, and serve it with plain parsley, and butter sauce poured over it.

Tapioca Pudding.—Three-fourths of a cup of tapioca, cooked in milk, the white of an egg, a portion of the milk and the yolks of four eggs, until soft; pour into a pan, and add the whites of three eggs and a tablespoonful of sugar, and bake an hour and a half, and dress it up and serve with brandy sauce. It should be served with a heaping spoonful of sugar.

How to Grow a Pig.

Editor Mass. Ploughman: Will you please inform me through the Ploughman how I can grow a pig for market? I have never kept pigs before, and the farmer with whom I live has much to do that will exclude me from the care of the hog. I want to get one good sized April sow. She should have milk, and would also be well fattened. She should be better for him? It is a suckling pig, and I want him fat for the family. Sometime it is a good deal. Truly yours, C. P., New Salem, Mass., March 30th, 1882.

Shorts mixed with the milk would, in our opinion, be the better course. As far as the pig should be fed often, and principally on milk, but as he shell, four carrots, rolled fine, and at consofnient of pepper. Bring to full boiling heat as soon as possible, then add one quart of oysters. Let the whole come to a boiling heat quickly and remove from the fire.

Chicken Salad.—For one good sized chicken take one pound of flour, one-half cup of sugar, and salt. For dressing for the above quantity take the yolks of two eggs boiled hard, make them fine, and beat them with a little salt, pepper and salt, to suit taste, and the liquor of the chicken boiled in is very nice to use, putting it into the dressing. If you boil the hard yolks of the eggs, stir the sauce in the boiling while boiling, and season with salt, black and Cayenne pepper and salt, to taste.

Whitney for Game.—Bolt a onion in a pint of milk till it is like a jelly; then strain, and stir into the boiling milk folded bread crumbs enough to make it firm; add the yolks of two eggs, an equal quantity of boiled milk, and a couple of spoonfuls of salt, to taste. Serve this with game, and it is delicious.

Turkey Soup.—Take the turkey bones and cook for one hour in water enough to cover them, then take off bones and season the stock; add a beet, and a few chopped celery improves it. Take from the fire, and when the water has ceased boiling add a little salt.

Fish Sauce.—Yolks of two raw eggs. Add salt, oil, drop by drop, until it is of the consistency of thick cream; add the juice of half a lemon; mix well, and serve cold.

Pumpkin Pie.—Take one quart of pumpkin, stewed and pressed through a sieve, two quarts of cream, two tablespoonsful of sugar, one half cup of flour, half a stick of butter, a little salt, a little pepper, and it is a great improvement.

Graham Muffins.—One quart of Graham flour, two tablespoonfuls of sugar; two eggs, one-half cup of cream. Beat two eggs, add the sugar, powder, and a little salt; molten and mix thoroughly with little milk. Bake in pattycake at once in a medium oven.

Turkey Soup.—Take the turkey bones and cook for one hour in water enough to cover them, then take off bones and season the stock; add a beet, and a few chopped celery improves it. Take from the fire, and when the water has ceased boiling add a little salt.

Boiled Beef Pudding.—To one quart of bread crumbs, soaking in water, add one cup of molasses, two tablespoonsful of salt, one tablespoonful of cream tarter, half teaspoonful of all kinds of spices, one teaspoonful of soda, about one cup of flour. Boil one hour.

Lemon Pudding.—One pint of milk, one pint of syrup, half pound of raisins, half pound of currants, half pound of suet; add prepared flour as stiff as possible, and place in the pan and let it stand for two hours. Bake an hour.

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The Lancaster Farmer.

May, 1882.

A Nevada Stock Raiser.

W. B. Tothunger branded last spring over 9,000 calves, most of which he has in a neat stock of beef cattle. These figures prove Mr. Tothunger to be the largest stock raiser in the country. There are 20,000 head of stock cattle and over 100,000 acres of extensive land. The annual rainfall is 25 inches, and 40 acres of swamp land in one bunch. He has about 1,000 bulls and 200 saddle horses. He employs fifty men during the winter and twenty during the summer. His cattle are carefully selected, and his work is hard winters. He keeps 100 work horses, and raises as many more. Every possible precaution is taken to keep them in good condition. Besides his cattle, he has 200 or 300 horses, four jacks and fifty stallions.

Poultry.

A writer in the Poultry Monthly, whose neighbors have lately been paying forty eight cents per pound for chicken feed, asks the question, "Is there any necessity to feed to chicken with proper attention to chickens there is no difficulty in obtaining an abundant supply of eggs at all seasons. The temperature for keeping fresh eggs should be moderate warm water two degrees above the freezing point. The portion of the year up to about the tenth of August is closed, from this point on, the consumer feels his four days, the first week, the second week, the third week, and the fourth week is seasoned with sea; the second feeding consists of buckwheat, the third wheat screenings, and the fourth week he never allows his chickens to roost out doors.

A House for 200 Fowls.

To accommodate to 150 to 200 fowls, it would be best to have a barn-like building, the middle as to make two, with a door at each end. The second story might be made of hay, and the mud walls, sloping back from the floor to the roof. In the middle there may be a room for nest boxes. If the front, which should face the south, is of glass, it will be much improved. As large a yard as possible may be provided, and leashed with wire, so that the birds do not run away. The space, requisite for such a house need not cost more than $30, and $12 additional for ash for the front.

Questions About Eggs and Poultry.

Manitou. We do not believe half the reports current about extraordinary production of eggs. Yet it not improbable that some of their eggs may lay an egg every day for a long period. The Black Spanish hens often do this, and we have read of cases where the hens have continued it for a year or more. The situation, however, was that there was none the next day. Hens cannot well be expected to keep up this work without them; they are too laborious. Even if the bottom of the nest is made warm with down or feathers, a hen may probably keep six or seven eggs without great trouble; but if the hen needs no help to get out of the nest; it is very weak, in which case it may get up but to wait for it to remain there, as there is no nest to go to. We do not think that such facts should need any help, there is a more easily given when an incubator is used. Light Brahma chickens lay small eggs, and keep them warm, but the eggs are black and brown; Plymouth Rocks are black and white, with black back. Black-red Games are black and yellow, or brown.

Raising Sunflowers for Hens.

The necessity for a variety of feed for chickens is generally understood, but very few people are aware of the fact, that the most valuable, the most productive of all, are eaten greedily, and give a peculiar liuster to the feathers. I have one eighth of an acre of sunflowers, and I have a supply of all kinds of seeds, while in domesticity they sometimes lay eight or ten. Mr. Brickwood, Postmaster-General of the country, who had them in domesticity for many years, sometimes raised two dozen a day, and said they seemed to have strong attachments, and are fond of human society; one gander in particular has been about them for the last two years, and is always ready to follow me when I go to the barn, and will talk with me in a low, soft, plaintive tone so long as I will indulge the humor. They are not easily outwitted, and if they get into a place more than half weeded. They take a bath scarcely once a day, and rarely remain in the water long. I sometimes find them out, from the road, with their heads in the fenches, where they breed among the flax beds, depending upon the pools which they find among the rocks for their water. As a rule, they are not inclined to strong flight in the wild state, though in domestication they show little disposition to fly. Altogether they are one of the most interesting of all the chicken, and I hope another year to raise some of them from the only pair I have left. A few weeks ago I lost the head by a murder, Judge Union in American Naturlist.

LITERARY AND PERSONAL.

The Verdict of the Jury.—We have just received a copy of the most popular piece of music ever published in this country, called the "Verdick March," composed by Eugene L. Blake. It is written in an easy style, so that it can be played on either piano or organ. The title page is very handsome, containing correct portraits of Hon. Geo. B. Washburn, Lord Chief Justice, and Mr. E. H. Blau, music publisher, 136 Elm street, Cincinnati, Ohio, United States of America.

The Record.—A new bi-weekly educational, literary and general newspaper, "The Farmer," is published weekly, the first Tuesday of each month. Address all orders to W. W. H. Smith, music publisher, 136 Elm street, Cincinnati, Ohio.

How Chickens are Born.

Take an egg out of a nest on which a hen has laid her four or five eggs, and you find that by incubating it, you will have to hunt them up and drive them home, but if you keep regularly every morning and always at eight o'clock in the morning, you will find them in their nest. If they have fully feathered, and have thrown out the red on their heads, which usually occurs in two or three weeks, you will find them growing right straight from the egg, they will take up on the nest, and then the shell is forced outward as a small scale, leaving a hole. Now, if you take one of the eggs in your hand, and rub it with a warm hand, and put it in a box or nest, keeping it warm and moist, as near the temperature as possible, and moveable (which must not be done by laying it in two bottles of warm water upon some beds of grass or straw), in about four or five days, or that is to say, you can sit or stand, as is most convenient, and you will be witness the true modus operandi. Now watch the chick grow, and five or six weeks from this time they hatch. After this he gets his opening he commences a little pull at the shell on the other side of the shell, outside of the shell, always working to the right (if you have the large end of the egg from you, and the head toward you, and you have your arm almost round, you have one-half of an inch in a perfect chick, he then forces the cap or butt end of the shell by his feet, and the first time you will see the chick, he has forced the shell out, and then the shell is broken. This is as I told you a thousand times before, when the egg was put in the nest, and the hen and the chick were together.

A Cheap Chicken Coop.

A "Jerseymam" describes in the Tribune his neighbor’s cheap arrangement for raising chickens: for coops he uses tight old barrels laid lengthwise on the ground. On the top of the barrel, at the base, is a turcky, which can only be opened by a strong arm, the bottom of the barrel is made to hold the chicken, and then the door with, the small straw driven in to keep the hen and chicken warm to the last. There is nothing better on which to set a hen than a dry and airy place. She will lay hard down, and as soon as the end of the egg is dropped from her, she will generaly keep a remembrance of its barrel, and back went to it with her brood for food and water during the night. It is a great help to the chickens to a few of the old hen was allowed to come out at will. Each generally kept a remembrance of its barrel, and back went to it with her brood for food and water during the night. If likely to rain it was necessary to see that all got into their coops for shelter before it began to fall.

Hawaiian Geese.

The Hawaiian geese (Beriula sandalocineus) which I brought over in the spring of 1879 have proved very successful. They were all sheltered and cared for last winter, and came through in good order. Both geese commenced sitting in April this year for May. They are the finest eggs, but only one showed a disposition to sit upon them. The first couple of chickens was brought to a business faithfully for ten days, tired of being limited to the nest, so they produced so gloggels. In the wild state they lay two or three eggs, while in domesticity they sometimes lay eight or ten. Mr. Brickwood, Postmaster-General of the country, who had them in domesticity for many years, sometimes raised two dozen a day, and said they seemed to have strong attachments, and are fond of human society; one gander in particular has been about them for the last two years, and is always ready to follow me when I go to the barn, and will talk with me in a low, soft, plaintive tone so long as I will indulge the humor. They are not easily outwitted, and if they get into a place more than half weeded. They take a bath scarcely once a day, and rarely remain in the water long. I sometimes find them out, from the road, with their heads in the fenches, where they breed among the flax beds, depending upon the pools which they find among the rocks for their water. As a rule, they are not inclined to strong flight in the wild state, though in domestication they show little disposition to fly. Altogether they are one of the most interesting of all the chicken, and I hope another year to raise some of them from the only pair I have left. A few weeks ago I lost the head by a murder, Judge Union in American Naturlist.

The Free-Trade Bulletin: A four colored hologram (Vol. 1, No. 6), devoted to the political doctrines of "Free and Basle Treatment," was published by the American Free Trade Association. It is a handsomely printed journal, and is one of the best editions of such a periodical. It is known whether truthful or false, in persuing it, "All things suspect;" breaths a truth that needs to be more fully apprehended, and widely extended than now appears on the present small scale. It may be only a very large vacuum to fill in this community.

The Southern Cultivator: The April number of this popular and well established Agricultural Journal has been received. The issue was delayed a little, but there is a great improvement in the printing establishment to a much larger building.

It should be a matter of pride with our Southern farmers, to be the custodians of our agricultural literature. Every farmer is their representative, published alone in their interest, and is by far the most valuable and best fitted to do so. The editors of the Southern Cultivator, are certainly spending large sums of money, in making it the best of all journals of a like kind, among them one of the few papers which the graved or its columns and from the men of the highest qualifications. It is sold for the low price of $1.50 per annum. In this issue it is announced that Mr. H. I. Cabe, recently Secretary of Forsyth, becomes the Business Manager. $1.00 in advance will secure the Cultivator and the Lancaster Farmer for one year.
THE WORLD OF NATURE

The world of animated nature is more splendidly represented than in any other of its kind. In the year 1860, when Grover Cleveland was a young man, the only books that he had read were those of travel and adventure. Since then, however, he has read many books and has become acquainted with the world of animated nature. In particular, he has read many books on the life of the animal world, and has come to know that the animal world is a world of wonders. In this article, Mr. Cleveland will give us a glimpse of the world of animated nature, and will show us how it is possible to live in harmony with the animal world.

THE KING FORTUNE-MAKER.

A New Process for Preventing all Perishable Articles, Animal and Vegetable from Fermentation and Putrefaction, Retaining their Odor and Flavor.

OZONE-Purified, active state of Oxygen."—Webster.

This preservative is not a liquid piccal, or any of the old and exploded processes, but is simply and purely OZONE, as produced and applied by an entirely new process. Ozone is the antiseptic principle of every substance, and is the secret of prolonged life to preserve animal and vegetable products. It is the greatest wonder of the world, and is the key to the mystery of life. The new Preservative, will not preserve for all time in a perfectly fresh and palatable condition.

The value of Ozone as a natural preserver has been known to our older chemists for years, but, until now, no measures of producing it in a practical, inexpensive, and simple manner have been discovered. Microscopic observations prove that certain animal and vegetable structures, when exposed to the action of the atmosphere, develop and develop upon the ozone, which is the preservative of life. The ozone, applied by the present method, enters into the ozone of the ozone, and destroys these germs at once. This process, and every visitor to the ozone, will become acquainted with the ozone, and will find in every way the ozone a valuable and desirable product.

PRESERVATION. Preservatives and spices are used in the ozone of the ozone, and the ozone is the preservative of life. Ozone can be obtained by the ozone of the ozone, and it is the preservative of life.

FRESH MEATS, such as beef, mutton, veal, pork, poultry, game, fish, &c., preserved by this method, can be shipped and sold. Experiments have been made upon purple, green, and gray meats, and the results have been very satisfactory. These meats have a fresh taste and are not affected by the ozone, which is the preservative of life. Ozone is the preservative of life, and it is the preservative of life.

VEGETABLES can be kept for an indefinite period without fermentation—hence the great value of ozone in the ozone of the ozone. Ozone is the preservative of life, and it is the preservative of life.

The juice expressed from fruits can be held for an indefinite period without fermentation—hence the great value of ozone in the ozone of the ozone. Ozone is the preservative of life, and it is the preservative of life.

Dead human bodies, treated with ozone, are not decayed, and in a natural condition for weeks, without any danger. The preservatives of life, and it is the preservative of life.

There is no change in the slightest particular in the appearance of any article thus preserved, and no trace of any foreign or unnatural odor or taste. The process is so simple that a child can operate as well and as successfully as a man. There is no expensive apparatus or machinery required. A room filled with different articles, such as eggs, meat, fish, &c., can be treated at one time, without additional labor or expense.

In fact, there is nothing that ozone will not preserve. Think of everything you can that is perishable, and you will see that ozone is the preservative of life, and it is the preservative of life.

There is not a township in the United States in which a live man can not make any amount of money, from $100 to $500 a month, at least, if he will take the trouble to get a live man interested in each county in the United States in whose hands we can place this Preservative, and through him secure the business which every county ought to render.

A FORTUNE Awaits Any Man who Secures Control of OZONE in any Township or County.

A test package of Ozone, containing a sufficient quantity to preserve one thousand dozen eggs, or other articles in proportion, will be sent to any applicant on receipt of $5. This package will enable the applicant to pursue any line of business, and to become perfectly furnished with the preservative, at no expense whatever. The preservative, being of such a nature, is perfectly harmless, and can be used absolutely free of cost. It is the preservative of life, and it is the preservative of life.

To prove the absolute truth of every thing we have said in this paper, we propose to place in your hands the means of proving for yourself that we have not claimed half enough. To prove the absolute truth of every thing we have said in this paper, we propose to place in your hands the means of proving for yourself that we have not claimed half enough.

How to Secure a Fortune with Ozone.

A test package of Ozone, containing a sufficient quantity to preserve one thousand dozen eggs, or other articles in proportion, will be sent to any applicant on receipt of $5. This package will enable the applicant to pursue any line of business, and to become perfectly furnished with the preservative, at no expense whatever. The preservative, being of such a nature, is perfectly harmless, and can be used absolutely free of cost. It is the preservative of life, and it is the preservative of life.

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REFERENCES.

The following is a list of references which we have not included in this article, but which we will publish in our next number:

2. "Ozone," by Mr. Cleveland.
3. "Ozone," by Mr. Cleveland.
4. "Ozone," by Mr. Cleveland.
5. "Ozone," by Mr. Cleveland.
6. "Ozone," by Mr. Cleveland.
7. "Ozone," by Mr. Cleveland.
8. "Ozone," by Mr. Cleveland.
10. "Ozone," by Mr. Cleveland.

How to Secure a Fortune with Ozone.

The $2 you invest in a test package, will surely lead you to secure a township or county, and then your way is absolutely clear to make from $500 to $1000 a year, without any labor except to send your letter to:

PRENTISS PRESERVING COMPANY, Limited, S. E. Cor. Ninth & Race Sts., Cincinnati, O.

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It is conceded that this large and comprehensive book, (advertised in another column by J. C. McClure & Co., of Philadelphia, the well-known publishers of Standard Farm Books,) is not only the newest and improved, but altogether the best work of the kind which has ever been published. Thoroughly treating the great subjects of general Agriculture, Live-Stock, Fruit-Growing, and general subjects of farming in general, this work will be found to be equal in quality and very much better in the country, even though the best should cost a hundred dollars per pound.

We have made this crop a study and give our customers the result of many years observation. For those who may desire to be informed as to the latest crops, we have studied the results of the last hundred shares of cabbage raised expressly to produce seed for the coming season, and from which selections are made with scrupulous care, guided by experience. Not a single grain of seed is raised from stocks all selected Heads.

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THE LANCASTER FARMER,
A MONTHLY JOURNAL,
Devoted to Agriculture, Horticulture, Domestic Economy and Miscellany.

Founded Under the Auspices of the Lancaster County Agricultural and Horticultural Society.

EDITED BY DR. S. S. RATHVON.

TERMS OF SUBSCRIPTION:
ONE DOLLAR PER ANNUM,
POSTAGE PREPAID BY THE PROPRIETOR.

All subscriptions will commence with the January number, unless otherwise ordered.

Dr. S. S. Rathvon, who has so ably managed the editorial department in the past, will continue in the position of editor. His contributions on subjects connected with the science of farming, and particularly that specialty of which he is so thoroughly a master—entomological science—some knowledge of which has become a necessity to the successful farmer, are alone worth many times the price of this publication. He is determined to make "The Farmer" a necessity to all households.

A county that has so wide a reputation as Lancaster county for its agricultural products should certainly be able to support an agricultural paper of its own, for the exchange of the opinions of farmers interested in this matter. We ask the co-operation of all farmers interested in this matter. Work among your friends. The "Farmer's" only one dollar per year. Show them your copy. Try and induce them to subscribe. It is not much for each subscriber to do but it will greatly assist us.

All communications in regard to the editorial management should be addressed to Dr. S. S. Rathvon, Lancaster, Pa., and all business letters in regard to subscriptions and advertising should be addressed to the Proprietor. Rates of advertising can be had on application at the office.
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THE LANCASTER FARMER.

LANCASTER, PA. JUNE, 1882.

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Pacific Express 10:35 a.m.

Way Express 10:35 a.m.

Niagara Express 10:35 a.m.

Harrisburg 10:35 a.m.

Hannover Accommodation 11:15 a.m.

Harrisburg 11:20 a.m.

No. 2 via Columbia 11:25 a.m.

Sunday Mail 12:00 a.m.

East Line 12:05 a.m.

Frederick Accommodation 12:10 a.m.

Columbia Accommodation 1:50 a.m.

Harrisburg Express 2:35 a.m.

Pittsburg Express 7:30 a.m.

Philadelphia Express 8:20 a.m.

Cincinnati Express 11:50 a.m.

EASTWARD.

Lancaster, 2:35 a.m.

Philadelphia, 3:15 a.m.

Cincinnati Express 3:15 a.m.

Lancaster, 4:00 a.m.

Harrisburg 5:25 a.m.

Columbia Accommodation 5:30 a.m.

Pittsburg Express 7:20 a.m.

Cincinnati Express 11:50 a.m.

The Hanover Accommodation, west, connects at Lancaster with Niagara Express, west, at 5:30 a.m., and will run through to Hanover. The Frederick Accommodation, west, connect Lancaster with East Line, west, at 2:10 p.m., and runs to Frederick. The Pacific Express, east, on Sunday, when flagged, will stop at Middletown, Elizabethville, Mount Joy, and Landisville.

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11-3-13

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And Manufacturers of Furniture and Chairs.

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A general assortment of furniture of all kinds constantly on hand. Don't forget this unique store.

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Over Burk's Grocery Store.

For Good and Cheap Work go to F. Vollmer's Furniture Warehouse,

No. 309 North Queen St. (Opposite Northern Market), Lancaster, Pa.

Also, all kinds of pictures frames.

Nov-13

Great Bargains.

A large assortment of all kinds of Carpets are still sold at lower rates than ever at the Carpet Hall of H. S. Shirk, No. 202 West King St.

Call and examine our stock and satisfy yourself that we can show the largest assortment of these Brussels, three-pile and ingrain carpets at all prices—of the lowest Philadelphia prices.

Also on hand a large and complete assortment of Bag Carpets. Satisfaction guaranteed both as to price and quality. You are invited to call and see my goods. No trouble in showing them even if you do not want to purchase, and I don't forget that you can save money here if you want to buy.

Particular attention given to customer work.

Also on hand a full assortment of Counterpanes, Oil Cloths and Blankets of every variety.

Nov-17

Philip Schum, Son & Co., 38 and 40 West King Street.

We keep on hand of our own manufacture, Quilts, Coverlets, Counterpanes, Carpets, Bureau and Tidy Covers, Ladies' Furnishing Goods, Novelties, etc.

Particular attention paid to customer Bag Carpet, and seconding and dying of all kinds.


Nov-13

The Holman Liver Padi

Cures by absorption without medicine.

Now is the time to apply these remedies. They will do for you what nothing else on earth can. Hundreds of citizens of Lancaster say so. Get the genuine at Lancaster Office and Salesroom, 22 East Orange Street.

Nov-13

C. R. Kline, Attorney-at-Law.


Nov-13
using commercial fertilizers, if necessary to promote a vigorous growth for that purpose.

3d. Keep the surface of the land mulched by letting something remain on it, to protect the roots of the grasses and imprison the fruits of decomposition.

4th. Feed on the farm the most of its products, and make beef, pork, mutton, wool, &c., &c., rather than depend upon raising and selling grain for a livelihood.

He also states with emphasis that the importance of this last injunction cannot be over estimated. Money could be profitably expended to raise food to be fed on the farm, whilst the same amount expended on the same land for raising grain to sell would result in loss.

Mr. Fullerton further alleges that he advances no theory, the value of which he has not practically tested and proved. According to his rule, the growing of all crops on the farm is possible. To some form, he must have, to cultivate profitably. Barn-yard manure must be the chief reliance, and, when made, it must be better cared for than is usually the habit.

A story is told of a farmer whose lands failed to produce a crop, upon which he finally applied to his minister, to pray over his fields. The good man consented, on condition that he would accompany him and point the fields and crops he desired to be prayed for. In going along, they arrived at a particularly unpromising field, and here the farmer thought a very special prayer should be offered; but the minister only shook his head, and very sensibly replied in his own vernacular, "Eik gosta nor der welt elt mer bo do bolt do, "I do not wish." The minister doubtless had had sufficient experience to know that the Lord does not work arbitrarily in man's behalf, but through medio best adapted to ends, and, that the media best adapted to poor lands, is manure, manure, manure.

**POTASH IN PLANTS.**

Potash is one of the absolute necessities of all plants, and the time was when in order to obtain this substance for other purposes it was extracted largely from plants by mechanical means. While the phosphoric acid directs itself mostly to the development of the seed, potash applies in the greater part to the perfecting of roots, leaves and stems, as exhibited in the following table:

<table>
<thead>
<tr>
<th>Plants</th>
<th>Potash, per 1000 pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>50 lbs.</td>
</tr>
<tr>
<td>Straw, Hay</td>
<td>10 lbs.</td>
</tr>
<tr>
<td>I. Hay</td>
<td>10 lbs.</td>
</tr>
<tr>
<td>Rye</td>
<td>50 lbs.</td>
</tr>
<tr>
<td>Rye straw</td>
<td>10 lbs.</td>
</tr>
<tr>
<td>Corn</td>
<td>50 lbs.</td>
</tr>
<tr>
<td>Oats</td>
<td>10 lbs.</td>
</tr>
<tr>
<td>Beans</td>
<td>10 lbs.</td>
</tr>
<tr>
<td>Barley</td>
<td>10 lbs.</td>
</tr>
<tr>
<td>Rice</td>
<td>10 lbs.</td>
</tr>
<tr>
<td>Peas</td>
<td>10 lbs.</td>
</tr>
<tr>
<td>Hay</td>
<td>10 lbs.</td>
</tr>
<tr>
<td>Pea straw</td>
<td>10 lbs.</td>
</tr>
<tr>
<td>Hemp, hemp</td>
<td>10 lbs.</td>
</tr>
<tr>
<td>Beans</td>
<td>10 lbs.</td>
</tr>
<tr>
<td>Rice straw</td>
<td>10 lbs.</td>
</tr>
<tr>
<td>Wheat straw</td>
<td>10 lbs.</td>
</tr>
</tbody>
</table>

**KITCHEN GARDEN FOR JUNE.**

The labor of the gardener in this month, will mainly consist in the tillage of the growing crops in this latitude. The rapid growth of weeds at this season will admonish him of the necessity of timely exertion.

The aid of appropriate tools in the culture of crops, and extermination of weeds will be commended. Good implements are indispensable to success, and he who has provided them will not only have greater pleasure in his labors, but the profit which attends the judicious application of them in both time and labor.

**Asparagus-roots keep clean.** Beans, bush or French, plant for succession, and cultivate those in growth. *Beta*, thin the late planting. Broccoli, dito, especially the sorts which it is desired shall come in use in September and October, give an advance, as well as transplanting Celery, plant out a portion for early use. Cucumbers, sow successive crops. Corn, Sugar, plant for succession. Endive sow. Leeks, thin or transplant. Puts, a few may be planted for succession.—*Lancaster's Hill, Roy.*

As the foregoing directions are intended to be effective from the very beginning of the month, and as our Journal is never issued before the middle of it, yet, as the season is in the full half of a month later than the average, they are not inappropriate to the period at which our patrons will receive them. Indeed, at any season, there are few so far before-hand in their work, as not to be benefited by such advice if they heed them, and avail themselves of its practical benefits. Especially are those items which relate to *succession*, matters of interest, not only to the gardener, but also to consumers of garden crops. "Succession," or "cropping," of garden vegetation, is very little more of a specialty now than it was a quarter of a century ago, except in the vicinities of large cities. In Lancaster county we are beginning to find green corn in market late in October, but that is pretty much all of the early summer vegetables we find at
EXPORTS OF CHEESE.

The following are the exports of cheese from New York to the under-mentioned ports since May 1, 1881 (beginning of the trade year), and for the same time last year:

<table>
<thead>
<tr>
<th>Port</th>
<th>1881-1882</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Liverpool</td>
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</tr>
<tr>
<td>London</td>
<td>473,017</td>
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</tr>
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<td>Glasgow</td>
<td>3,413,572</td>
<td>3,641,286</td>
</tr>
<tr>
<td>Brussels</td>
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<td>1,731,059</td>
</tr>
<tr>
<td>Cardiff</td>
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<td>92,000</td>
</tr>
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<td>Hamburg</td>
<td>65,257</td>
<td>1,155,376</td>
</tr>
<tr>
<td>Newcastle</td>
<td>84,300</td>
<td>171,076</td>
</tr>
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<td>Liverpool</td>
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<td></td>
</tr>
<tr>
<td>Bremen</td>
<td>641,245</td>
<td>1,084,547</td>
</tr>
<tr>
<td>Other ports</td>
<td>5,590,449</td>
<td>2,095,442</td>
</tr>
</tbody>
</table>

Total—10,927,690, 27,762,566

Exports of Oleo-margarine.

The following are the exports of oleo-margarine from New York to the under-mentioned ports since May 1, 1881, and for the same time last year:

<table>
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Total—10,946,765, 8,983,668

The above, which we clip from the columns of The American Dairyman, exhibits an appreciation in our exports of Cheese during last year, of 2,130,829 pounds, which, at a price of 24 cents, would amount to the handsome sum of $251,042. 80. That is certainly some advance, so far as the exportation of cheese is concerned.

Our exports of Oleo-margarine during the same period shows an increase of 1,481,101 pounds. (Whether Oleo-butter or cheese, the tables don't state,) but, at the same rate per pound, it would amount to $145,110,10, also a very respectable advance as a domestic exportation.

These two items of increase aggregate 3,623,727 pounds, and contribute to $362,072.90. Does this indicate the tendency whether in the form of butter or cheese—is becoming more popular than it formerly was in the foreign market? If Oleo-margarine is healthful and can be furnished at a lower price than genuine butter or cheese there certainly will grow up a market for it, because the masses of the people cannot afford to pay the prices that are now demanded for the genuine article, especially butter. And, as to quality, nine out of ten would prefer good oleo-margarine to rancid, oily butter.

The exhibit of the butter exportation does not look so favorable. From the same tables we discover that there was a depreciation in the item of butter, during the same period, of 9,854,873 pounds, which, at the nominal price of twenty cents per pound, would amount to $1,970,974.60, which absorbs the increase in cheese and oleo-margarine, and exhibits a reduction in last year's operations amounting to 6,234,159 pounds, and $1,608,191.70.

The fact that the last short grass crop of last year may have been the cause of the short butter crop, although we might naturally suppose it would have had the same effect upon the production of cheese, unless, indeed, the oleo-margarine had been "snuggled in" as genuine cheese.

We ought to do better in the butter business the present year; and yet, just now, (May 13th,) it looks more likely that we may be "drowned out," or "rotted out," than be "dried out."

As pertinent to the subject we append the following from the source above named:

MARKET FARM PRODUCTS.

What may be called a "gilt-edged"-margarine, truthfully or otherwise, it is an undeniable fact that since it has been put upon the market the butter has presented itself in better form, sweeter flavor, and in every way more worthy of being recognized as a prime product of the American dairy. Mr. Starr, of Echo Farm, was one of the first to get a dollar a pound for the delicious butter sent to New York, Boston and other cities. This came to market in neat half-package wrappers wrapped in snow-white linen, and when the winds and the June grasses upon which the cows fed. If there is a paradise for cows on earth Echo Farm is one, and a worthy model, creditable to the heart of a humane farmer.

Now, we have many dairies sending sweet, waxy, golden and aromatic butter to the market, perfectly gratifying the most fastidious of our citizens. These dairies and these products honor such names as Have-
meyer, Coe, Crozier, Holly, Diasmore, Park, Valentine, and scores of others. The great majority are worthy competitors in gilt-edged butter.

Cheese, eggs, poultry and fruits, put up in a next manner, are always acceptable to the purchaser, and bringing remunerative prices to the producer.

In Baltimore and Philadelphia, for many years, poultry came to market nicely drawn, fresh, sweet, and tender, and we think now, in New York and Boston, the hotel-keepers demand drawn poultry. They are posted in such matters, for they cater to the most exacting bill of fare. The hotel-keepers, in endeavor to keep a first-class hotel knows what human provender should be.

Compare our first-class retail groceries now with what they were ten years ago. The demands of consumers require goods neatly put up, the stores to be kept clean, and the clerks attired in immaculate white. In fact, we have mutton that has been brought into the market, nail last year, and the question was "How long, number of years, and the object they are only about one-third the length of hands." These fishes attain a length of from twelve to eighteen inches, and their edible qualities are not of a very high order—too dry and insipid.

PYRETHRIUM ROSEUM.

The illustration of this comparatively new insecticide, which we publish, is another number of the FARMER, was originally intended to have accompanied the history, etc., of the plant, which appeared in our May number, but which we did not receive in time. To those of our patrons who possess regular files of our journal, it will be little or no inconveni-ence to make the necessary corrections in two consecutive numbers, if it does not facilitate reference there. We believe that both amateur and professional flower growers might do many worse things than to cultivate this plant, both for utility and ornamentation. By carefully gathering the flowers after they had accomplished their ornamental object, and for kitchen use, they would have ready access to an antidote against those insects and other pesti-

shrubs that produced them. Thurler's labels are exquisite specimens of taste and art. "Straws tell which way the wind blows." Let farmers' wives and daughters tastefully decorate the packages of farm products and they can afford to dress in silk.

THE CONESTOGA FLYING FISH.

In regard to the rumor of a flying fish having been caught in the Conestoga, at Wabank, Ill., last fall, we believe, least, turned out to be a "garrard." Before the week was out I handled three specimens, and that "settled it." Now, it is impossible that the fish in question should have been caught in the Conestoga, but it is altogether improbable. About forty years ago a genuine sturgeon was caught in the Susque- hanna, above Marietta, in a "fish basket," and, I think, is still extant, in possession of Judge Libhart, of Marietta; and just here I would suggest that that specimen ought to be in the museum of the Linnean Society. This supposed Conestoga fish is a species of the "Flying Gurnard," Prionotus celtus, of Deyck, also called "Sea-Robin" and "Gran-
ter," from a grunting noise it makes when taken out of the water. It belongs to Cuvier's first order, and second family of Bony-Fishes, the first family(Perleide) being typified by the common perch. The family to which this subject belongs includes the "hard-checked" fishes, and the attempt to "palm it off" as a Conestoga fish smacks very much of a hard- checked adventure. I have now two speci-

mens of it, obtained from second persons, who could not tell whence they originally came, and at the time these specimens were caught in the Conestoga and the Susquehanna, they may have been more to enhance the value of the fishes than to "sell" the naturalists. They are an Atlantic coast fish, and abound from the Carolinas as far northeast as Nantucket, feeding, according to Deyck, on small mollusks and crustaceans. They have the power of making a short flight by the aid of their large pectoral fins, when pursued by their enemies, but they are not the true flying fish (Eucottopterus) and do not belong either to the same family or the same order. The pectoral fins of the true flying-fish are longer than the body, and the object they are only about one-third the length of hands. These fishes attain a length of from twelve to eighteen inches, and their edible qualities are not of a very high order—too dry and insipid.
VENNOR PREDICTS A BAD SUMMER.

Vennor, the Canadian weather prophet, was written to concerning the significance of the recent aurora. In his answer he says:

"The approaching summer will be cold and wet over a very considerable portion of the continent, south and west. He should not be surprised should each month for the remainder of the year bring frosts. In past years brilliant auroras at this time in April at Toronto, New York and more southern points, have most invariably been succeeded by cold and wet summers." It is becoming a serious question whether, after all, Vennor may not be something of a weather prophet. His prophecies up to the present date (June 6th) have come much nearer the true state of the weather than a goose is to a turkey," hard-shelled literalists to the contrary notwithstanding. No prophecies, perhaps, have ever come literally true, from the beginning of history down to the present time, and perhaps never will, nor is it necessary that they ever should. Of course, if the above predictions of Vennor come literally
true an abundant harvest of hay, corn and pignuts will follow them as a shadow follows its substance. To your humor it may be no prophecy we intended as such, but simply a mathematical conclusion, as twice 2 are 4.

**CADDICE FLIES.**

An Insect that Walls Itself Up.

In answer to an inquiry made of him, our learned scientific friend, Dr. Ratilov, writes as follows:

W. U. Hensel, Esq.—Dear Sir: The curious little worms, enclosed in a gravel-covered following the earth, that are commonly seen on spring occasions recently observed in a spring in Franklin county, are commonly called "cadde ice worms" or "ease worms," and are the larvae of a Neuropterous (fly) winged insect. The general characteristics are long antennae, compressed body, wings longer than the body, and with a few transverse false wings. They are grayish, brown, and blackish color, but not very brilliant. Their flight is sluggish and they are usually found near ponds, streams and pools of water, and they are very fond of confinement. Their development is very interesting. The female fly deposits her eggs either on the water or on some plant or other object in the water, which hatch into worm-like forms. The adult fly, from the egg it seeks the bottom of the pool and begins to construct a sort of oblong cocoon out of finely spun silk or webbing, and as the beetles increase in size in it increases the length and diameter of its case, incorporating with it, on its outer surface, small particles of whatever it may find on the bottom of the pool or spring; if sandy it will be covered with the larger grains of sand or gravel. But if such material is not at hand it will use small portions of leaves, stem stems, or anything it can conveniently appropriate.

The fly makes its appearance annually in June, July and August, according to species or other circumstances, but their lives are short; during the larger part of the year (ten months or more) they are found in the water, in the form of case or cadice worm. As a fly they eat nothing, but the worm feeds on vegetation—Algae, etc.—Intelligence.

**EGGS.**

"Bees in France produced $300,000,000 worth of eggs last year."

This is, perhaps, the most egg-trainardly egg-sample of egg-culture in eggs-istic. And ought to be eggs-tended with literal egg-action to all places eggs-posed to comfficient egg-agencies, without egg-caption.

Punning aside, the above-quoted paragraph is only another practical illustration of "la Belle Franche" in the role of oviparity, and is intensely French; manifesting economical reason—are accomplished by purely economical means, and other nations, are only beginning to see, in a commercial sense. There is more profit and fewer vicissitudes in the production of small things than there is in greater things.

An egg may be regarded as a condensed chicken, containing all the nutritive elements that are to be found in a fully-developed fowl, differing only in quantity, the quality of the former being decidedly superior.

Estimating those $300,000,000 worth of eggs at twenty cents per dozen (which is a pretty high figure for France, where, 'tis said, a good dinner can be obtained for ten cents) shows the product to have been 1,500,000,000 dozens, or 18,000,000,000 of eggs, in a country not four times larger than Pennsylvania, without special reference to domestic consumption, a matter that is seldom taken an account of by producers.

Tis also said that the population has increased and thirteens ways of cooking the egg, and perhaps the object in producing so many eggs is to further duplicate their modes of culinary preparation. In any event, let our oculiculturists keep the foregoing before them as a text in their efforts in that direction. Perhaps it would be well to import French chickens, for surely they must be of the "Old Grimes" stock of "Bimitis," that "every day laid me an egg and Sunday she laid three."

**OUR CROPS.**

The readers of the Farmer are respectfully referred to the proceedings of our local society for an epitome of the crop reports from the different parts of Lancaster county; from which it will be seen that there is a tolerable, although not an entire uniformity. We prefer to let our farmers speak for themselves upon a subject about which they ought to know more than those who do not possess their experimental knowledge. There seems, however, to be a general opinion prevailing that just now (June 12) there never was a better prospect before of an A. No. 1 crop of wheat—not a bad field of wheat in the county.

We hope their most sanguine anticipations may be fully realized.

**EXCERPTS.**

In choosing a cow the crumply horn is a good indication; a full eye another. Her head should be small and short. Avoid the Roman nose; this indicates thin milk, and but little of it. See that she is dished in the face, sunk between the eyes. Notice that she is what stockmen call a handler—soft skin and loose like the skin of a bag. Deep from the loin to the udder, and very small tail. A cow with these marks never fails to be a good milker. There is more difference in cows than is usually supposed, and but few really good cows are offered in our markets.

Prof. Cook says: "After several years' experience I have only one point on which to discount the Light Braunsch; there is not quite enough white meat. Braemus should be hatched in March and April; and then we shall have abundant eggs during the succeeding winter. Let no one who keeps light Braumus forego the important suggestion to devote all their fowls to table use before they pass their second birthday."

Dogs are at present the chief obstacle to sheep-raising in Georgia. There are something like 120,000 worthless cars in the State, and their fondness for illicit mutton leads to an annual slaughter of from 30,000 to 40,000 sheep. Sometimes entire flocks are killed. A swapping dog how would no doubt interfere with "passum hunting," but it would be worth a man's time to try. I have a year to the State and sheep-risers. A gentleman estimates the profits of sheep-raising at 58 per cent., notwithstanding the loss by dogs; hang the dogs, and the profits would rise to 73 per cent.

D. G. ROBERTS says: "Now sowed corn is like a good many other forage plants. There is a right and wrong way to raise it. Planted and grown as it should be it makes valuable feed. In traveling about the country I notice but few places properly planted. A great deal is fed before it is maturely sufficient. At certain stages of its growth it is very valuable as a butter food. At just the right stage of growth it is very valuable for that purpose. I have experimented in feeding this plant for butter many times and it has always proved best just at the time that the ears are in best condition for the table."

The agricultural editor of the New York Times publishes an elaborate article on the comparative value of manures, in which he attempts to show that the manure obtained by feeding a ton of cotton-seed meal contains phosphoric acid, nitrogen and potash which it would cost $7.86 to buy in any of the commercial fertilizers, as against $6.65 worth from a ton of corn meal, $6.48 worth from a ton of good hay, and $14.50 worth from a ton of manure. This is the result of chemical analysis and good figuring. Experiments would not show so much difference but it is certain that farmers as a rule fail to take into account the comparative value of manures which come from feeding different foods. With them manure is manure, and they do not step to ask what it was made from or what it contains.

**RYE FOR WINTER AND EARLY SPRING PASTURE.**—Rye sown among standing corn will do almost equally as well for winter and early spring pasture as if it had been done at the last working of the corn, as the first rain will cause it to sprout and take root just as well as if it had been put in with cultivators. Sow not less than a bushel to the acre. Ewes and lambs and yearlings may be then turned on it after Christmas, and kept on until the Ist of April, when it may be set apart either to turn under as a manure or used for a crop.

**INCREASING FARM MANURE.**—A very good plan for increasing the supply of home-made manure, may be adopted by farmers generally with equal success. It is merely by placing in alternate layers rich stable manure and turf and sods until the heap is some six feet high and as long as you please, and then, after a time, beginning at one end of the pile to turn the whole over. As the turf and sods rot they will absorb the rich gases generated by the manure, and which might otherwise escape thus forming a most excellent compost for all kinds of crops.

An Illinois farmer who keeps twenty horses, some of them worth $1,500 each, writes that he pastures them at all times in fields fenced with barbed wire, has done it for years, and had no harm result from it. Before
turning them out he first leads them to the fence and lets them rub their noses against the bars, and the hint is sufficient. They know enough after that to keep away from the fences.

To prevent falling off of hair from a horse's mane, or to restore the growth, rub the skin of the part with the following mixture, viz.: One pint of alcohol and one dram of tincture of cantharides. Give the horse a dose of salts (12 oz.) and feed them wheat bran, which will alay the irritation of the skin, to which the loss of hair is due.

Wheat is more valuable cut at a stage which would be commonly considered a little early than when left to become over-ripe. The cellulose or woody fibre rapidly increases in the days of over-ripening, giving more bran and less flour, thus materially reducing the milling value of the wheat.

A cubit is two feet.
A pace is three feet.
A fathom is six feet.
A palm is three inches.
A league is three miles.
There are 2,750 languages.
A great cubit is eleven feet.
Two persons die every second.
Bran twenty pounds per bushel.
Sound moves 743 miles per hour.
A square mile contains 640 acres.
A barrel of ice weighs 300 pounds.
Slow rivers flow five miles per hour.
A barrel of pork weighs 200 pounds.
A barrel of flour weighs 100 pounds.
An acre contains 4,840 square yards.
Oats, thirty-two pounds per bushel.
Barley, forty-eight pounds per bushel.
A hand (horse-measure) is four inches.
A span is ten and seven-eighths inches.
A ride ball moves 1,000 miles per hour.
A storm blows thirty-six miles per hour.
A rapid river flows seven miles per hour.
Buckwheat, fifty-two pounds per bushel.
Electricity moves 229,000 miles per hour.
A hurricane moves eighty miles per hour. The first hurricane match was made in 1829.
A firkin of butter weighs sixty-six pounds.
Coarse salt, eighty-five pounds per bushel.
A tub of butter weighs eighty-four pounds.
The average human life is thirty-three years.
Timothy seed forty-five pounds per bushel.

AGRICULTURAL.
SORGHUM seed is readily eaten by poultry, and is better for small chickens than corn.
Milk should stand at least thirty-six hours before skimming to get good results. Farmers take notice.

Kill the dog first and hunt for his owner afterwards, is the maxim of certain Georgia farmers who mean to make sheep-raising profitable.

Cockle seed will remain in the ground many years if untouched by the plow. As soon as brought to the surface they begin to sprout.
If sulphur is well dusted around the seeds and hog-pens it will effectually drive off lice. Dust it on the hogs also, and leave a little in the trough for them to eat.

HORSEKALDIEST is a profitable crop to grow as it finds sale at from five to six cents per pound unprepared. It is bought readily by manufacturers of the prepared article.

NEARLY all kinds of fruit do well on a mixture of superphosphate and wood ashes. Lime is not suitable for strawberries, but excellent around apple, peach and pear trees.

Every farmer should select a portion of rich soil, clear from weeds, which should be devoted to roots, such as beets, turnips, rutabagas or carrots for feeding cattle and hogs. They are good starters for fall feeding.

CONTRIBUTIONS.

COMPARATIVE VALUE OF FARMS BETWEEN NOW AND FIFTY YEARS AGO

Fictitious Value—Good Crops—Good Governments—Tariffs, Etc.

Are our Lancaster county farms worth what they now bring at a sale? Or, are these prices fictitious, like they have been at different periods in our history for several generations back? These are questions of some importance, raised among many classes of people. Even politicians make it a point to discourse on the subject of Lancaster county farms, apparently with a view to lessen the bulk of taxes. I say apparently, for really it seems when politicians get into office they are so much absorbed with ideas of personal emolument, in the form of salaries, fees and perquisites that one must doubt all protestations. Many politicians, who are such for the sake of pelf and gain—for self and spols—are prone to "set up" and manipulate political tickets that cannot but extort high taxes (from those fine Lancaster county farms) in order to fill their own pockets, while the farmers themselves are doomed to rustic toil, earning their bread by the sweat of their brows.

Many years ago we heard that in the city—Connecticut for instance—farmers and tobacco growers, were buying their manure in New York, and other large towns, at a cost of $10.00 per cord, five cords to the acre, making $50.00 a year. Now, manure, we have thought simply enormous. But we are fast following in their footsteps, and in addition, apply 100 bushels of lime to the acre; in all feeding up $600; and, after repeating this operation for a number of years, our lands, together with the outlay for fences, buildings and other improvements—such as houses, barns, sheds, &c.—these coveted fruits, the eyes of which some of the avaricious officialholders are fixed upon, will cost from $100 to $600 per acre, not including the original cost of the land. But a farm in itself alone, even with fences and farm buildings, is like a house, all below water, if it is intelligently and practically operated, and for this purpose we must add the usual live-stock and implements—for instance—four good horses, $800; four cows $200; besides implements such as wagon, plows and harrows, running up to $2,000 on a one hundred acre farm. A good practical farmer will also need $1,000 worth of cattle, and $1,000 worth of sheep in the fall, to make manure, finally running up a bill of $4,000, for all of which he is compelled to pay a heavy burden of taxes.

Now comes the great problem, "Does it pay," or in other words, can a man realize any amount of interest at these figures, or are the prices fictitious? The old sayings are "Experience is the best teacher," and "Practice makes perfect," but, an inexperienced man may say, "Why, do not farmers realize so much bales of wheat, corn, &c., from an acre, and lastly so many pounds of tobacco," which must surely come to a conclusion. Well I will only say, "try it." Buy a farm at the present prices of land—fictitious or otherwise—if you ever get hold of so much money, and farm for yourself, or rent a farm, and at the end of the year, or a number of years, tell us all about your experience and success; but, the best proof you can adduce, will be the ability to buy another farm in eight or ten years thereafter. This question is one open for consideration, but to me it looks as though lands and other properties, at the present day, have a more real value than at any previous period, notwithstanding the small profit realized out of them.

Taking into consideration the interests of the railroad as a standard of values, in addition, we are still better off with the $200 per acre farm, than were we with the $50 or $100 per acre farm; moreover, in Pennsylvania there is yet a great deal of room for improvement. Farmers and growers of produce are not men up to England and other countries. We are even gathering up the bonese of dead cattle to be shipped or exported to other countries, which we could otherwise use with advantage as a food for the world. Those millions worth of manure, and material which would make manure, or fertilizers, are lost here annually. I contend that we should not stop short of raising—as an average—thirty bushels of wheat or one hundred bushels of corn, or sixty bushels of oats, or twenty-five hundred pounds of tobacco to the acre, and make our farmers pay a compensating interest at these figures. I hope the time will come when all, without exception, shall become so educated as to be really practical farmers and mechanics, and also up to the requirements of the times; and not so merely in pretension, or name. That is about all the advice we can give. Labour intelligently selected, and vote intelligently for such law-makers as will make laws for the people; to submerge their interest and not their own, except so far as they are integral parts of the people; and not to legislate in the service of "treason stragglers, and spols," merely. Right here I would respectfully ask my friend—who so politely criticised me sometime ago, when in an essay I stated, in allusion to the tariff, that the "balance of trade," was in our favor, and that it was a better sign of prosperous times than when the balance was against us—what he has to say now, since the balance of trade is going strongly against us? Is it better to sell our surplus to Europe than to sell it here at home, unless we cannot possibly use it here? We are importing about $3,000,000 worth of goods per week, and our exports during last year are far below the year 1880. It seems to me that this must ultimately result to our disadvantage.—P. S. R., Lititz, June 8, 1882.
ON WHEAT CROPS.

Recollections of Over Fifty Years Ago.

The winter of 1827-8 was so mild that the oats that fell to the ground in the oat fields of the previous summer remained all winter in the soil unjured, and grew up the following spring almost as rank as if it had been specifically sowed. There has been no such a mixture of oats and wheat since that time. The wheat crop was very good; the grains of wheat were very plump and full, weighing from 60 to 65 pounds to the bushel, so that the wheat and the oats were easily separated in winnowing.

We generally have but one good wheat year in six; the intervening years averaging from three-quarters down to one-half, or even one-quarter of a crop. The price of wheat in 1828 was seventy-five cents per bushel. In 1836 and in 1837 the wheat crops were very poor—cause, the Hessian-fly. Many fields were pastured. The kinds of wheat then generally cultivated were the “blue-stem” and the red-hearty. The latter variety was usually sown on stubble. “Supple on red-hearty” meant that the stem did very well in good soil, but soon commenced to get smutty. The price of wheat in 1835 was $1.25 per bushel; in *June 1837, $2.31, and in 1838, $3.00 per bushel. That was the great “grass-hopper” year, and a drought also prevailed. That year we had the poorest crop of corn ever known in Lancaster county. About this time the Mediterranean wheat was imported. It was at first a little rough, but was supposed to be fly-proof; it was at least not affected for some time, and took the place of the “blue-stem” and improved in quality. In 1844 or 5, we had again a very good wheat crop, on high grounds. On low and level grounds the wheat was entirely destroyed by a black frost in June. The Mediterranean was generally sown up to 1850, when a man in Paradise township, Lancaster county, noticed a bush of Red-hearty wheat growing in a wheat of a different variety. He secured it and propagated a new variety. It was an improvement on the old, or “white Mediterranean,” as it was named. Sometimes the new was mixed the red, and by 1855 it had almost entirely displaced the place of the old. About that time “something new” appeared, several years in succession. The wheat looked remarkably well all spring; made straw apparently to yield from twenty-five to thirty bushels of grain to the acre, and many fields only yielded from five to ten bushels to the acre. The cause was never definitely discovered. Some said it was the “weevil;” others believed it was caused by atmospheric poisoning when the wheat was in bloom. Others about 1850 had again a severe wheat failure in the larger portion of Lancaster county in a new way. The season was a little dry the previous fall; the winter was without snow, dry and very cold, the thermometer registering from fifteen to twenty-five degrees below zero; cold blizzards prevailed, with occasionally a few inches of snow, which was drifted from the fields mixed with surface snow and the bare ground could be seen in many fields in the middle of May. The yield was only five to fifteen bushels per acre, in the greater part of the county. About the year 1875 the “Foltz” wheat was introduced into Lancaster county, and at first had the appearance of supplanting the Mediterranean again, but the millers did not like it in the manufacture of superfine flour and it is a wheat also that will not make much straw, unless sown on very rich, low lands. A great many of the farmers who raised it, went again to the Red Mediterranean, and at the present time we have about three-fourths in a growing condition. Unless the Foltz wheat improves soon, it will likely be abandoned altogether. As for the present crop of wheat, it so far promises to be the very best ever grown in Lancaster county, and a poor field of wheat cannot be seen in a whole day’s travel through the county. If nothing unforeseen happens the yield might be from twenty-five to forty-five bushels to the acre. It is all well with the skyward state of the weather in maturing and harvesting, but the earlier it matures, the less it will be in danger of mildew. We have had the different varieties of wheat in our county. Some far preferable to others. I have not the least doubt that new and improved varieties could be raised, if farmers or the men who operate the reapers, would keep a vigilant watch for stray heads of wheat that are superior to those around them; and in that way we might produce a hardy and prolific variety of wheat that would be better adapted to our climate, and make a more sure crop, and less liable to the kinds of weather that are so injurious to our past and present varieties have been, especially the varieties that originated in Paradise township about twenty years ago. It would be a very good thing if our local Agricultural Society would offer a liberal premium for the best new variety of wheat, selected from among our own wheat fields. It might originate a variety that would regularly average a yield of from twenty-five to thirty bushels per acre.—*L. S. R., Oregon June, 1882.*

**ESSAYS.**

INSECTS AND SOME OF THEIR RELATIONS TO THE VEGETABLE KINGDOM,

“Creative wisdom never works in vain nor merely in sport.”

Sir John Lubbock estimates that there are seven hundred thousand species of animals inhabiting this world of ours, the smaller moiety of which have been recorded and described, and perhaps the larger number of those described belong to the class INSECTA. It may assist you in fully comprehending the true import of species, when I state that it means different kinds of animals, and that a single species may comprise millions of individuals, and almost an endless number of varieties; and that by a consecutive series of progenieations each species is capable of reproducing its specific kind to an almost limitless extent, and doubtless would do so, if it were not that in the economy of nature itself there are center-influences, through which a sort of equilibrium is preserved.

It has also been carefully estimated by intelligent and experienced authorities, that the losses annually sustained, by the United States alone, through the depredations of noxious insects, amounts to the enormous sum of four hundred millions of dollars; and this, from the standpoint of experience, do I not consider an exaggerated statement. It is not difficult to make an estimate of this kind when we reflect that in the single State of Kansas alone, for a period of only a few years, the nearest entire crop of the vegetable productions of certain districts was totally destroyed by the influx of the “Rocky Mountain Locust,” commonly called grasshoppers.

These preliminary statements bring me immediately to the door of the leading topic of this essay, namely: “The relations existing between insects and plants in the economy of nature;” and, not only in nature’s economy, but also, correspondingly, in social, commercial and domestic economy. When I say plants, I mean the entire vegetable kingdom, although I refer with special reference to the crops confined to a few incidental references to either insects or plants, and those mainly of a general or popular character.

Notwithstanding the admitted destructive character of noxious insects, it cannot be positively demonstrated that the immediate extinction of insect life throughout the world, is a thing to be seriously desired. If the universe, and all the living beings therein, are the outbirths of a Diene Economy, overruled by an Infinite Intelligence, then we may rationally conclude that the existence of noxious insects would not have been permitted except as a lesser evil, a heaven-sent provision to some use. All other things, therefore, remaining just as they at present are, the sudden removal of the insect world from the category of animal life, might leave this globe of ours an “unwholesome” place for the human family to dwell on. Even the most annoying, repulsive, or disgusting among them, may be the scavengers, the fertilizers and purifiers of the physical world; and in that degree, useful. It is mainly through their occasional and destructive redundancy, and our ignorance of their useful functions, that they are regarded by civilized humanity, that they become a pest, or a scourge.

I pass by the little domestic honsely, and his immediate congers, as being envirous, or carvinnarous, in their developmental habits, and therefore not specially germane to the present subject. But, if we were entirely ignorant of the uses of the common “silkworm;” it might be legitimately regarded—where it is native—as one of the most destructive insects to plant foliage; that is known to its class. Compared with its size and weight it can consume a greater amount of vegetation in a given time, than any other insect extant. Instead, however, of being an injury to the human family, it has become one of the greatest factors in commercial and domestic economy. The product of this, to many, repulsive worm, amounts annually to

1. *In the spring of 1827 we paid $1.00 for a barrel of flour which we believe was the only time we ever paid that price.

2. Either our contributor or we are in error as to the *Grass-hopper year* under consideration. The only crop that failed was the oat crop in succession. On the 1st of September 1827 we became a resident of Lancaster, and remained here until April, 1841, boarding at the Cooper House, which was largely patronized by the farmers of Lancaster county, and we distinctly recall the advent of the destructive “hoppers” and their ravages over the country, except in the county of North Queen and East and West King streets, looking skyward when millions of these insects seemed to be in swarming over the Lancaster.—Ed.*
THE LANCASTER FARMER.

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many millions of dollars, and the various fabrics wrought out of its silken fibre are amongst the most elegant and brilliant that adorn the human habituation and the human body. The traffic in silk-worm eggs alone amounts to many millions of dollars, and whole trains of cars freighted with them pass through our territory in transit to European ports every year. Again; if we were entirely ignorant of the value of the little "cochineal insect"—so small, indeed, that when they are dried it requires 70,000 to make a pound—their presence would be as destructive to the vegetation they feed on, as the famous "chinch-bugs" of the Western States are to the wheat and corn crops. Where the cochineal insect is indigenous, the chief anxiety of the people is to increase its numbers, because "there is money in it." Therefore it becomes a prolific object of human husbandry, and its failure to multiply would be as much of a disaster as the failure of our wheat or fruit crops. You will perceive, then, that the increase of the silk-worm and the cochineal insect are the results of human manipulation, for it is not probable that either of them would multiply in states of unprotected and unabated nature, as they do under human intervention. The cactus, the mulberry and other silk-producing trees are carefully cultivated, and an abnormal increase of the insect is thus induced.

We have a striking instance of the effect of cultivation upon the increase of noxious insects in the notorious "Colorado potato-beetle." Far up in the Rocky Mountains this insect was discovered about sixty years ago, in moderate numbers, feeding on a wild species of solanum, and it probably would have remained there, content with its rustic fare, but for human intervention. As soon as the domestic potato was cultivated in its vicinity, it abandoned the harsh and comparatively sapless native plant and betook itself to the more succulent vines of the domestic potato; and even on the site where the insect proliferates depends more or less upon the conditions produced by cultivation.

The palatable quality of meats and drinks, even among human beings, tends to their increased consumption, and it appears that insects are no exception to the rule. The common house-moth will cut a fine, soft, woolen fabric when it is sandwiched between two coarser and harsher pieces and leave the latter untouched. Progressive culture seems to engender progressive taste even among such insignificant creatures as insects. When we discover some means of utilizing the Colorado potato-beetle, it might prove and its insecticide may become objects of as much solicitude as the increase of the cochinal and silk-worm.

Three examples—all though the utility of the potato-beetle has not yet been discovered—out of scores of others that might be named, may illustrate one phase of the intimate relations existing between insects and plants. The silk-worm, by the process of massication, digestion, absorption and secretion, elaborates the tissue known as silk; and no matter how complicated the mechanical machinery is, or how endless the varieties of the silken fabrics produced; nor how brilliant and gaudy their external sheen, they are all subordinate to the humble worm and the leafy plant. And although the cochineal does not consume the plant by masication, yet it absorbs its fluid circulation by suction; and, by a peculiar chemical sublimation, or distillation, produces the red fluid which, in the form of a bloody mark, which becomes laced in its body and rivals the famous "Tyrian Ink."

Passing to another phase of the subject I would briefly remark, that even among the most destructive insects to vegetation, there is some compensation in specific cases. Dr. Asa Fitch, of New York, records an instance of an oak tree on his premises which was infested by the common "Oak-pruning beetle," and no human manipulator of the pruning-knife could have produced the healthful and symptomatic effect upon the tree that this little insects produces of "cutting off and closing in the struggling branches—making it "a thing of beauty."

A further illustration of the peculiar relation under consideration may be found in the growth of various species of crypogamous plants in the bodies and the tissues of insects and other animal substances. Waiving all the microscopic species, I would only remark that it has long been known to entomologists, and doubtless also to botanists, that frequently a large fungous plant has been found growing out of the body of a subterranean larva of a diptera species (a "Maggot") commonly called the "white grub-worm." This grub when mature is about two inches in length, and one inch in circumference, and the largest plant, as recorded in the American Entomologist, sometimes attains a length of five inches, and grows out of the under side of the first segment of the body.

Nor is this an isolated case. Mrs. Mary Treat, a distinguished lady entomologist, of Vineyard, N. J., states in the spring of 1865, whilst botanizing in Benton county, Iowa, she saw great numbers of them. "There were literally thousands of them scattered over the surfaces of the earth. The mycelium of the fungus which had been explored the fungus seems to be unique, although it probably would grow out of different species of the white grub."

Another link in the chain of connection, or relation between insects and plants, finds illustration in what may be termed Carneivorous plants. The carnivorous character of some mammals, birds, reptiles, fishes and insects is well known, but it may not be so well known that there are certain species of plants that capture and appropriate the juicy substance of insects. They doubtless have other sources of subsistence, but it is quite certain that they derive a large part of their sustenance from the beauty of flowers. And it is a fact that if we should take one of the flowers that are known to be the staples of the "bees," and offer it to the same insect, we should find it feeding on the nectar and pollen and gathering and storing it away for its winter refuges. This is the peculiar and singular fact that is here referred to as the "bees." Among the bees, it is known that the "bumble-bee" and the "humble-bee" are especially imbibed with this habit. The little "leaf-cutters" are remarkable as pollen gatherers, and they perform a similar use—not only in monocotyledons and dicotyledons plants, but also in those bearing hermaphrodite flowers. Darwin has written a clever sized book, in which he conclusively demonstrates that the orchid, or "air plants," are fertilized largely if not ex-
From that remote period down through all the intervening ages to the present time, these two grand divisions of the organic world have progressed side by side in parallel lines of interdependence. Without the advent of animal life, the vegetable kingdom would have become either superabundant, rank, and putrescent, or sterile, abortive, and unfruitful. Without the prior development of the vegetable world, the existence and subsistence of animals would have been a physical impossibility.

The normal balance of these two organic kingdoms was mainly instrumental in rendering the physical world a fit place for the habitation of the human family. Man’s progress has not been uniformly and uninterruptedly onward; it has also been digestive, and sometimes retrogressive, and through repeated vicissitudes the equilibrium of nature has been disturbed, it is not destroyed. Instead of diminishing, as man advanced in civilization and intelligence, his mental and physical wants increased, and hence he struck out into new channels of improvement, especially in agricultural, mechanical and domestic production.

But, in destroying the normal haunts of insects and insectivorous animals, and devoting them to the cultivation of improved species of plants, he unconsciously improved, and rendered more palatable, the aliments upon which most of the noxious insects feed; and this illustrates one of the disastrous relations between insects and plants. Fifty years ago, or before the general cultivation of the tobacco plant, as a crop, in Lancaster county, the "Sphinxes" or "Horn-worms," were mainly confined to the common potato vines, and subsequently to the tomato vines, as food-plants. The "Tree-cricketts" and "Speckled-leaf" fed upon the foliage of trees and shrubbery; the "Cut-worms" and "Boll-worms" fed upon garden-vegetables and the young ears of corn; the "Grass-hoppers" upon the various species of grass: the "Flax-beetles" on the various cucurbitaceous plants, and the "Wire-worms" on cereals.

But now, all these insects and many more, and also in greatly increased numbers, feed upon the tobacco plant; not only because of its greater succulency, but because of its greater abundance and accessibility.

And just here it may be suggested that these facts may produce a series of changes that can only be anticipated in the undeveloped future. For instance; more than a score of species belonging to the insect world have been recognized and described as depredators upon the tobacco plant; and the day may come when the cultivation of this plant will be as precarious as that of the plum, which has been so largely damaged by the notorious Curculio. This little "lark" enhances the price of plums and prevents the possibility of a glut in the market, illustrating one of the many commercial and domestic relations between insects and plants.

If these things exist in relation to a fruit so luscious, so fruitful, and so popular as the plum, what may not come to pass within this century in regard to the tobacco plant. I am not arraigning tobacco, I am merely alluding to possibilities that may be realized in the future in reference to the cultivation of and traffic in tobacco. Is there any other industry in Lancaster county involving more massive buildings for its accommodation, more capital to carry it forward, more anxiety in its development and more solicitude in its results, and yet more barren in real use, than tobacco; or one, in case of every other crop failure, that would furnish less support to physical life (than tobacco). But conceding its universal utility, the relations between this plant and the insect world are such that it is doubtful whether its production will ever so far exceed its consumption, as to water in which it has been so often anticipated. The insect world will more and more furnish that check upon its redundancy, which will culminate in commercial and domestic equilibrium.

When its production is involved in those uncertainties which now distinguish the plum crop, the farmer will turn his attention to something else that will pay him better. If tobacco is, or ever becomes a borne, it will find its antithete in devouring insects. Whatever may transpire within the next hundred years, we may feel assured that only the least evil will predominate, and that we shall have one of the most interesting combinations of the relations between insects and plants in maintaining nature’s equilibrium.

The mutual relations existing between the vegetable and the insect worlds are likely to continue as long as plants exist and insects subsist upon them. Where one is found, there also will be found the other; and improved cultivation of the former is likely to result in the increased multiplication of the latter.

All that advancing civilization and human progress can accomplish, is perhaps the subordination of the insect tribes to human dominion, by discovering and applying antidotes against the possible redundance of the destructive species. And to bear out these relations with additional emphasis, it is now becoming manifest that one of the most effective insecticides, and at the same time the most harmless to human beings, comes from the vegetable kingdom. Prominent among the plants that are destructive to insect life are the different species of Pyrithrum, but especially the roseum and the cinerariifolium. These plants belong to the composite order, and are as simple in their cultivation as common asters. When the flowers of these plants are dried and pulverized, they yield a powder that is fatal to insect life.

Some insects are indiscriminate visitors or feeders on different species or varieties of plants, but others manifest a decided partiality for a particular species or genus of plants, and are seldom or never found on any other, and this is the case too, where they are not known to feed on the plant. The Scarlet Tetrapus is uniformly found on the Aeschyn, or wild cotton. The beautiful gold and green Chrysocla is always found on the "Dogbane," the pretty little Laugerina always on the cantal, and the reproductive Corus or "squat-bug," always on the squash. Many small insects, and also some spiders hide themselves in the flowers of certain plants, for the purpose of catching the visiting insects, upon which they prey. What special benefit these insects may be to the plants where they are usually found, is not particularly manifest, but it seems very clear that...
the plants subserve a useful purpose to the insects, either as food, or in attracting the harmless species upon which the rapacious species feed.

There is a nice classification from the flowers of some plants which captures or disabuses certain species of insects that visit them for the purpose of extracting their nectar or gathering their pollen: whilst other species habitually visit them, and cannot all lose their beauty or utility if they do so.

I might instance the Asclepias curvirota, or common milkweed; if, indeed, this habit is not shared by all the members of the genus. It is not unusual to find bees, wasps, butterflies, moths, and various species of flies, with their feet entangled in this treacherous gym, where they finally perish: but the scarlet Streptopus, the Harlequinized Lycaste, and the larva of the beautiful Danaus butterfly, are perfectly at home upon it. What the significance of this peculiar relation may be in all its details, is not in every instance apparent, but it is quite possible that the females of butterflies or moths so caught, are entirely defeated in the deposition of their eggs where the development of their progeny would be assured—if they had not performed that important function before they had been so fatally captured.

There are also many species of subterranean insects which are carnivorous in their habits; and these, both in their larva, and in their adult states, feed upon the bodies of thenoxious larva, which feed upon the roots of vegetation; so that a very direct and intimate relation between insects and plants may be here recognized. The French gardeners have for many years colonized and protected these predaceous species. Not only because they destroy subterranean intruders, but also because they come forth at night and ascend plants, shrubbery, and even trees, in quest of those which feed upon the foliage of vegetation. I might also mention the Carioninorous species—notably the Burying-beetles—which bury the carcasses of dead animals upon which they feed, and which adds something to the fertility of the soil. And this is also the case with stercoarious insects, which bore holes into the soil and deposit manurial pellets therein, as food for their young after they issue from the eggs, all of which benefit the soil and the plants that grow therein.

Finally—the Book of nature is a sealed volume to those who have not taken the trouble to learn its alphabet, and, after acquiring this much, to patiently persevere in "spelling out" and constructing its prolific sentences, until the import of its language is measurably learned, and its various phenomena are fully understood.

There is little danger that the subject will become exhausted in a single human life-time: It seems like a never-failing spring of pure water; and, after inhibiting it until our locks have begun to turn gray, it will still feed the new aqueous globules bubbling up from its subterranean depths. Entomology and Botany have been subjects of systematic culture from the days of Aristotle and Pliny down to the present time, and may continue so for centuries to come, and still leave a margin for the future tovite to work upon. Reasoning from these analogies, and often anaesthetic, phenomena, which manifest themselves at every progressive step we take, in exploring natures vast and varied domain, we cannot but be impressed with the reflection—if not with the absolute conviction—that no created object is isolated, or stands entirely alone; but that all bear a near or more remote relation to each other; and that when we have contemplated the length, and breadth, and depth of each, we may discover the elements of a homogeneous and harmonious whole, all of which are material, if not in moral use. We have no right, therefore, to conclude, that any object of the physical world has been permitted to exist in vain. If we cannot comprehend its use, or understand its relations to other things, the fault may be in our own want of intelligent perception; or in our failure to grasp the normal tenor of natures operations; and rightly interpret the significance of her symbolic language.

"Nature hath nothing made so base, but can Read some instruction to the wisest man."

SeleCIOnS.

THE BENEVOLENT SUNFLOWER. (Helianthus globosus fatuosus.)

It is not the esthetical nor sentimental view of the sunflower that at present commands our attention, but rather its sanitary powers in warding off disease.

Agriculture is always lavish of its gifts. It feeds the hungry, clothes the naked and shields mankind from disease, sickness and death. The grass, the tree, the flower, all add to man's pleasure, comfort and health. Trees drain the wet places, and slowly but surely fill up disease-breeding swamps. But, in proportion to size, no plant is so beneficent in warding off malaria as the sunflower.

Sections of the once malarious West have become salubrious from the growth of sunflowers, accidentally dropped by some enterprising citizen seeking a new home on the generous acres of the West. These uncared for seeds took root, grew, and the plants ripened their seeds. These, the birds, or the winds, or both, scattered broadcast until an annual crop is furnished for whomsoever will partake of it. These plants have furnished for the emigrants' horses, oxen and other stock on his road to a new home a grateful shade in lamps and lawns; and the old stalls convenient fuel to cook the breakfast dinner and supper for the weary traveler. But the greater blessing conferred by the sunflower is the protection from malaria of the settlers on the rich lands of the prairies.

Whether the leaves inhale or absorb the malarial elements of disease; or whether, by exhaling a superabundance of oxygen, sunflowers protect man and beast from sickness, physiologists haven't yet determined; but that they protect from malaria, experience and experiment have abundantly and convincingly proven.

All plants absorb carbonic acid gas, and exhale oxygen; while living animals exhale carbonic acid gas and inhale oxygen. Plants are largely composed of the carbon obtained from the air, while oxygen is the vitalizing element in animal organisms.

Homes, districts, army stations, hamlets, villages and cities have been protected from malaria by trees and plants; but of all the plants, none exert so benign an influence against malaria as does the sunflower.

Recent experiments have shown that persons may be inoculated with the malaria contained in the water of swamps, and in the algae growing and decaying in them. Whether the large exhalations of oxygen from great numbers of sunflowers or the excessive transpiration of water through the broad expanse of leaves of these plants exert the sanitary influences attributed to them, or whether some unknown agency operates or co-operates to produce this desirable result is not material, so long as the result is obtained by liberally planting sunflowers around, or on the swampy side of habitable places; so that there may be interspersed between the human domiciles and the malaria-producing regions this efficient preventive agency.

Efficient engineering doubtless is the most effective means of overcoming malaria—by thorough drainage and-applied science. But for the quick and efficient aids to both of these, the planting of sunflowers in a proper manner is the most prompt and reliable means.

The necessary excavations of the engineer at first intensifies evil, by liberating the pent-up miasm. So indeed does tree planting, but in a less degree. The sunflower cultivation, however, produces immediate good results while these more permanent measures are being perfected.

Another plant, the Jerusalem artichoke—Helianthus tuberosus, is used as a preventative in its anti-malarial influence, and having the advantage in not requiring to be planted annually, and of also yielding a valuable preventive.

Washington is a veritable hol-bed of malaria. That this state of things should have been so long permitted to have existed is not creditable to Congress, the governing power. Many of our most valuable representatives have been sacrificed by exposure to Washington malaria; and vastly more have suffered in health in consequence of the unsanitary conditions surrounding the capital of a great, intelligent and rich nation.

While engineering and arboriculture are laying great sanitary plans, let the simple, efficient and immediate offices of the sunflower be brought to bear to protect the President, the Cabinet, Senators, Congressmen and the citizens of Washington from a pestilence that constantly hovers over the capital.

This valuable protecting power of the sunflower may be utilized in any locality where miasma is rife.

To protect that part of the city near the Potomac flats there should be planted a broad belt of sunflowers between that part of the flats upon which the engineers will operate and the urban culture, which may be laid out as a belt as practicable should be well plowed and planted with the Russian mammoth sunflower, four feet apart in rows at right angles, so that a single horse-pow can cultivate both ways. One plant in the square thus laid out will be, as the growth is rapid and vigorous.

Similar management will protect other localities. The occupants of farm houses and...
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country residences can be thus secured against the baneful influences of malaria.

A few sunflowers planted about the farm-house might be sufficient to satisfy the aesthetic taste of Oscar Wilde, but they would not be numerous enough to ward off malaria. A belt of sunflowers and Jerusalem artichokes is required. Though there would be but little variety in these plants alone, there might be interspersed a few plants of pearl millet, golden millet, or some others of the same family, to relieve the homely monotony of the sunflowers and artichokes. Judging from the display of artificial sunflowers in the shop windows in New York City, one might imagine that the sentimental malaria of aesthetical society has been utterly banished, yet the sunflower aesthettical malaria has spread far and near. The subjects most susceptible are those of a peculiar organization—those who are more sensitive than sensible.

It is to be hoped that artificial sentiment and artificial sunflowers will not in any way impede the rational employment of natural sunflowers, and bear fruit from the earth.

Even a considerable belt of sunflowers planted on hard ground without cultivation, will make a poor show and prove ineffectual as a prophylactic. In this, as in everything else, a corresponding effort must be made to secure an object of great importance. The means must be commensurate with the magnitude of the object sought. To depend upon a few sickly and neglected sunflowers for protection against malaria is a sad, sorry and chilly prospect, enough to bring down the vengeance of an ague chill upon such a cultivator. Plant, cultivate and harvest a large crop of sunflowers, and a large crop of health at the same time. And at your harvest home festivities, bestow a thank-offering upon the Dispenser of all gracious gifts.

Thousands of valuable lives have been extinguished by the remorseless venom of malaria and if its full powers can be overcome by the simple act of planting trees and sunflowers, God bless the generous hearts that plan, and the benevolent hands that plant these life-preserving gifts for man.

OUR TIMBER LANDS.

"Our National Legislature," briefly observes Bryant, is almost wholly indifferent to the fate of our forests, and betrays a destina-
tion of statesmen like forecast that is painful. If this was all it would be so bad; but, aside from their indifference, the Congress is constantly squandering large bodies of our forest lands on public corporations, who are obtaining them only for profit, and who will destroy them with more rapidity even than private individuals. Candidly, I believe that very many of our Congressmen do not credit the statements and theories that, by denuding a country of its forests, you can injure its productiveness. Some of them have lived a great many years and as yet have no idea of the fate of their forests; they can not cut down forests, nor have they experienced any scarcity of firewood at home. Wise men; to them there is no other land than Spain, and no other age than that in which they live. It is now nearly fifty years since Dr. Drake, of Cincinnati, proposed to Congress the importance of saving our forests. Failing in this he begged the government to at least reserve tracts of woodland around the headwaters of the principal streams as a means of preventing their diminution. The wise doctor was poohed at and thought a little cracked. Well, some of the streams he proposed to save are almost valueless, and in a half century more will be entirely useless for purposes of navigation. Probably the doctor did not anticipate the time would come when wood would become important as a source of timber supply; and if he had proposed such a thing he would have been laughed at outright. It is needless to say that Congress disregarded Dr. Drake's advice, and to-day the children of the very men who poohed at the doctor are suffering for the follies of their fathers. Maine, New York and Pennsylvania are practically ruined as timber States, and their streams are gradually drying up. In twenty-five years more the Northwestern States will be as bad, or even worse off, for timber than the Eastern States are, and in twenty-five years from now the United States will begin. Good, say the Congressmen and timber vandals of to-day, we shall be dead by that time, and why should we care what happens then? Americans owe more than any other people on earth to the toils, sacrifices and forethought of their forefathers, and it is their duty—every man's duty—to transmit the inheritance they received from them to their descendants unimpaired by waste or neglect. Says Bryant, "the length of time required for the growth of timber from the seed to maturity shows conclusively that it was never destined in the order of nature for the exclusive use of a single generation." Nor is this all. The man who wantonly destroys that which he cannot reproduce in his lifetime, is not only a coward and a fool, but he commits a flagrant crime against nature and nature's God. I never see a man cutting down a fine tree but I feel like crying out "stop thief!" What is his life as compared to the life of the tree? If he were to immediately plant another, not in his lifetime, in that of his children or his children's children the tree would attain to maturity. All this he knows, yet he fells it to the earth and does not even plant another to replace it for future generations. Is it a natural? Surely; and worse, for he is a criminal and his seed shall suffer for his sins. If the trees could talk what a pithful tale they would tell. How they had for ages drawn moisture from the earth and distributed it through ten thousand leaves into the air to descend again in showers refreshing the earth and watering the gentle flowers. Even the tiny blades of green grass would cry out:

"Oh woodman spare the tree,
Touch not a single bough."

But they must perish from the earth; the fiat has gone forth and we shall soon be able to say no more

"Thank God! for noble trees:
How stately, strong and grand
These banded giants lift their crests
O'er all this beauteous land."

They will be cut down and gone and the shifting sands alone will mark where they once stood. The bleakness and barrenness of death will cover the earth, the sun pour down his vertical rays and the scorching winds unchecked over the sterile plains.

I fear you will think I am becoming excited over this subject, and I do warm up a little when speaking or writing of the murder of the beautiful trees which in atrocity is little short of human murder itself. But it is not fine phrases or grand, eloquent expressions we want in this case, but facts, cold arguments to convince the unreasonable and the ignorant. The voracious monster who threatens to devour all our young timber in his insatiable maw is the railroad interest of the United States. Last year there were 101,000 miles of railroad in this country, and this year we are building 16,000 miles of new railway. All these roads have to be tied with comparatively young timber. I have not at hand an estimate of the number of ties used per mile, but the annual consumption is very large. Some years ago to build 71,000 miles of railway required 184,000,000 ties. Ties have to be replaced every seven years, and it is fair to calculate the annual consumption annually for future consumption at 100,000,000. As every one knows, railroad ties are cut from young timber, the trees being from eight to twenty inches in diameter, and this demand strikes at the very source of our timber supply.

It is a fact that the fences of the United States have cost more than the land, and they are to-day the most valuable class of property in the United States, except buildings, railroads and real estate in cities. To keep up the fences requires annually an enormous consumption of timber. The 125,000 farms in Kentucky require 150,000,000 feet of fence to enclose them. The number of rails required is set down at 2,000,000,000 costing, $75,000,000. To repair and keep in good or-
der the fences in this one state alone, costs annually $10,000,000. Illinois, a comparative-
ly new state, has $200,000,000 invested in fences, but it costs her only about $300,000 annually for repairs, many of her fences being constructed of wire. The whole value of the fences in the United States, may be set down at $2,000,000,000, and it costs $100-
000,000 annually to keep them in repair.

The City of Chicago alone last year employed 17,200 men in handling lumber. There were 500 clerks, 4,000 wood-workers, 2,000 sailors, 1,000 men to load and unload the vessels, and 10,000 men to handle and prepare the lumber for market, besides 300 propri-
tors. The lumber brought to Chicago in 185,
exceeded 2,000,000,000 feet and would have loaded one train of cars 2,000 miles long. No less than 300 square miles of land were stripped of trees last year to supply the Chi-
icago market with lumber. These figures are indeed appalling and may well alarm any one as to the future source of our timber supply. There is no hope of any foreign supply of timber which will require lumber this year than she did last. The demand is ever increasing and the supply ever diminishing. Between the two the end must come soon and the grand old forests disappear. After the Saginaw, Muskegon, Mecomonee, Manistee and Ludington sources are exhausted the Rocky mountain slope and Washington terri-
ory will be stripped of their forests, and then we will have all that is worth taking. Every
year we demand 8,000,000 acres of trees and plant less than 1,000,000 acres to replace them. The end is so plain even a fool may read it as he runs. — Gen. Jas. T. Brown in N. Y. World.

ROOTS AND HOW TO GROW THEM.

The root-grower is the competitor of the endower, if, indeed, he is not the original en- dower. The rewards of inorganic thought in the process is nothing more nor less than ensilage, the fresh roots being preserved in pits covered with earth to protect them from decay and from drying, so that they may be fed during a long season when no crops are grown. With abundance of roots no farmer needs ensilage, excepting a small supply to carry him through the summer months until roots come around again. The advantages and economy of feeding roots are in no way lesser or fewer than those appertaining to ensilage, and, in fact, the balance is even in favor of roots. Roots may be cared for and preserved much more cheaply than ensilage fodder, and do not lose any portion of their nutritive elements by chemical changes during the period of their storage. The average yield of roots, too, is considerably in excess of that of corn-fodder or those other crops which are used in ensilage, and no expensive silo and troublesome process of pressure under heavy weights are required for their keeping. With a good stock of roots a farmer or dairyman, or a feeder of beef, mutton or pork, can succeed perfectly well with pasture and a few acres of silage crops to help him out until the winter comes around, when the necessary succulent and digestible food is in readiness for the animals. In short, if every farmer should have a silo, as he is advised by some persons, he should also have a root cellar as well, both to give his stock a change of food and to reduce the cost of the construction of silos large enough to furnish fodder for the whole season. But it is hardly necessary to try to prove the enormous value of a good crop of roots to the farmer; every one admits that the trouble is that few farmers know how to grow them or will take the trouble to learn. They fear the cost, the labor and the manure required, forgetting that labor and manure are the first essentials to profitable crops, and that without these the soil has no inducement to be generous, and refuses to grant any favors whatever. Nothing comes out of nothing, and it is vain to expect large and valuable crops without furnishing the elements out of which they are produced.

But before we proceed further it may be well to enumerate and describe the various root crops that are known in our ordinary agriculture. These are—begin with the best known—turnips, rutabagas, carrots, mangels and sugar-beets; of these, turnips is the first, and the last the most valuable.

Every one can grow turnips, that is, to some extent, but it is not easy to grow a maximum crop of 30 or 40 tons to the acre, and it is, in fact, no easier to grow this than to produce the same quantity of mangels or sugar-beets.

The white turnip is, however, a very poor root, as may be seen by comparing the figures of the following table:

<table>
<thead>
<tr>
<th>Per 100 Pat.</th>
<th>Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turnips</td>
<td>22.0</td>
</tr>
<tr>
<td>Rutabaga</td>
<td>37.5</td>
</tr>
<tr>
<td>Mangels</td>
<td>88.0</td>
</tr>
<tr>
<td>Sugar-beets</td>
<td>105.0</td>
</tr>
<tr>
<td>Green cornfodder</td>
<td>85.7</td>
</tr>
</tbody>
</table>

The composition of corn fodder is given for comparison. Turnips and rutabagas, which are, in fact, turnips, are open to the serious objection that they are not suitable food for milk cows, giving a strong odor and flavor to the milk and the butter, which cannot be altogether avoided by any device or method of feeding. Turnips have the advantage of very quick growth so that a crop sown in August or early in September may yield a very considerable amount of feed. Rutabagas should be sown early in July, while turnips may be sown before August.

Two pounds of sound pasture are needed to nourish a steer, and a third pound to the acre. Phosphate of lime, either in the form of bone dust or superphosphate, is the dominant fertilizer for turnips, and always helps to produce a good crop. One good use for the turnip crop is for feeding down with grass; the broad leaves shade and shelter the young grass and the small turnips left after pulling the larger ones afford shelter in the winter and manure in the spring. The best grass and clover seedings we have had have been with turnips in August. For carrots we have liking and an aversion; we like to feed them, but hate to grow them or to harvest them, for both are troublesome operations.

As a farm crop for cattle feeding, no variety but the large orange Belgian should be grown, as the roots of all but this kind penetrate so deeply and the crowns grow so near the surface as to make it very troublesome to harvest them. The first growth of carrots is very small and slow, and unless the ground is very free from weeds the plants are smothered before they can be seen. But while we have mangels and sugar-beets, carrots may be confined to the garden, where hand weeding may be tolerated. Mangels are a species of beet, sometimes called the mangold wuzel-beet, and are familiar to our farmers under the name of pete, and called by them "wuzzies," Here we have mangled the name in our own fashion, taking the left handle of it, while the English have taken the right. But they are a magnificent root, call them by whatever name we may. Reaching a weight of 24 to 40 pounds, the single specimen, growing half out of the ground and holding but very loosely to the soil, they are harvested with the greatest ease. We have ourselves loaded a two-horse wagon with the huge roots, of which 120 filled a 40-bushel box level with the edge and made a full ton, for feeding about 70 or 80 head of cattle during the winter, but it was, to tell the truth, in a spot where the compost heap which manured the field had stood for three months and where the soil was, of course, unusually rich. But of that crop fully 10 per cent. would weigh over 20 pounds and one root out of 20 would reach a weight of 24 pounds. One of these roots made a good meal for a cow, and a tender, crisp flesh literally melted un- der, or we should, strictly speaking, say over, her teeth. But to our text again. Mangels are of several kinds—the long top rooted; the ovoid or egg-shaped, and the globe— they are of several colors—red, yellow, and orange. The best, to our mind, are the long red, of which kind was the crop above referred to; the yellow globe is said to be the best suited for light soils, although our long red were grown on a sand that sometimes blows a lively fashion on a breezy, dry day; the yellow ovoid is said to be the largest cropper, although the long roots yielded at the rate of 1,200 bushels per acre, or an equivalent of 26 tons. Then there is the Norfolk Giant long red mangel, one whose name certainly justifies a large crop if length of name could do this; and it is credited with being enormously productive, single roots weighing 100 pounds, and the whole crop reaching 72 tons per acre, or nearly half a ton to a square rod. But this enormous yield is by no means incredible, for roots growing 14 inches apart in 3 foot rows and weighing 165 pounds each only would make a ton to two square rods, or about 1000 tons to the acre, and what could be done on one fourth the space? But this would not be done on 80 of them, if it would pay to do it.

But, as a rule, enormous crops cost more than they come to, and it is the medium-sized crops that are the most profitable, and any farmer may be well satisfied with 36 tons of good sound roots to the acre, which is equivalent to the feeding of six cows for a period of six months of three cows for a year.

Another excellent root, and even more excellent than all the rest, is the sugar-beet, with 18 per cent of solid dry matter, of which 15 per cent is carbo-hydrates and 1 per cent is proteins: for this reason the beet has been advocated by the best agriculturists as a valuable and partly complementary food for clover hay and wheat bran, or cotton-seed meal, all together forming a perfectly nutritious, complete and well-balanced food. Of this root there are two kinds, the small French sugar-beet, extremely rich in sugar, so as to be a tempting morsel to the village boys on their way to or from school, and the larger improved sugar-beet produced by the Hon. Henry Lane, of Cornwall, Vt., after many years of cultivation and inbreeding, so to speak, and which has yielded 35 and 40 tons to the acre.

All the best tribe require the same sort of cultivation. A light, warm, sandy loam made rich with well-rotted compost, and reinforced by 500 pounds per acre of the special beet fertilizer and 350 pounds per acre of salt, these huge roots revel in; they grow so fast that they cannot make their way into the soil, and so make their way out of it, standing in all sorts of grotesque and comical ways—upright, leaning, and lodging to each other, twin roots trying to divorce themselves, and roots separated trying to embrace each other; but all stout and robust and ruddy, doing their best to make themselves comfortable and contented. To reach this result we must plow the ground early in April, and narrow; mark it out with a furrow-marker made of 4 strips of 2 by 8, 12 feet long plank set on edge 30 inches apart, and connected by 3 cross-pieces gained-in and firmly spiked on to the upper edge, and attached to a draught-pole well braced, that the machine might not wobble, but go steadily and evenly, and mark out
straight lines across the field; then we open a furrow right on each of these lines, deep and broad, and returning on it double it and make a double open furrow. Then we should drop the manure in this furrow and cover it with the plow, returning the soil previously thrown out, and thus we form a sort of ridge. After this has settled for a few days, when the growth of the yellow lupin seed pluner—the hand little “monitor” seed drill is the one we use—and drop the seed immediately over the manure and cover it and roll the surface at one operation. Then the fertilizer is scattered along the ridges and all between, and left for the rain to carry it down to the roots, which will spread from row to row and meet each other. When the slender little twin leaves appear we must run on each side of them with the Plant Junior hand wheel-hoe, which scrapes the soil off the sides of the plants within an inch of them, and killed the weeds and loosen up the ground. By and by we run through the middle with the Plant horse-hoe, a sort of universal tool, which stirs and plows the middle, and either scrapes the soil from the rows or throws it to them, just as we may wish to do. But the four pounds of seed we have sown to the acre is four times too much, but necessary to secure a close and even stand, and the excess of plants is to be cut out with a hoe, leaving spaces of 14 inches between the plants, or if one wants a few extra roots to win a premium with at the fair, let him leave them 30 inches apart. In this way the little extraneous root, or give them a little liquid manure once more. Last of all, let the cultivator be kept going, not to keep the weeds down so much, but to stir the soil and let in the warm rays of the sun and the rain, which will carry the fertilizer down to the feeding roots and fill the great main top root of the plant, not one-tenth so large and heavy as its root, with rich sap, and force a rapid and healthful growth. By this manner of growing roots, the crop will bring no disappointment with it; but if three acres are grown one may be sure of finding the bulk of the feeding for a dozen or fifteen cows for a year, or two acres; that is from the first of November to the first of May. —L. Stewart in N. Y. Tribune.

GREEN MANURES.

Dr. Alfred I. Kennedy, the chemist, and geologist of the Pennsylvania State Agricultural Society, has issued an address “To the Farmers of Pennsylvania” on the subject of the use of green manuring. We think that we may be doing a service to the agricultural interests of the State by giving this circular a place in this department, though it occupies more room than we have just now to spare, and at the same time to call the attention of farmers to the propositions it embraces:

1. In many parts of the State the fertility of the soil is economically increased, by sowing it down with red clover and plowing over the crops. The crop which follows next, frequently finds in the decayed green manure the fertilizing materials it needs, and finds them, too, in the form most readily assimilable. Large tracts of land, both in Pennsylvania and Maryland, have, at a comparatively small cost, thus had their fertility so far restored, as to be made productive. In many respects the red clover is admirably adapted to the purpose. Two seasons are, however, often required before it is sufficiently well-rooted and grown, to be plowed under with the greatest advantage.

2. On the continent of Europe the yellow lupin is preferred in green manuring. It is a vigorous grower, and it matures in one season. The root, which is the useful part, is nearly eight feet long; each node of it being from two feet, sending down its strong tap-root to an equal distance, penetrating the sub-soil, and bring to the surface fertilizing agents lying below the reach of the plow. To these qualities it adds the yet more valuable one of producing a foliage more than eleven and three-quarters per cent. (11.79) richer in nitrogen than the red clover.

3. Nitrogen in the soil is indispensable to our crops. Applied to them, as it is in the form of nitrate of soda and Peruvian guano, it is the most costly of chemical fertilizers. The plants which, like the yellow lupin, gather it up and store it up, must, under certain conditions, be the most valuable of green manures.

4. To determine what these conditions are, is so important to our agriculture, that to do so would be one of the first duties of an American agricultural experiment stations, were they multiplied and organized. At present they are too few and too isolated to render the results of their ‘soil tests,’ etc., truly valuable to the mass of our farmers. Whose locations, soils, subsols, and atmospheric and other conditions differ so widely. Fortunately every county in the State contains one or more perfectly competent men to determine by experiment the comparative value of green manures, and they are cordially invited to aid in settling the interesting question of the relative advantages of the red clover and the yellow lupin.

5. These advantages are to be ascertained through the effects which the green manures have upon the crop of grain which immediately follow them. A portion of a field which was last year in corn, and which this year is to be put in oats or potatoes, will be found convenient, and that portion will not be thrown out of the regular order of crop rotation.

6. Additional advantages for special purposes one-fourth of an acre, uniform in quality and exposure, and plow and work it as one ‘land.’ Forty-five by two hundred and forty-two feet will be a good proportion, divided into two plats twenty-two and a half by two hundred and forty-two feet, being one-eighth of an acre each. It can, in April, sow or drill one of them marked No. 1, with the quantity of red clover usual in the neighborhood, noting the quantity; the other plat, marked No. 2, with one-eighth of a bushel of yellow lupin. Properly after each crop comes into full flower, plow it up and sow it with the next crop. In this way the fields will be being made ready for the fall grain, whatever harrowing and rolling other portions receive should be given also to the plats, and the whole field be similarly seeded. If a potassic or phosphatic fertilizer be used on the plants, the fertilizer must be absolutely free from nitrogenous matter and must be carefully applied in equal quantity to each, time and quantity to be entered under ‘Additional Remarks.’

7. Next spring (1880) carefully stake off the middle eighteen feet of each plat, making each central plat eighteen by two hundred and forty-two feet, or exactly one-tenth of an acre. At harvest, begin by cradling, binding and cleaning up the space between the two central plats, and also that outside of them, and then reap the plats. Thresh and clean the product of each separately, and note the weight and measure of the grain, and the weight of the straw. To all of which I assure my readers that a blank form accompanies the foregoing to fill up as the experiment progresses, which can be obtained by application to Dr. Kennedy, at the Polytechnic College, Philadelphia. By noting the details accurately a vast fund of information can be obtained, which may prove of great value to this important branch of industry. —Germantown Telegraph.

OUR LOCAL ORGANIZATIONS.

LANCASTER COUNTY AGRICULTURAL AND HORTICULTURAL SOCIETY.

A stated meeting of the Lancaster County Agricultural and Horticultural Society was held in their room in City Hall, on Monday afternoon, June 5th. The following named members and visitors were present:


The president and secretary being absent, Vice President Henry X. Bowman, and John C. Linville was appointed secretary pro tem.

New Members Elected.

John H. Landis, of Manor, proposed for membership Washington B. Paxson and Francis N. Scott, of Cochran township, and both were elected.

Crop Report.

Casper Hiller, of Conestoga, reported the cherry crop almost a failure, the pear crop not much better, the apples very thinly set, the peaches more promising, grass rather thinly set but healthily looking, giving promise of a good crop of hay.

Peter S. Reisel reported the wheat in Warwick and Manheim as very promising, possibly a little too rank in growth; grass in general looks well; new clover not so well; cherries, except in low-lying places, good; currants greatly damaged by worms, blossom on the leaf and the root; other fruits promise a fair average.

John H. Landis said that in Manor township, the wheat never looked better than it did a week or ten days ago, but now it is growing too rank and beginning to bud, and the straw, near the ground, is getting black; the grass looks well; there are indications of a full fruit crop; apples and peaches are plentiful, though the cherries are not very full.

John C. Linville, of Salisbury, reported wheat as growing very rank, with straw full of sap, and therefore liable to rust if the weather should become hot; oats black; the grass looks well; there are indications that the fruit trees did not blossom well and there would not be much fruit; wheat is strong and healthy; oats don’t look so well; potatoes coming up nicely; corn healthy but backward for this time of the year; clover well set.

Wm. H. Bronis, of Drumore, said that Mr. Wood’s report will answer for Drumore—wheat fine; grass fair, but fruit unpromising.

H. M. Engle, of Marietta, said the wheat looked remarkably well, but some of it is becoming to
lodge. Its outcome will depend on the condition of the weather, for which we have reason to think must be a cool, even mild, one. If our grasses become too dry, they will not weather the winter, but the snow will keep them covered if it is in sufficient depth. The rainfall of the month of May was nearly five inches.

**Apple Trees.**

John C. Linville read the following essay:

Now is the right time to prune the apple trees if we want the wounds to heal over quickly. If the wounds are very deep, however, you will have to varnish, to exclude the sun and drying winds. It is seldom necessary to remove large limbs if the tree is young. If, however, there is more harm done by too much than too little pruning. Vigorous growing trees are very impa
tient to be pruned. Do not wait to cut out dormant buds along the upper side of the limbs push out into "suckers." These have to be removed as soon as possible. It is far better to cut off the top of the limbs the tree is old. I have al
ever met with this trouble in attempting to cut out the dense, useless limbs. Great care should be taken to prune the tree not toward the stump but toward the tree.

In pruning, I recommend that you lay down some dead limbs that must be cut away. This might be done in winter, but may be done any season. If some branches are cut off after the leaves have fallen, they will be more likely to be broken or pulled out of the tree. Dead limbs should be saved off at the shoulder and the buds should be cut off from the leaves to encourage new growth.

Casper Hiller said there can be no particular rule laid down for pruning; one kind of tree will require one method and another kind another. In pruning apple trees, his plan is to commence when they are young and cut off the tops so as to keep the tree low. Ordinarily the large limbs if cut off close to the shoulder and pruned to prevent the escape of sap, the weather for the next several weeks, it should be cut off a few inches from the shoulder; the smaller ones much more slowly, for several years and not affect the tree until it has become too old to be useful. He thought an orchard ought not to be allowed to stand more than thirty years, and that a young orchard might as well be laid out at a time. As to the young trees in the row between the old ones, removing the latter when the former comes into bearing.

John H. Landis took exception to Mr. Linville's statement that too much pruning was worse than too little, especially as applied to peaches. If the trees are well pruned, the fruit is sure to be small and unmarketable.

- The question was further discussed by S. F. Eby, Esq., Peter S. Reist, Levi S. Reist, Henry M. Eagle, and John C. Linville.

In answer to a question referred to him at last meeting, Casper Hiller answered as follows:

I am not prepared to answer the question: Whether the period of growth should be cut to make the best hay from actual test of the feeding
ground and hay made from periods of cutting. If you would know the date at which the proper time to cut is when the plant is past the green stage and just forming. When grass and clover are cut too early they are too watery, make no weight, and are difficult to dry. If cut too late they become woody and will lose its best feeding quality.

Henry Eagle, while owing to a misapprehension he thought the above question had been referred to him for answer and had accordingly prepared a paper on the subject, if there was no objection he would read.

He read it as follows:

In order to answer this question satisfactorily I present it in an essay rather than in a few verbal re
cords. According to statistics (which we have no reason to question) the average quantity of the grass crop of this county exceeds that of any other crop. It re
tains its value as cattle feed, either loss or gain to each farmer utilizing it to best advantage. Dr. Casper Hiller has published a statement made by a prominent and reliable farmer that the results of making hay was to swell the aggregate to millions. The period to cut grass is a matter of course. The value of the grass crop is a large proportion of hay made from periods of cutting. If you would know the date at which the proper time to cut is when the plant is past the green stage and just forming. When grass and clover are cut too early they are too watery, make no weight, and are difficult to dry. If cut too late they become woody and will lose its best feeding quality.

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tains its value as cattle feed, either loss or gain to each farmer utilizing it to best advantage. Dr. Casper Hiller has published a statement made by a prominent and reliable farmer that the results of making hay was to swell the aggregate to millions. The period to cut grass is a matter of course. The value of the grass crop is a large proportion of hay made from periods of cutting. If you would know the date at which the proper time to cut is when the plant is past the green stage and just forming. When grass and clover are cut too early they are too watery, make no weight, and are difficult to dry. If cut too late they become woody and will lose its best feeding quality.

Henry Eagle was speaking of a misapprehension. He thought the above question had been referred to him for answer and had accordingly prepared a paper on the subject, if there was no objection he would read.

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Agriculture.

Rotation of Crops.

In a well planned system of farming, the subject of crop rotations should be carefully considered, as one of the essential elements of success in its highest and best style. It seems to be the prevailing opinion that the alternating of crops, in systematic order, is a modern invention that was gradually developed as a direct result of the application of science to the art of agriculture. The early writers on agriculture, even from the time of the Romans, have, however, quite uniformly, observed that one of the advantages of a succession of crops from the teachings of experience. They were satisfied that a variety of crops grown in succession, all other conditions being equal, would give a greater aggregate yield than could otherwise be obtained. The reasons for the success of the system could not, in fact, be given, but practical men were fully agreed in urging its importance, and many systems of rotation, more or less perfect, were planned, some of which became the prevailing rule of farm practice in particular localities. That these practical rules of alternating crops of different kinds and modes of growth are based on correct, but not explained, principles, has been shown by direct experiment.

Manure Made Under Cover.

Of course all the advantages of making manure in covered yards may be secured by box feeding, with less outcry for robbing, since no more space must be allowed for a given number of animals. It is the protection from rain and sun, the abundant use of litter, and its thorough incorporation with the new manure, that secures this saving in time, space, and cost, and prevents treading, which go to make the superior manure; all these features of the method work against the loss of valuable plant food. Nor does box feeding and constant accumulation of the manure under the feet of the animals necessarily imply offensive stables. Dr. Lawrance said that he had never noticed the offensive smell of his stables. It is only essential that enough litter be used to absorb all liquid, and this absorption is more effective if the straw is cut up. One method or other, box-feeding or covered yards, shows itself advantageous to every farmer who has manure to be treated in this way. It is to be hoped that the supplies which are sent to Europe will be selected and put in a manner creditable to the fruit growers of this country, and that some means may be devised to distinguish such growers and shippers as do the work in honorable and skilful manner, as they are already doing, and those who treat and fraud a lasting injury to themselves and others, as was too frequently the case in 1860.

The treasurer was authorized to subscribe for "Ward's Quarterly Bulletin of Natural History."

Dr. Kindly tendered his office for the use of the society in holding its evening meetings, which was thankfully accepted.

Mrs. Zell read some notes on technical terms, which elicited quite a spirited discussion, participated in by Prof. Stahr, Dr. Davis and others.

After an examination of Dr. Kindly's objects of recent interest and importance, the society adjourned to meet in the ante-room of the Museum on Saturday afternoon, May 27, 1822.

May Meeting.

The society met on Saturday afternoon, May 27, 1822, in the ante-room of the Museum, the president, Prof. J. Stahr, occupying the chair.

After the usual preliminary, the Curators reported the following donations to the Museum: Two specimens of the "Sea Robin" or "Flying Gurnard," represented to have been caught in the Susquehanna river and Conestoga creek, but which were identified as Pristis cristatus of Deyck—marine fishes, which inhabit the Atlantic Coast from Nantucket as far south as the Carolinians. As a specimen of the "common sturgeon," Acipenser sturio, was caught in the Susquehanna river some years ago, near Bainbridge, in this county, it is not impossible the "Gurnard" may be caught from the estuary of the river, and from the bays, although it is not very probable. One specimen of well-defined great lebe, presumably from the "Granite State."

Sundry botanical specimens for determination.

Donations to the Library: Volume 3 of American Entomology, a new edition of the Lancaster Farm Journal, dated April, 1831, which originated in Lancaster city thirty-one years ago, under the auspices of A. M. Spangler; Nos. 17 to 20, volume 20, of the Official Gazette of the U. S. Patent Office; circulaires 1-6, from the Bureau of Education, De- partment of Interior; sundry circulars; the Lancaster Farmer for May, 1822; five envelopes containing forty-five historical, biographical and scientific scraps.

S. S. Sener, Esq., was unanimously elected an ac- tive member of the society.

After closing a small bill reported by the Curators, the meeting passed under the rule of "Science Gossip!" for a brief period, and then adjourned to meet at the rooms of Dr. H. S. Knight, North Queen street, Lancaster, Pa., on the last Thursday evening in June (29th), 1822.

Horticulture.

An Abundant Apple Crop.

During a recent ride through a large portion of the State, we could not fail to be struck with the glorious masses of apple blossoms wherever there were suitable woods. The promise is of a great crop and vast surplus. Many thousand bushels will be wasted if the fruit ripens as well as in other seasons, unless efficient efforts are made to secure a foreign market, and to manufacture large quantities at home into evaporated fruit, or into apple jelly or vinegar. [This report of an abundant crop refers to New York State. In Pennsylvania, or at least in this part of the State, there was no appropriate season for apples.]

It is to be hoped that the supplies which are sent to Europe will be selected and put in a manner creditable to the fruit growers of this country, and that some means may be devised to distinguish such growers and shippers as do the work in honorable and skilful manner, as they are already doing, and those who treat and fraud a lasting injury to themselves and others, as was too frequently the case in 1860.

A question of importance is asked many times in this connection, "How can we prevent this noxious year in our gardens from returning to us every season?" In answer, there are three remedies.

One is to cultivate the ground well, so as to keep up the vigor of the trees to such a degree that the abun- dant crop the year will not exhaust the trees and prevent bearing the old year. This remedy, although operating more or less in all cases, is—owing to the nature of the tree—inef- fectual.

The second, mowing the trees at the right time, is more efficient. The best time to apply the manure—which must, of course, be broad- cast—is on the surface in autumn or during winter, giving the trees when they start in spring so much vigor that the demand for the same cannot be met, and the excess can be mowed and mixed, for the supply of the leaves, prevents the force of the trees and prevent bearing the following season. If the manure is applied in spring or early in summer and worked into the surface soil, it would have a similar tendency in less degree. Liquid manure, spread over the whole surface through a sprinkler, would probably answer nearly as well as winter-spread compost, and is well worth trying by those who have facilities for this purpose.

The third, and most certain way of changing the bearing year, is to prevent a crop this season, by means of which all the strength of the growth will be thrown into the young shoots for a crop next year. The best time is when the trees are in blossom, because they are easily seen; and the best tool for the pur- pose is a pair of common sheep shears. The work should be done when the young shoots are from one to two inches long, because the labor is much less, and the change is more likely to be permanent. We find that it re- quires a man three hours to shear off all the blossoms from a tree fifteen years old and large enough to bear twelve bushes and only one hour for a young bough of three years, and, of course, the weakest bush or branch of the crop on either, during a scarce year, is much more than the cost of the labor. The work may be done when the young apples are as large as cherries, and they are not so easily seen as the blossoms—Country Gentlemen.

What Kills Fruit Trees.

Deep plucking is one error. To plant a tree rather smaller than if formerly stood is really the right way, whilst many plant a tree as they would a post. They frequently plant too many trees to a field, the roots, composed entirely of cells, the feelers of the tree, always found near the surface getting air and moisture, and roots of over one year old, which serve only as supporters of the trees and as conductors of the sap. It is a fact, which we must not too often forget, that the whole surface of the delicate rootlets are so deeply buried in earth. Placing fresh or green manure in contact with the young roots is another great error. The place to put manure is on the surface, where the elements dis- tinguish, dissolve and carry it downward. Numerous forms of fungi are generated and reproduced by the application of such manure directly to the roots, and they immediately attack the tree. It is very well to enrich the soil at transplanting the tree, but the manure, if to be in contact with or very near the roots, should be thoroughly decomposed—Mass. Horticult. Fournal.

Early Turnips.

The earliest and perhaps the best variety of turn-ips for table use is the Early Flat Dutch, which is generally popular, and it takes only a small plot to furnish a supply for a medium sized family. One reason why they so frequently fail in gardens is the
Household Recipes.

Beefsteak Rolls.—Cut a beefsteak quite thick, to make four or five inches wide; rub the inside with an onion, and in each strip roll up a thin slice of bread, buttered on both sides; stick two cloves in the bread, and sprinkle some salt, pepper, cayenne pepper, and put into each roll. Then roll butter, turn the head, stretch it with flour, and fry in hot butter. Then put these, when a delicate brown, into a stewpan, with only water enough to stew them. Make a nice thickened gravy from the liquor in which the steaks were stewed, and serve with the rolls, very hot. The rolls should stew slowly two hours. Veal or mutton is good prepared in this way.

Devilled Ham.—One pint of boiled ham chopped fine with a good proportion of fat, one tablespoonful of flour, one half cup of boiling water. Press in a mould and cut in slices.

Yanke Pork Pudding.—Take a tin puddling boiler that shuts all over tight with a cover. Batter it well. Put at the bottom some stone raisins, and then a layer of baker's bread cut in slices, with a little butter or suet, alternate, until you nearly fill the tin. Then the butter, turning them round, streple it with flour, and fry in hot butter. Then put these, when a delicate brown, into a stewpan, with only water enough to stew them. Make a nice thickened gravy from the liquor in which the steaks were stewed, and serve with the rolls, very hot. The rolls should stew slowly two hours. Veal or mutton is good prepared in this way.

FRENCH BEEFSTEAK.—Cut the steak two thirds of an inch thick from a fillet of beef; dip into melted fresh butter, lay them on a heated griddle and brown over hot coals. When nearly done, sprinkle pepper and salt. Have ready some parsley chopped fine and mixed with softened butter. Beat them together, to a cream, and pour into the middle of the dish. Dip the steak and lay them round on the plate. If liked, squeeze a few drops of lemon over and serve very hot.

SQUASH PIE.—Make the same as pumpkin pie with the addition of one egg to each pie.

DELIGHTFUL PUDDING.—Butter a dish, sprinkle the bottom with brown sugar, three tablespoonfuls of thick, very little shreds suet, then a thin slice of light bread, and so on until the dish is full. For a pint dish make a liquid custard of one egg and one-half pint of milk, sweeten it, pour the pudding over, and bake as slowly as possible for two hours.

To Make Tough Meat Tender.—Soak it in vinegar, water; if a very large piece, for about twelve hours. For ten pounds of beef use three quarts of water to three-quarters of a pint of vinegar, and soak it for six or seven hours.

CABBAGE SALAD.—Shave a hard white cabbage into small white strips; take the yolks of three well-beaten eggs, a cup and a half of good cheese, two tablespoonfuls of mustard, three tablespoonfuls of thick cream, one teaspoonful of mustard mixed in a little boiling water; salt and pepper to suit the taste. Mix all but the eggs together and let it boil; then add the eggs rapidly; stir the cabbage well. Make enough for two days, as it keeps perfectly and is an excellent relish to all kinds of meats.

The regulation French salad dressing is composed of three parts of salad oil to one of vinegar, with a halting season of pepper and salt.

SCALLOPED OYSTERS.—Crush and roll several handfuls of Boston or other friable crackers. Put a layer in the bottom of a buttered pudding dish. Wet this with a mixture of oyster liquor and milk slightly

ly warmed. Next have a layer of oysters; sprinkle with salt and pepper, and lay small bits of butter upon them. Then another layer of melted crumb and so on until the dish is full. Let the top layer be of crumbs, thicker than the rest, and beat an egg gently into it, and scatter it over it; bake thickly over it, cover the dish, set in the oven, bake half an hour. If the dish is large, remove the cover, and brown by setting it upon the upper grating of the oven or by holding a hot shovelful over it.

Koast Shoulder of Veal.—Take, twenty minutes, one cup of bread crumbs, some oyster, or mushroom sauce. Remove the knuckle from a shoulder of veal for boiling and roast what remains as the fillet, either stuffed or not with veal stuffing. If not stuffed, serve it over or mushroom sauce, and garnish with allium lemon. 

Western Cookies.—One cup of sour milk, one cup of powdered sugar, a little salt, one teaspoonful of soda, mix as soft as possible; roll thin; sprinkle with sugar; slightly roll out, and bake in a quick oven.

Fairy Apple.—Bake ten nice tart apples. When soft, remove skins and cores, and wash thin with a silvery or wooden spoon. While hot, fill the white of one egg beaten to a stiff froth, and beat one minute. Place in a glass dish and pour over it a soft custard made of the yolks of the egg, one teaspoonful of corn starch, three tablespoonfuls of white sugar and a little of lemon juice or apple flavoured, or not, as you like. Serve cold. This is nice for tea.

LIVE STOCK.

Improving the Stock on the Farm.

The season for calves and lambs is about over, and on a majority of farms there will be a surplus to be fitted for slaughter, and sold to the itinerant butcher or housekeeper. In making the selection of this surplus be sure to choose the inferior ones and keep the best of the farm for breeding purposes. Remember that a calf or lamb that is of little or no use to you, may some time or another be of great use to another. It is a good rule to purchase the calves and lambs which you will want to sell a few years hence, and in order to have them average better than this year's product you must retain and breed only the best. The dollar or so extra offered by the farmer for the best animals of your lot will prove a temptation to part with them, but it will be money in your pocket to resist it and regard the money as an evidence of the greater worth of the animals to you as breeders. Look upon the differences in price simply as an investment in improved stock. Pursue this course constantly, from year to year, and you will effect a gradual improvement in your stock which will in time result in your having none but the "best" to offer. If, on the contrary, you suffer the young animals to be carried away and slaughtered year after year, you will justly deserve to be the "usual" farmers in the neighborhood. If you wish to improve your stock, and approaching the time when you will have none of "the best" to offer.—Agricultural Epitome.

Keep Up the Flow of Milk.

The month of August, is perhaps, the most trying of the year to the dairyman who has determined to keep up an even flow of milk during the whole season. And all dairymen who have studied the profits of the business know that any large fall off in the flow of milk in summertime is seldom or recovered. This reduction of milk will largely affect the whole yield, and thus the profits of the whole season. Special green crops of corn, millet, etc., are seldom ready early enough to reach an August shrinkage in pastures. The dairyplayer of clever will be best able to meet the short pasture with green feed. A second crop of clover will be just in its glory, and when that is fed, corn, millet, etc., may be ready. As cows can only produce a large yield of milk on full feeding, let the cowman be as liberal to his cows as he desires to be rewarded by them in return. When the second setting of clover and green corn are both ready at one time, they should be both fed together; for the clover is rich in the nitrogenous element, which is deficient in corn; they complement each other.

Care of Dairy Vessels.

Prof. Arnold has the following to say about the use of the cleanliness required in dairy utensils and the influence of such neatness upon the quality of the butter:

It is hardly necessary to say that wherever the finest butter is made the milking is done in the cleanest manner. It is so nearly done that straining the milk from the vessel in which it was milked is unnecessary, but with the occasional dropping of a stray hair. Whoever places much dependence on the strainer for securing clean milk will never make gilt-edge butter. Allowing dirt to get into the milk, and then depending on the strainer to get it out, is a poor business. The butter is second rate. The heat of the milk will kill any bacteria, especially everything of a soluble nature, and some that is not, is sure to find its way through the meshes of the strainer with the crowded current of milk. The practice of using one cow's milk to wash the tallow collected from another cow's milk, as is frequently done by continuing to strain messes after mess through the same strainer without cleaning, does not contribute anything toward gilt-edge, and is not allowed where the best butter is made. Then the tin pails for 1 ounce wooden pails are not used where the best butter is made. They are employed instead of soft soap, which, though it might possibly be clean, is generally too filthy to be used on milk vessels, to say nothing of the injury it does to tinware from the potash it contains.

Raise the Good Cow's Heifer Calf.

A large majority of dairymen have cows in their herds that do not pay their expenses, and as they do not apply a test to individual cows, they continue not only to keep them, but to breed from them. This is a most suicidal policy. Although we strongly recommend dairymen to raise their own cows, and not go far from advices and all the vessels used for holding or setting milk are kept scrupulously clean. When used, they are not left for the milk, and particularly the milk sugar, to dry and form a gummy coating to serve as a reservoir for infection, and which it is difficult to get off. They are attended to promptly, rinsed in hot water, and dried in warm and sealed in water actually boiling hot, to avoid contamination from a sour dish cloth, are left to drain and dry without wipping. They are kept bright by scouring with salt, and as a protection against greasy and infected keeping; and, as they are employed instead of soft soap, which, though it might possibly be clean, is generally too filthy to be used on milk vessels, to say nothing of the injury it does to tinware from the potash it contains.

One Variety.

As a rule, one variety of fowls is enough for almost anyone to manage successfully and profitably, and this, especially true with beginners, who have gained some experience in dealing with fowls of different or varied kinds of poultry management. If a breeder has been successful with one variety, it has not merely made good sales, but has produced birds of such a high order of merit that the stock makes a good advertisement, and a permanent one, for the breeder. It can be taken for granted that it will pay to take up one or more breeds, provided the same care is bestowed upon

Poultry.
LITERARY AND PERSONAL.

The Planters' Journal. The official organ of the National Cotton Planters' Association, and of the Cotton States, is the Planters' Journal. The purpose of the Journal is to promote the interests of the cotton industry and to provide a forum for the exchange of ideas and information among members. The Journal contains articles on agriculture, politics, and economics, as well as reports on cotton market developments.

Southern Industries. The Southern Industries are a group of businesses that operate in the Southern United States. These industries include agriculture, manufacturing, and retail. The Journal often features articles on the growth and development of these industries, as well as reports on their impact on the local economy.

The Literary World. The Literary World is a journal that focuses on literature, the arts, and culture. It features articles on contemporary literature, reviews of new books, and interviews with authors. The Journal also includes a section on the arts, which covers developments in music, theater, and visual arts.

The Journal of Agriculture. The Journal of Agriculture is a scientific journal that publishes research on agricultural science, including crop improvement, animal husbandry, and soil science. The Journal features articles on the latest research and developments in the field of agriculture.

The Journal of Business. The Journal of Business is a scholarly journal that focuses on business and economic topics. It includes articles on management, finance, and marketing. The Journal also features reports on the latest trends and developments in the business world.

The Journal of History. The Journal of History is a scholarly journal that publishes research on history, including the study of individuals, societies, and civilizations. The Journal features articles on the latest research and developments in the field of history.

The Journal of Science. The Journal of Science is a scholarly journal that focuses on scientific research in various fields. It includes articles on the latest research and developments in science, as well as reviews of new scientific books and technologies.

The Journal of Technology. The Journal of Technology is a scholarly journal that focuses on the development and application of technology. It includes articles on the latest research and developments in technology, as well as reviews of new technology products and services.

The Journal of Medicine. The Journal of Medicine is a scholarly journal that focuses on medical research and practice. It includes articles on the latest research and developments in medicine, as well as reviews of new medical products and technologies.

The Journal of Education. The Journal of Education is a scholarly journal that focuses on education and teaching. It includes articles on the latest research and developments in education, as well as reviews of new educational products and services.

The Journal of Law. The Journal of Law is a scholarly journal that focuses on legal research and practice. It includes articles on the latest research and developments in law, as well as reviews of new legal products and technologies.

The Journal of Religion. The Journal of Religion is a scholarly journal that focuses on religious research and practice. It includes articles on the latest research and developments in religion, as well as reviews of new religious products and technologies.

The Journal of Art. The Journal of Art is a scholarly journal that focuses on art and art history. It includes articles on the latest research and developments in art, as well as reviews of new art products and technologies.

The Journal of Philosophy. The Journal of Philosophy is a scholarly journal that focuses on philosophy and philosophical research. It includes articles on the latest research and developments in philosophy, as well as reviews of new philosophical products and technologies.

The Journal of Psychology. The Journal of Psychology is a scholarly journal that focuses on psychological research and practice. It includes articles on the latest research and developments in psychology, as well as reviews of new psychological products and technologies.

The Journal of Sociology. The Journal of Sociology is a scholarly journal that focuses on sociological research and practice. It includes articles on the latest research and developments in sociology, as well as reviews of new sociological products and technologies.

The Journal of Economics. The Journal of Economics is a scholarly journal that focuses on economic research and practice. It includes articles on the latest research and developments in economics, as well as reviews of new economic products and technologies.

The Journal of Political Science. The Journal of Political Science is a scholarly journal that focuses on political science and political research. It includes articles on the latest research and developments in political science, as well as reviews of new political products and technologies.
THE WORLD OF NATURE

The world of animated nature is more splendidly represented under the canvas of Forepaugh's Great Show than in any other travelling exhibition. Not since the day Noah lifted his barrow off the buming post have so many distinct varieties of rare animals been collected under one charge. This important fact should not be lost sight of by schools and parents. Boys and girls can learn more in an afternoon of natural history, in the great Menagerie of Forepaugh's Show, than by months of book study. Recognizing this, Mr. Forepaugh makes reduced rates to schools, and admits all children in orphan asylums free of charge. This great Show will exhibit in Lancaster, Monday, April 24.

THE KING FORTUNE-MAKER.

A New Process for Preserving all Perishable Articles, Animal and Vegetable from Fermentation and Putrefaction, Retaining their Odor and Flavor.

"OZONE—Purified air, active state of Oxygen."—Webster.

This preservative is not a liquid pickle, or any of the old and exploded processes, but is simply and purely OZONE, as produced and applied by an entirely new process. Ozone is the antiseptic principle of every animal and vegetable life, and possesses the power to preserve animal and vegetable life without chemical decomposition.

There is nothing on the face of the earth liable to decay or spoil which Ozone, the new Preservative, will not preserve for all time in a perfectly fresh and palatable condition.

The value of Ozone as a natural preserver has been known to our ancient chemists for years, but, until now, no means of producing it in a practical, be practical, and simple manner have been discovered.

Many people have observed that decay is due to minute matter or minute germs, that develop and feed upon animal and vegetable tissues. Ozone, applied by the Pruden method, destroys these germs at once, and thus preserves. At our office in Cincinnati can be seen almost every article that can be thought of, preserved by this process, and every visitor is welcome to come in, taste, smell, take away with him, and test in every way the exquisiteness and sustained preservation of the article preserved, and we will sell as cheaply as possible to the visitor, and send it to the sender, for him to keep and test.

FRESH MEAT, fresh fish, fresh poultry, game, fish, etc., preserved by this method, can be shipped to Europe, subjected to atmospheric changes and return in this country in a state of perfect preservation.

EGGS can be treated at a cost of less than one dollar thousand dozen, and be kept in absolutely perfect condition, or more, thoroughly preserved; the yolk kept in its normal condition, and the eggs as fresh and fresh as on the day they were chosen, and will sell as cheaply as possible. The warmest summer months are seasons when they can be bought for 2 or 6 cents a dozen, and by holding them, can be sold for an advance of from 2 to 6 cents a dozen or more a year on the day.

FRUITS may be permitted to ripen in their native climate, and can be transported to any part of the world.

The juice expressed from fruits can be held for an indefinite period without fermentation—hence the great value of this process for preserving a temperance beverage. Cider can be made, bottled, aged, and shipped, and sold at the highest prices, in a condition equal to the finest a French press can make.

In the making of Foreign Pickles, every detail, whether hot, mild, sweet, sour, or spicy, can be made in a natural condition, without preserving the skin or mutilating the body in any way.

The great value of Ozone to breweries.

There is no change in the slightest particular in the appearance of the package, and no change of any foreign or unnatural odor or taste.

The process is so simple that a child can operate as well as a successful man. There is no expensive apparatus or machinery required.

A room filled with different articles, such as eggs, meat, fish, etc., can be treated at one time, without additional labor or expense.

For instance, there is nothing that ozone will not preserve. Think of everything you can that is to soon, decamp, and then remember that we guarantee that Ozone will preserve it. In every instance that you have used it, your produce will be fresh, and just as good as though you had not used it. The harm to it, as you will find, will weld back everything; it will preserve this or that article—it will preserve anything and everything you can think of. This makes the Ozone demands for your product.

There are instances which we have had in the privilege of publishing. These are scores of others. Write us a letter about these, and get the evidence direct.

Now, to prove the absolute truth of every thing we have said in this paper, we propose to place in your hands the means of proving for yourself that we have not claimed half enough to any person donating any portion of the money to be collected sufficiently to make the trip, we will pay all traveling and hotel expenses for a visit to this city, if we fail to prove any statement that we have made.

How to Secure a Fortune with Ozone.

A test package of Ozone, containing a sufficient quantity to preserve one thousand dozen eggs, or other articles in a small box, will be made and delivered, free of charge, to any person who donates any portion of the money to be collected sufficiently to make the trip. We will pay all traveling and hotel expenses. We will give an account of this to any person who is dissatisfied sufficiently to make the trip, we will pay all traveling and hotel expenses for a visit to this city, if we fail to prove any statement that we have made.

Important to Grocers, Packers, Hucksters, and the General Public.

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The King Fortune-Maker.

Stk.

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Give your full address in every letter, and send your letter to

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959 Ninth & Race Sts., Cincinnati, O.
WHERE TO BUY GOODS IN LANCASTER.

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MILLS, & SON, No. 12 Centre Square, Lancoaster, Dealers in Books, Shoes and Rubbers. Repairs promptly attended to.

M. LEVY, No. 3 East King street. For the best stock in Lancaster go to M. Levy, No. 3 East King street.

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JOHN BAER'S SONS, Nos. 15 and 17 North Queen Street, have the largest and best assorted Book and Paper Store in the City.

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H. FITZsimmons, No. 153, East King st., (over China Hall) is the cheapest place in Lancaster to buy Furniture. Picture Frames a specialty.

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HUGH & MARTIN, No. 15 East King st., dealers in China, Glass and Queenware, Fancy Goods, Lamps, Burners, Chinamies, etc.

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H. RHOADS & BRO., No. 4 West King St., Lancaster, Pa., Dealers in Oldest Watch and Stock of Musical Boxes. Watches and Jewelry Manufactured to order.

PRINTING.


R. GREGORY, 60 S. 5th Street, Philadelphia.

SUGGESTED SEED CATALOGUE.

Thirty-Six Varieties of Cabbage; 25 of Corn; 25 of Cucumber; 11 of Melon; 31 of Peas; 28 of Beans; 17 of Squash; 21 of Potatoes, with other varieties in proportion, a large portion of which were grown on farms will be found in my Vegetable and Flower Seed Catalogue for best best seed to all who apply. Customers of last season need not write for seeds. I sell all Seed sold from my establishment warranted to be fresh and true to name, so far that such seed is prove inferior, I will give the order gratis. The original introducer of Early Ohio and Burt's Potatoes, and a special order of New Vegetables, I invite the patronage of the public. New Vegetables a specialty.

JAMES J. GREGORY, Marlbank, Mass.

Nov-6th

EVAPORATE YOUR FRUIT.

ILLUSTRATED CATALOGUE FREE TO ALL.

AMERICAN DRIER COMPANY, Chambersburg, Pa.

APR-17

FARMING FOR PROFIT.

It is conceded that this large and comprehensive book, (advertised in another column by J. C. McCurdy & Co. of Philadelphia, the well-known publishers of Standard works,) is not only the newest and handsomest, but altogether the best work of the kind which has ever been published. Thoroughly treating the great subjects of general Agriculture, Live-stock, Fruit-Growing, Business Principles, and Home Life; telling just what the farmer and the farmer’s boys want to know, combining Science and Practice, stimulating thought, awakening interest, and interesting every member of the family, this book must exert a mighty influence for good. It is highly recommended by the best agricultural writers, and the leading leaders, and is destined to have an extensive sale. Agents are wanted everywhere. join it

BLOOMSDALE

LARGE LATE FLAT DUTCH CABBAGE.

Large, Flat, Solid Heads, Short Stems.

For a long period of time we have had this stock of Cabbage in cultivation, originally obtained from the German and Swedish market gardeners. It has been a part of our business occupation to keep it wellfulled, and to-day we offer it in its original purity, equal in quality with the very best in the country, even though the best should cost a half dozen dollars per pound.

We have made this crop a study and give our customers the rest of many years close observation, for which our opportunities may be judged by the fact that we have, each and every year, about one hundred and fifty varieties of cabbage raised, to provide seed for the coming season, and from which selections are made with scrupulous care, guided by experience. Not a single grain of seed is raised from Stalks all from Select Sources.

We will mail our Catalogue free of charge to all applicants.

D. LANDRETH & SONS, Nos. 21 and 23 South Sixth Street, Between Market and Chestnut Sts., BRANCH STORE—S. W. Cor. Delaware Ave. and Arch St., PHILADELPHIA.

MERCHANT TAILORING.

1848 (The Oldest of All.) 1881

RATHVON & FISHER, MERCHANT TAILORS AND DRAPERS.

respectivesly inform the public that having disposed of their entire stock of Ready-Made Clothing, they now do, and for the future shall, devote their whole attention to the CUSTOM TRADE.

All the desirable styles of Suits, Waistcoats, Overcoats, Vests, Buttonings, and VESTMENTS constant on hand, and made to order in plain or fashion- able style for quality, and warranted satisfactory.

All Wool Suit from $12.99 to $30.00.

All Wool Pants from $2.50 to $10.00.

All Wool Vests from $2.90 to 6.00.

Union and Cotton Goods proportionately less.

Cutting, Tailoring, Trimming and Making, at reasonable prices.

Goods sold by the yard to those who desire to have them made elsewhere.

A full supply of Spring and Summer Goods just opened and on hand.

As obtaining a public to publicly public announcement they hope to meet their decided recognition in their "new depart- ment."

RATHVON & FISHER, PHILAT AL TAILORS,
No. 101 North Queen Street, LANCASTER, PA.

1848

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GLOVES, SHIRTS, UNDERWEAR.

SHIRTS MADE TO ORDER,
AND WARRANTED TO FIT.

E. J. ERISMAN,
56 North Queen St., Lancaster, Pa.

LANCASTER, PA. JULY, 1882.

JOHN A. HIESTAND, Publisher.

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Pan-Dough.............. 110
Fried Apples.......... 110
Apple Toast............ 110
Apple and Bread Pudding... 110
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A. $1,000 Reward for VICTOR

For any machine breaking up stock clover each and for a day, at the

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The cheapest and one of the best Agricultural paper in the country.
Only 1.00 per year.

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Pennsylvania Railroad Schedule.

Trains leave the Depot in this city, as follows:

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Carriage Builders,
Cox & Co's Old Stand,
Corner of Duke and Vine Streets,
LANCASTER, PA.

The Latest Improved
SIDE-BAR BUGGIES,
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Carriages, Etc.

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EDW. J. ZAHM, Dealer in AMERICAN AND FOREIGN WATCHES, SOLID SILVER & SILVER PLATED WARE, CLOCKS, JEWELRY & TABLE CUTLERY. Sole Agent for the Armadale Plated SPECTACLES.

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G. SENER & SONS,
Manufacturers and dealers in all kinds of rough and finished LUMBER,
The best Saved SINGLES in the country. Also Sash, Doors, Windows, etc.

PATENT O. G. WEATHERBOARDING and PATENT BLINDS, which are far superior to any other. Also best OAK constantly on hand.

OFFICE AND YARD:
Northeast Corner of Prince and Walnut-sts., LANCASTER, PA.

PRACTICAL ESSAYS ON ENTOMOLOGY,
Embracing the history and habits of NOXIOUS AND INNOCIOUS INSECTS,
and the best remedies for their expulsion or extermination.

By S. S. RATHVON, Ph. D.
LANCASTER, PA.

The work will be highly illustrated, and will be put in press as soon as a sufficient number of subscribers can be obtained to cover the cost. The work can only be accomplished.

$5 to $20 per day at home. Samples worth $5 free.

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FRUIT, Shade and Ornamental Trees.

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Furniture and Chairs.

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Special Inducements at the NEW FURNITURE STORE
W. A. HEINITSH,
No. 12-12 E. King Street
(over Print's Grocery Store), Lancaster, Pa.

A general assortment of furniture of all kinds constantly on hand. Don't forget the number.

154-1-12

East King Street
Nov.-13

(over Beers's Grocery Store.)

For Good and Cheap Work go to F. VOLLMER'S FURNITURE WARE ROOMS,
No 909 North Queen St.,
LANCASTER, PA.

All kinds of picture frames.

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GREAT BARGAINS.

A large assortment of all kinds of Carpets are still sold at lower rates than ever at the CARPET HALL OF H. S. SHIRK,
No. 202 West King St.

Call and examine our stock and satisfy yourself that we can show the largest assortment of these Brussels, Wilton, Axminster, and Ingrain kinds, and at the lowest rates.

Also on hand and a complete assortment of Rug Carpets, Satinets, and Ribbons, guaranteed both as to price and quality.

114-1-12

PHILIP SCHUM, SON & CO.,
38 and 40 West King Street.

We keep on hand of our own manufacture, QUILTS, COVERLETS, COUNTERPANES, CARPETS, and every article of household goods, also keeping in stock of the most approved articles. We are in a position to sell to the trade at prices lower than those of our competitors.

111-1-12

Nov.-15

PHILIP SCHUM, SON & CO.
LANCASTER, Pa.

THE HOLMAN LIVER PADS

Cures by absorption without medicine.

Nov.-15

Now is the time to apply these remedies. They will do for you what nothing else on earth can. Hundreds of citizens of Lancaster are using them. Get the genuine at LANCASTER OFFICE AND SALESROOM, 22 East Orange Street.

C. R. KLINE
ATTORNEY-AT-LAW
OFFICE: 15 NORTH DUKE STREET,
LANCASTER, PA.
EGG CULTURE IN FRANCE.

Many small farmers in France par their reeds from their poultry yards. The fowls in Normandy, France, are almost exclusively of the Creve Coeur breed in its various varieties and the number of such eggs annually produced in Normandy is estimated at three million five hundred thousand, valued at £2,400,000, and the annual value of fowls' eggs alone, is £250,000 to the farmers. The average annual produce per hen, is about one hundred eggs, and a hen will continue to lay for five years.

In 1875 England imported eight hundred million eggs, valued at £2,500,000, including charges, of which France furnished five-sixths; that is to say, more than two million per day during the year. In France, hardly a meal is eaten at any table without eggs or poultry forming a part of it. Normandy furnishes nearly two million head of poultry of various kinds to the Paris markets annually, yet falls behind the supply from other provinces. Six millions of eggs are sold weekly in the Paris markets. Many are used in glazing ornamental cakes and sweetmeats. One pastry baker uses 600,000 eggs a year for these purposes. Another large dealer uses five hundred thousand, of which he separates the whites from the yolks—the whites being sent to the manufacturing district north, and the yolks being employed in dressing skins for gloves. Agricultural writers in France are continually urging that more attention be paid to poultry raising by farmers, and they declare the production might be easily doubled. —English Dairyman.

Our punning remarks on eggs in the May number of the Farmer, were regarded by some readers as a sheer egg-agitation, but the above, from unquestionable authority, will illustrate that the real amount of the French egg-traffice is far in advance of estimates made in said remarks. The above relates to the traffic some years ago; hence, at the present date, it may be progressively larger; for in matters of domestic production France is not retrogressive, especially if it pays. The egg-statistics in our own country do not appear to have elicited sufficiently that detailed attention, through which alone the amount and value of the product could be accurately stated. The impulse given to Galliculture of late years will, however, ultimately manifest this, for "Hen-Fruit" cannot be ignored any more than can the hen.

GAPES IN CHICKENS.

A correspondent of the London Agricultural Gazette says:

"I have frequently lost large numbers of chickens from gapes, and have never until this spring been successful in curing them. About six or seven weeks ago the old hens, and both male and female pullets in about thirty chickens, some of the size of a goose, all died, at the same time, of gapes. As an experiment I tried sulphur, commonly called flour of brimstone, and salt, namely, two parts sulphur and one part salt, mixed with water to the consistency of thick cream (it is best to use the finger in mixing, as sulphur will not readily mix with water,) I then applied it with a feather from a fowl's wing, dipping it in the mixture, and putting it down in the chicken's throat about three inches, worked the feather up and down a few times, and then applied some more in the same way again.

"I soon found they were improving very rapidly and so repeated the operation three or four times, two or three days between each application. They are now all cured and doing well. I have not lost one, although some of them were very bad indeed when the remedy was first applied. I may add that the feather requires to have about half the broad side clipped off, or it would be too large for the purpose required.

"It is fully half a hundred years or more since we first knew of the "gapes in chickens," and it is questionable whether the average poultry breeders know anything more about it now than they did then. We think it was then called "pips," but it was all the same—little red worms in the windpipe—and the chickens would gape and pip and die, almost without remedy. Mechanical means were already employed fifty years ago for their removal, although perhaps not so skillfully as it can be done now. We think a thin wire was used, but about nine out of every ten died, if not under the operation, a short time after it.

"Mr. D., forty years before the Lancaster society, does not advance the subject one peg beyond where it was before, nor did he pretend to do so. We think, however, he was in error when he stated that the subject is one that belongs to the domain of the scientist alone. We believe, the men who habitually contemplates the chicken in the egg, who cares it from its pristine condition to its full development, who has a natural and a peculiar interest in its physical existence, who saw it every day and provides its food and shelter, is the very man who is in a situation to get at the origin and cure of the disease. Even if he never should be able to discover its origin, if he discovers a certain and safe cure, he will be a benefactor.

"Ecolant has found gapes living thirty days after they had been expelled from a fowl and exposed to the weather. From their peculiar organization they must necessarily be very local; hence, they may exist in one enclosure and not in another, although there may be only a fence between them, provided the chickens have been kept separate. They appear to be something like the California resurrection plant, becoming vitalized as soon as moisture is given them, although they may have been confined dry for years. We think sufficient importance may have been attached to the total annihilation of the gapes, after they have been expelled from the fowl. We must not, however, be too sanguine in any direction, with all the light we have on the subject, at the present time (of their origin).

"In the meantime, expertness in the mechanical removal of them should be carefully cultivated.

ENTOMOLOGICAL NOTES.

PROF. RATHVON.—Dear Sir: I send you a worm by mail, and enclose a stamp—and wish you would write me and give me the name of the worm, &c. We noticed them last year for the first time. Then, there were but few—now, they are much more plentiful. They destroy the tomato plants, night and day.

Very respectfully,


Being in the midst of a multitude of secular engagements, we sent the box and worm to Prof. Riley, Entomologist of the Department of Agriculture, Washington, D. C. Not, however, because it was entirely new to us, but because we had never noticed it on the tomato plants, nor had heard any complaints of it here, and we supposed it might be something new. Prof. H. writes as follows:

"Dear Sir: I have your note of the 30th ult., with accompanying box. The larva destructive to the tomato plants is that of Procteia lineatella, which is known to feed on a great variety of plants. The unusually moist weather we had this summer generally favored the development of this and other walnuts, and complaints at their destruction have reached us from almost every State east of the Rocky Mountains.

Yours truly,

C. R. B.
two boxes to be packed with some soft or elastic material, to prevent too violent jarring. Packages should be marked with the name of the sender.

KITCHEN GARDEN FOR JULY.

In the Middle States, this month, like June, is the month of labor in the garden. Weeds are in rapid growth, plants are to set out, seeds saved, and various matters require attention.

Beans, plant for succession. Beans, the long blood and sugar; also Mangold Wurzel may be planted for stock as late as July. June is, however, much better. Beans, for late winter and spring use, may now be sown. Cabbage, plant. The winter sorts of cabbage should now be planted out. Where many are to be transplanted it is preferable to wait until a suitable time—a heavy rain, or showery weather—but in a small garden cabbages may be transplanted almost at any season, by careful watering and to the Angoumois grain moth, Eudrel, sow. Peas, a few may be sown; they seldom do well this season. Turnips, sow.—

Rural Register.

Quality and Vitality of Seeds.

Seeds properly ripened are, with few exceptions, as good the second year as the first—indeed, many are so well protected by natural enemies after they are sown that what I have in previous years recommended. Experience has established the fact that burning over a meadow, or prairie, or field of stubble, either at sunset or soon after dark, destroys and赶s the worms from originating in such meadow or field. Such burning destroys the previous year’s stalks and blades, and, as a consequence of the burning, will destroy most of the worms in injurious numbers. Judicious ditching, i. e., a ditch with the side toward the field to be protected permanently or for the season, will protect a field from insects confruous from some other infested region when the worms are marching. When they are collected in the ditch they may be destroyed either by covering them up with earth that is pressed upon them by burning straw over them, or by pouring a little coal-oil in the ditch. A single few-far, six or eight inches deep, and perhaps half as long as the length of the ditches, will, in 20 years, has also been known to head them off.

From experiments which I have made I am satisfied that where fence-lumber can be easily obtained, it is preferable to use it as a substitute for the ditch or trench, by being secured on edge and then smeared with kerosene or coal-tar (the latter being more parti1e and the former more liable to be blown off). The means of laths and a few nails the boards may be so secured that they will slightly slope away from the field to be protected. Such a barrier will do the same for wheat or corn, and is very much more permanent or persistent. It is said that the worms are too persistent or numerous. When they are excessively abundant they will need to be watched and occasionally dosed with kerosene in the ditch, and the same procedure is desirable in the case of the board and thus bridging the barrier. The lumber is not injured for other purposes, subsequently.—Prof. C. V. Riley.

Melons—Bugs—Coal-Tar.

Among the most effective applications that I have ever known to keep bugs off of vines of any kind are the following. Take a vessel of water, let it stand over night till the water is scented and colored with the coal-tar; then, morning, noon, and evening, or as often as necessary, pour the solution over the vines and hill with the liquid; it will both keep the bugs away and make the plants grow more vigorously, being a good stimulant to such plants. Sprinkling the ground freely over the hill will almost wholly kill or keep off the cutworms and grubs. Very freely applied it does much to kill off the potato beetle, which is so destructive in some localities.

Insect Powder.

Wm. Saunders, of London, Ontario, well known for his horticultural experience, as well as distinguished as the editor of the Canadian Entomologist, finds the Dilmation Insect powder, made from Pyrethrum cinerea, so efficacious, an excellent insecticide. He says: "House flies are very sensitive to the effects of these powders. A few puffs of the dust against the flies, blown about the air of a room with the door closed, the discharges directed toward those parts where flies are congregated, will stupefy and kill them with- 
in a very short time; and, along with all that pungent, and to breathe an atmosphere charged with it will frequently cause a slight excitement. But beyond this the operator need not anticipate any further irritation. Frequently during the past summer, when flies have been troublesome, we have pretty thoroughly cleaned our rooms by this means, and kitchen at night, closing the doors, and in the morning found all, or nearly all the flies lying dead on the floor. A few minutes after its use they begin to drop on their backs, and after a very short time die; if a room be closed for half an hour after using the powder, few, if any will escape. He finds it as good against Aphides and other plant life. Much superior in its results to tobacco smoke.

OUR LOCAL CROPS.

As we go to press our farmers have about finished gathering their hay, wheat and rye crops; and the present indications are that they have been unusually bountiful in their yields, perhaps more than a fair average. Of course there will be some exceptions to the general result, influenced by local causes, both favorable and unfavorable.

The oats crop is also promising, and some very "fall oats" is reported in various localities. Perhaps no season has passed for a long time in which a more vigorous corn growth has occurred.

The late rains have also had a stimulating effect upon the corn, potato, and tobacco crops, although in some localities great injuries from noxious insects have been reported, and especially by the notorious cutworm.

The term "cutworm" covers a large number of species, and many varieties, all of which are "nicely" destructive to vegetation—cutting off much more than they can possibly devour. This season we have many complaints against them, as being severe upon the young tobacco plants, often necessitating two or three different plantings. The tobacco growers cannot go far wrong in concluding that this enemy to their cherished plant has "come to stay. It has in fact been about nothing but a luxury; it has instead of being a nuisance to home, which it is, it must be classed with "consumers."

If this plant had no enemies at all, it would soon become a mere drug, and no sale could be found for all of it. The cutworm will be the great regulator of the quantity of the quality, and also of the price. Like the "Colorado Potato Beetle," means must be found for its destruction, and this will involve a perpetual labor. It can never be said that "they are now extinguished," for perhaps when least expected, they will be most abundant. Fortunately for the tobacco grower, they can and do thrive on other plants than the tobacco. When they attack this plant they are already well grown, and nearly mature, and...
Destroying Weevil.

The best remedy yet found for their extermination is frequently stirring the grain. It is more than probable that fully saturating the bins with the fumes of sulphur will kill the insects, but as the method is difficult to execute and as the advent of the potato beetle, because we apply the remedies for their destruction when they become too abundant, and this must also be resorted to in regard to the tobacco. Of course, it will be more difficult to contend with the enlivened than with the potato beetle, inasmuch as the former is a "midnight marauder," whilst the latter is an "open enemy." With all these counter influences, there will be an immense crop of almost everything the present season and there may be some anxiety to know what to do with it—"it would be unchristian to wish for war as an outlet."

Effects of Baking on Flour.

Good bread should be full of small pores, and uniformly light. Such bread is produced by strong flour; that is, such as will rise well; retain its bulk and bear the largest quantity of water. The largest proportion of gluten usually contained in the flour of wheat, gives the higher value it has over that of other grains. If the gluten be washed out, and put alone in the oven, it will swell and become full of very large bubbles, and the comparative baking qualities of different samples of flour can be tested by the height to which specimens, so treated, rise.

Dry starch, when heated, is generally changed into a species of gum, and of sugar completely soluble in water. According to Vogel 100 parts of flour, and of the bread made from the same wheat, respectively tested, shows a gain in the latter of 18 parts of gum at the expense mainly of the starch. The yeast added to the dough induces fermentation, by which the sugar of the flour is changed into carbonic acid gas and alcohol. The starch, carbonized and in the form of minute bubbles of gas, permeates the whole substance of the dough, causing it to rise. If too much water has been added—or if not sufficiently kneaded—or if the flour be too finely ground—or the paste not sufficiently tenacious in its nature—the bubbles will rise together, forming large airholes, and that irregular appearance so disliked by the skillful baker. The quantity of water which bread retains, when baked, depends in some degree on the quality of the flour. The Acts of Parliament, England, assume that 250 pounds of flour will produce 32 lbs. of bread—this calculation, when increased, be baked, of one-seventh of its weight of water. But the quantity of water retained by the flour now in use is much greater.

Johnston, in his lecture on Agricultural chemistry, states that home-made bread (white and brown) baked in his own house, whether of first or second quality, as well as that baked in two other private houses, lost by prolonged heating, at a temperature not exceeding 22° C., from 32.9 to 41.1 per cent. of water. So that wheaten bread, one day old, contains about 41, and two days old, 43 per cent. of water. This proportion is almost exactly the same. Dumas estimates the white bread of Paris.

Bread baked for public institutions, not generally being so well fixed, or baked with many leaves stuck together, contains more water. The brencks bread of England and Paris contains about 51 per cent of water. English wheaten flour contains naturally, on an average, 16 per cent. of water. If, therefore, the bread baked from it contains 44 per cent., 33 per cent. will have been added to the natural amount, or the flour in baking takes up half its weight of water. A suck of 280 pounds of flour only to give 2 pounds of well-baked bread, Deducting, say 5 per cent., for fermentation and dryness of the crusts, there would remain 400 pounds of bread of the best quality.

Chemical writers have assumed that the quantity of water absorbed depends mainly upon the proportion of gluten the flour contains. The following facts, says Prof. Johnston, do not accord with this supposition. (1) Household bread, made respectively from the flour of French wheat, and of wheat from Taganeo, Russia, retained nearly the same amount of water; tho' one sample of the latter contained more than twice as much gluten as the other. (2) The flour from Odessa wheat contains about one-fourth more gluten than French flour in general, yet it absorbs very little more water. (3) Rice is said to contain very little gluten—not estimated at more than 6 or 7 per cent.—and yet, as the result of numerous trials, it is said that an admixture of a seventh part of rice flour causes wheaten flour to absorb more water. (4) If hard wheats are ground too fine they lose a part of their apparent strength, the flour refuses to rise as it would if sent to the baker in a more gritty and less impalpable state. (5) Lastly, the admixture of very minute quantities of foreign matter, by way of adulteration, increases the water absorbing power of flour. In some parts of Belgium it is said to be an old practice to knead the bread with a small quantity of blue vitriol (sulphate of copper). A solution of the salt added to the dough, in proportion of about one grain to two pounds of flour, gives the bread a fawn color and thus permits the use of inferior flour, and causes the bread to retain about 6 per cent. more water, without appearing more moist. Aluna improves the color of bread, raises it well and causes it to keep water, but requires to be added in larger quantities than the poisonous salt of copper. Common salt also strengthens the paste and causes it to retain more water, so its addition is a real gain to the baker.—American Miller.

Phosphoric acid in plants.

The substance especially important to the farmer is undoubtedly phosphoric acid, which is found in combination with lime, as plants assimilate the same in considerable quantity, while it is sparingly contained in the soil.

Plants require phosphoric acid in the following proportion to 1,000 pounds:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Phosphoric Acid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>8.5 lbs.</td>
</tr>
<tr>
<td>Barley</td>
<td>7.5 lbs.</td>
</tr>
<tr>
<td>Oats</td>
<td>5.5 lbs.</td>
</tr>
<tr>
<td>Potatoes</td>
<td>5.5 lbs.</td>
</tr>
<tr>
<td>Corn</td>
<td>5 lbs.</td>
</tr>
<tr>
<td>Sugar-beets (tuber)</td>
<td>4 lbs.</td>
</tr>
<tr>
<td>Wheat (100 lbs.)</td>
<td>3.5 lbs.</td>
</tr>
</tbody>
</table>

If grain, potatoes, etc., are to nourish us and our cattle, they must contain phosphoric acid, as our growing bones require one-third of this substance in the form of phosphates in the bones, and the other third in the muscles.

Imumerable experiments have proven—
1st. That plants cannot perfectly develop unless the soil contains sufficient phosphoric acid.
2nd. That the application of phosphates increases the weight and quality, and frequently shows a difference of more than twenty per cent. in the particles of starch. From "What of fertilizers."

We cannot ignore the fact that all vegetation, as well as animal, growth, require for their normal development a sufficient quantity of inorganic and mineral substances as stimulants to that end, and that phosphoric acid is one of the most prominent among them.

Common hydraulic cement mixed with oil forms a good roof for woods and out-buildings. It is waterproof and incomestible.
THE LANCASTER FARMER.

[July,]

"A MARE'S NEST."}

I have been unable to find any explanation of this phrase in the best German story, often heard in my childhood in Pennsylvania, may furnish it.

The Swabians (called "Swoopjes") in Pennsylvania say that the Germans what the mare are among English-speaking people, but less volatile, witty and frolic-loving—like them in their aptitude for blundering, and in con- founded an appellation, form what are called "Irish Bulls." Of course every comic blunder and burlesque speech is, by the rest of the Germans, ascribed to the Swabians, much by way of precedence. Now for the story.

A Schwope in passing through a cornfield saw a number of pumpkins, and inquired what they were. "Oh!" said the farmer, "that's a mare's eggs. He bought one of the largest and carried it on his journey until he reached the top of a long hill. The wind blew in his face and his burden, he laid down the pumpkin and sat down on it for the double purpose of resting himself, and also aiding in hatching out the mare's egg. As he rested, meditating on the advantages and pleasure of having a horse on which to ride, instead of trudging on foot, he fell asleep, lost his balance, and away rolled the pumpkin down the hill. When he awoke, there was a heap of dried brush at the foot of the hill, and in that brush heap a rabbit had made his home. On rolling the pumpkin with his leg, it burst, and the rabbit broke into pieces. The Swabians turned "Bunny," thinking "the day of doom" had come, bounded away in uttermost haste. The poor Schwope could not believe his eyes to see all this, verily thought that the rabbit was a colt released from his pumpkin, ran after "Bunny," whiningly liking a mare after her foal, "Oh, Stone, here's your child!"

If any of your numerous readers can give us a better or truer explanation of the origin of the phrase, "finding a mare's nest," I will cheerfully "be the messenger," and will be obliged for his explanation. That the above has an unsatisfactory ending, but makes it in accord with the result of "finding a mare's nest.

[Although the term "mare's nest" was known long before the childhood of the writer of the above, and also beyond the borders of Pennsylvania, it is doubtful whether any better account can be given of its origin than the one he alludes to; to be the locality of its birth Pennsylvania or Swabia. It is a sort of paragram, which probably had its origin in some trivial circumstance that never was recorded, but which was sufficiently expressive to become popular among common people. To find a mare's nest is to make what you supposed was a nice find, but it turns out to be all moonshine. According to Dr. Brewer we call a "nightmare" was by our forefathers supposed to be the Saxon demon mare or mare, a kind of vampire, sitting on the sleeper's chest. The vampires were said to be the guardians of hidden treasures, over which they brooded as a hen does over her eggs, and the place where they sat was termed their nidi or nest; hence the leg-eyed, many-armed and long-tailed night-mares which so many see, may only be imaginary personations hitched out of a superannuated form of the old old postboxes, gates, cakes and sausages, jacked into an overgrown stump just before going to bed.]

When any one supposed he has made a great discovery we ask if he has discovered a mare's nest, or the place where the vampire keeps guard over hypothetical treasures. "Why dost thou think What mare's nest hast thou found?"—Jeff, and Fletcher.

Dr. Brewer says, farther, in some parts of Scotland the people use a skate's nest instead of a mare's nest, and in Gloucestershire a long-winded tailed is called a horse-nest. In Devonshire any kind of nonsense is called a blind mare's nest, and in Cornwall they say you have found a wee's nest and are laughing over the eggs. The word mare in England has various legendary phrases associated with it.

For instance, the Cornishman at Gorwell—a large stone resting on two or more others, as a crow resting on two or more bricks. Barrows, near Hambledon—tumuli or mounds—are called the grey mare. Away with the mare meant off with the blue-devils, or good-bye to care. This mare is the invocula called the nightmare.

To win the mare and lose the butter, was to play "double or quits," a reckless kind of speculation or gambling, which impoverishes nineteen where it occurs one.

In Herefordshire and Shopshire, to cry the mare was a singular harvest custom. When the ingathering was completed, a few blazes of corn, left for the purpose, would have their ears adorned with two pieces of string, and tied to arrows shot at them from a bow. In that manner, the arrows would pierce themselves at a certain distance and fling their sickles at the "mare." He who succeeded in cutting the knot would cry out "I have her." "What have you?" "A mare." "Where is she?" The name of some farmer whose fields had been reaped would here be mentioned. "Where will you send her?" The name of some farmer whose corn had not yet been harvested would then be given, and all the reapers would give a final shout—"the mare!"

The grey mare is the better horse: means that the woman is paramount. It is said that a man wished to buy a horse, but his wife took a fancy to a gray mare, and so peremptorily insisted that "the gray mare was the better horse," that the man was obliged to yield the point. When a woman is paramount, the French say: "To a hawk's marriage," because the female hawk is generally both larger and stronger than the male bird.

Prior wrote: As long as we have eyes, or hands, or breath, will look, or write, or talk you sit to death; Yield, or she—Pegasus will gain his course, And the grey mare will prove the better horse."

In a work on Old Oives and Cotches, the following is given as the origin of that popular maxim, instead of the English of Prior's: "Will you lend me your mare to go a mile?" "No, she is lame leaning over a sieve." "But if you will her to me spare, I will have money for your mare." "Oh, ho! I say you no?" "Well, what will you move go?"

It will be observed, however, that all this historical evidence is based upon the traditional—"It is said," but who said it, where it was said, or when it was said, do no one sayeth. We must therefore take it as we find it, and for what it is worth. If we limited our knowledge within the scope of our own practical experience, perhaps we should know not precious little, and that little would be circumscribed by our opportunities, and our habits of observation. If a long-winded story may be properly regarded as a mare's nest, then our readers may have found one in these cogitations. [Ed.]

THREE WONDERS.

It is related of an aged Friend (or Quaker) that, "moved of the spirit," to rise and speak in meeting, she said there were three things in life which caused her to wonder greatly. The first was that boys worried themselves by tying strings up into the trees to knock down the apples; when, if they would but wait, the apples would fall of themselves. The second was, that men took so much pains and spent so much money in going to war to kill each other; when, if they would but wait a few years, their enemies would die of themselves. And the third was, that the Swabian farmers, called "Irish Bulls," and from whom we derive our word "bull," were not exactly like those of the good old friend preacher—as the reader may see. The reason, may be, that the present vendors of alcoholic drinks assert that all prohibitory laws only increase the sale and use of intoxicants, when they oppose all such laws as being injurious to their business! The second is, that the makers of Oleomargarine declare that their article is better than most kinds of butter—equal to any butter except the very choicest and most expensive, and that it is preferred to common butter by all who have tried it; and yet they do not advertise it as Oleomargarine, nor label it as such. The third is, that the farmers, who color their butter with umbrageous coloring, may throw it off as grass or June butter, and who declare that people prefer it colored, and pay more for it, do not label or advertise their butter colored. The fourth is, if all adulterators of cheese and butter label their articles, and sell them for what they are!—G.

EXCERPTS.

Good feeding is the secret of success in sheep-husbandry.

There is no portion of our country where sheep husbandry can be more profitably carried on than in the Virginias, the Carolinas, Tennessee, and portions of Georgia and Alabama.

Gardening is regularly and practically taught in more than 30,000 primary schools in France. Every schoolhouse has its garden, and teachers must be not only good gardeners, but qualified to teach horticulture, or they cannot pass examinational.

The celebrated English farmer, Alderman J. J. Mechi, Tietree Hall, has but six acres of permanent pasture, and yet manages to keep as an average 200 sheep, and from fifteen to twenty head of cattle. All food is cut up, no roasting at large is allowed, and supplemental food is invariably given. The sheep are always within iron huddled folds, removed morning and evening.

Hens manure should not be composted with unleached ashes unless it is to be used immediately. It is better to mix it after being thoroughly pulverized with dry earth, when it is one of the very best amendments. All of the valuable constituents of the fertilizer will then be saved.

What is needed is that our American far-
THE LIVERPOOL JOURNAL: The flock and summer residence of ex-Governor Stanford, of California, contains about 300 high-bred pure-bred Merino, and it requires a mile of stable to accommodate them. He is breeding his thoroughbred mares to trotting stallions; not especially with a view to the production of fast trotters, as some of our contemporaries would have us think, but, as a means of laying the foundation of permanent improvement in the horse stock of this State, for general purposes; and in this he is not far out of the way.

The longest line of fence in the world will be the wire fence extending from the Indian Territory west across the Texas Panhandle, and thirty-five miles into New Mexico. We are told that Mr. Washington Geer says that such a fence is already under contract. Its course will be in the line of the Canadian river, and its purpose is to stop the drift of the northern cattle. It is a bold and splendid enterprise and will pay a large percentage on the investment. The fence will be over 200 miles long.

The oat crops of Georgia, South Carolina, and North Carolina, according to all accounts, is the largest ever made in these States. This crop is now being harvested. It is estimated that Wilkes, Lincoln and Hancock counties, in Georgia, will produce one million bushels each. The crop on the Ohio side of the mountains was the most abundant of the small grain crops of Wilkes estimated at one and a quarter million bushels. One planter in that county has a thousand acres of oats and the yield will be fully forty thousand bushels. A planter near Augusta will make twenty thousand bushels of oats and wheat. With this immense crop there will be more than sufficient for home consumption and a large quantity can be sold, bringing a considerable amount of money into the State.

The capital investment in railroads in this country has been divided as follows: Jay Gould and associates, $505,000,000; the Pennsylvania Central, $220,000,000; Vanderbilt combination, $364,000,000; Huntington combination, $321,000,000; Jewett and the Erie combination, $317,500,000; Garrett, of the Baltimore and Ohio combination, $194,000,000; the Pennsylvania coal roads, $768,000,000; Alexander Mitchell management, $129,000,000; Garrison management, $829,000,000.

-Exchange.

A HINT FOR COFFEE DRINKERS.—While "dining out," one day recently, the coffee, which, though the last, was by no means the least of the good things furnished, was so unusually weak that it was suspected by both of corset and of coffee, and the hostess, noticing the effect, started to retire to the kitchen. The coffee to be used is Maracaba and Java, equal parts of each, finely ground. One large cup of coffee, one cup of cold water, one well beaten egg, mix thoroughly; add four cups of cold water and place over the fire. After it reaches the boiling point allow five minutes to finish the process; strain and serve immediately. This seems a very simple process, but in the hands of a servant, if allowed to boil too long, it would be easily spoiled.

THE WISCONSIN QUARTER.—Licht, Roder of the German Association, has been riding to Grandia from Strasburg in order to find out how it is possible, under certain conditions, to draw upon the strength of horses. He left the latter place on September 29, and arrived in the former on November 20, a period of 33 days, including 8 days of rest and a distance of 2,500 kilometers. His animal was a Prussian mare, 9 years old, and when he arrived in Grandia he found no difficulty in selling her to advantage. He wore no spurs, and his baggage comprised only a waterproof and a pair of capacious saddle bags. He wore a guide-book, pocket maps, and a few other objects. The pace at which he rode was a steady trot when the ground permitted, and a fast walk when he could not trot. Roder concludes from this experience, and in spite of the apparent good results of it, that so much work is too great for good horses and vigorous men.

HOW TO COOK RICE.—Rice is becoming a much more popular article of food than heretofore. It is frequently substituted for potatoes at the chief meal of the day, being more nutritious and much more readily digested. At its present cost, it is relatively cheaper now than when first introduced. Rice is a grain-grits of any kind. In preparing it only just enough cold water should be poured on to prevent the rice from burning at the bottom of the pot, which should have a close-covering, and with a moderate fire the rice is steamed rather than boiled until it is nearly done; then the cover is taken off, the surplus steam and moisture allowed to escape, and the rice turns out a mass of snow-white kernels, each separate from the other, and as much superior to the usual soggy-mass, as a fine meaty potato is superior to the water-soaked article.

HOW TO CATCH CROWS.—A gentleman writes us that he has succeeded in catching several crows from his corn-field in the following novel manner: "I arranged a number of large twine strings with a slip-noose in each, and placed them on stumps in the fields in such a manner that when pulled the stumps would not interuster with the closing of the noose. I stood hidden at a convenient distance, and would almost invariably catch the crow when he alighted on the stump. I caught eleven in one morning in this manner."

THE FIRST BALLOON.—In June, 1783, Stephen and Joseph Montgolfier sent up the first balloon. To commemorate the centennial of the event, it is proposed that an International exhibition of "aerial art" be held at Paris next year. The "aerial arts" are to include every industry, science or art, relating to gas or the atmosphere, which is supposed to have any connection directly or indirectly with aerostatic experiments.

FATTENING SHEEP IN WINTER.—In the first place a good way is to begin early in December by giving, in addition to straw, to each sheep, each day for a couple of months, a pound of meal, grain, or oil cake. If the roots of tulips and hyacinths are left in the bed where they have bloomed and the skulls cut after blooming and the bed sufficiently protected in the winter there will be annual blooming. The reason why hyacinths that are flowered in water-glasses are exhausted and make so poor a growth is that the flowers and stems are produced at the expense of the bulb, and this last renewed in any way. When grown in rich soil this exhaustion does not occur and the bulbs are able to bloom repeatedly.

The middle grains of the fine ears of corn for seed. Hogs should be allowed to have a heap of coal ashes. They will be all the healthier for it.

Beep and mutton are not flavored by feeding turnips to the animals—at least this is the statement of some who have tried it.

The amount of fruit shipped from California during the present season will bring about $1,000,000 profit to the State.

It costs the people of Tennessee $1,000,000 annually to stew and use snuff. This is a Nashville merchant's estimate of the annual consumption of the article.

An orchard should never be planted in a clay soil unless the latter is underdrained, after which it becomes one of the best soils for apples and pears.

Left every farmer keep all the stock he can possibly afford to—and generally he can afford to keep more than he does. The dependence of farming for all time must be mainly on stock.

A WISCONSIN farmer, twenty-three years ago, planted a piece of waste land, unfit for cultivation, with black walnut trees. The trees are from sixteen to twenty inches in diameter and have been sold for $27,000.

FRANCE produced last year 750,000,000 gallons of wine. Of these, 47,000,000 were made from sugar, 51,000,000 from raisins, while 154,000,000 were imported from Spain and Italy, to "blend" with their home product. No wonder everybody wants to drink French wines; they are so pure.

In a small grove which adjoins the Schenberger residence near Cincinnati, an array of crows take shelter every night. They assemble by thousands an hour before dark, and an old man living near the place says that to his personal knowledge the same grove has been their dormitory for sixty years.

Don't do it.
Don't sleep in a draught.
Don't go to bed with cold feet.
Don't stand over hot-air registers.
Don't eat what you do not need just to save it.
Don't try to get cold too quickly after exercising.
Don't sleep with insecure false teeth in your mouth.
Don't switch the day's work without a good breakfast.

Don't sleep in a room without ventilation of some kind.
Don't stuff a cold lest you be next obliged to starve a fever.
Don't try to get along withoutannel underclothing in winter.
Don't use your voice for loud speaking when hourse.
Don't try to get along with less than eight or nine hours' sleep.
Don't sleep in the same underwear you wear during the day.
Don't keep your feet by the fire but try sunlight friction instead.
Don't try to keep awake upon coffee and cocktails when you ought to go to bed.
Don't drink ice water by the glass; take it in sips, a swallow at a time.
Don't strain your eyes by reading or working with insufficient or flickering light.
Don't use the eyes for reading or fine work in the twilight of evening or early morn.
Don't try to lengthen your days by cutting short your nights' rest; it is poor economy.
Don't wear close, heavy fur or rubber caps or hats if your hair is thin or falls out easily.
Don't eat anything between meals excepting fruits, or a glass of hot milk if you feel faint.
Don't take some other person's medicine because you are troubled somewhat as they were.
Don't blow out a gaslight as you would a lamp; many lives are lost every year by this mistake.

What the Farmers Must Feed.—The Census Bureau has issued a bulletin showing that the live stock of the United States on farms on June 1, 1880, was as follows: Horses, 10,337,981; mules and asses, 1,812,182; working oxen, 983,976; milch cows, 12,443,593; other cattle, 22,488,500; sheep, 35,191,656; swine, 47,683,954. The rate of increase from 1870 to 1880 was, in horses, 45 per cent; mules and asses, 61 per cent; working oxen, a decrease of 25 per cent; milch cows, an increase of 30 per cent; other cattle, 66 per cent; sheep, 24 per cent, and swine, 90 per cent.

Selections.

The Uses of Pruning.
Pruning is to the tree what education is to the mind, or the "polishing" of the marble after it is taken from the quarry. Pruning is absolutely beneficial to all kinds of fruit trees at least. Of course we mean pruning as a use, and not as an abuse.
As to the best time for pruning, in my view, it is to begin as soon as the trees are two feet in height. You then can use your pocketknife, which ought to be used constantly whenever "suckers" appear. This gives the tree a good shape and takes all the surplus wood away. This work can be done any time during the year, with little exception. There are only about two or three weeks during which I generally avoid pruning—that is, from the time the sap begins to flow until the leaves are developed. Most fruit trees require continual pruning and shaping, to make them bear better and larger fruit, and withal, impart to them beauty. Yet, there is a great difference, especially in apple trees. Some trees need much more pruning than others, nearly all the time, or they would become like a hedge-fence. The Pennsylvania Red-streak, Munson-sweet, and the Wagner require very little pruning with me. Cherries also require little pruning, but plums, prunes, prunes and pears, are much improved by early and judicious pruning. The peach is also improved, and we all know that the grape needs a yearly thinning-out to bring it to perfection, unless it is mainly desired for shade, over an arbor, pump, shed, or a south-side exposure to the sunshine.
Nearly all kinds of trees need training and pruning, unless growing in a dense forest, and no man possessing an "arboricultured" eye and mind, can even pass through a forest, without speculating on improvements, here and there, that would have resulted from pruning, or the removal of obstruction. I have now a limited, but dense, forest of beeches, poplars, walnuts and chestnuts, in which the trees are growing straight up from forty to fifty feet in height, with the side branches dying and dropping off; but the same trees elsewhere, with trimming, or they would get too "forky", or spreading. Along a road or in a yard, such trees require constant shaping, in order to make good "butts," and beautiful and symmetrical tops. This is however controlled very much by fashion, fancy or individual tastes.
When on a recent visit to the Central Park in New York, I was astonished at the luxuriant growth of the many varieties of trees in that magnificent enclosure. They have all kinds of ornamental and common forest trees, all over the park. These trees are almost invariably trained to grow with low tops, and long side or lateral branches, from two feet from the ground upward, many of them looking very strange, if not unsightly, for what purpose I could not understand. If I had had the control of the park, I would have trimmed every tree up from eight to ten feet from the ground, so that persons could easily promenade under their branches. But as it is now, it could not be done any more, as the trunks of a few of them are a foot in diameter near the ground. The Elm is a favorite tree in the park, and in fact is also a leading tree all over the west, as well as many parts of the east.
In relation to the Elm, we do not hazard much in saying that it is and always has been a favorite tree in Pennsylvania, and, the very first event which signaled the origin of the State, transpired under the spreading branches of an Elm, on the banks of the Schuylkill, in the old "Northern Liberties" of Philadelphia. Boston common had at one time, and perhaps still has, some fine old elms. There were many of them in Lancaster, and some are still remaining. But the fact is, of late years they have been so much subjected to the ravages of the "Elm leaf Beetle," that many have been destroyed by them, or have been killed by the "leak." This species is exclusively destructive to the foliage of the Elm, and occurs in such immense numbers, producing two or three broods during the season—that when the trees are large, there seems to be no practical remedy but to remove them entirely.
In regard to the low branched trees to which our contributor alludes, perhaps the authorities don't want people to promenade under them, lest they also trespass upon the grass. They provide special promenades, seats, canoples, pavilions and trees, sufficient for the shelter and the exercise of pedestrians, unless there should happen to be an unusual crowd in the park, and as to sightliness, or unsightliness, that depends altogether on the peculiar taste of the viewing individual. —Ed.

Balance of Trade.

Editor Farmer.—Your correspondent P. S. R., in the last number of The Farmer, referring to a discussion between him and myself two or three years ago on the "Balance of Trade" question, credits me with having denied that it was a better sign of prosperous times when the balance of trade was in our favor than when the balance is against us, and asks what I have to say since, the balance is going strongly against us and seeing that we are importing about $3,000,000 worth of goods per week, and our exports last year were far less than in 1880. This state of affairs, Mr. R. thinks, must result to our disadvantage, and I do not dispute it a point.

But according to my recollection I never denied that it is better to have the balance of trade "in our favor." I simply denied that the fact that we import more value than we export proves there is a balance against us; and the reasons I gave for that opinion have not been answered, or scarcely attempted to, from that day to this, so far as I have seen. See my several articles in The Farmer of February, April and June, 1879.

It is of course disadvantageous to us that we trade short crops last year, and that consequently we have less agricultural products to export. That this also disadvantageous to the country if the $3,000,000 of goods imported per week are not paid for, but are bought on credit, to be paid for out of our future earnings, just as is the case with an individual who runs in debt beyond his earnings or his means to pay. The reason there is so much confusion of ideas and wrong notions on this subject, I think, is that people have been led to imagine that the exchange of productions between two nations is governed by different principles, and its advantages or disadvantages are gauged by an entirely different rule than the trade between two or more states. That this also disadvantageous to the country if the trade of one nation with another is not between the two nations as such, but merely between individuals of those nations; and the profits or losses, the advantages or disadvantages of any trading transaction in which a man engages, of course are not in the least affected by the nationality of the person with whom he deals.

Everybody knows and will acknowledge that if an individual sells property, the more value he gets for it the better he is off, but strange to say, there are thousands of people who believe the same in the case of nations. That this also disadvantageous to the country if in our trade with foreign countries the less value we receive in return for what we part with, the more prosperous we must become.

Now if a farmer in Lancaster county sends abroad—exports—to Europe or elsewhere, grain or tobacco worth at home $100, his aim and object of course is to get in return more than $100, either in money, or money's worth in some other property. If he did not expect that, he would not send it away. Well, suppose he gets for it, say $125 (after paying all expenses) either in cash or clothing or anything else that he may prefer, it is perfectly
clear that he is $25 richer, and so is the country. But here the import has exceeded the export by $25, and if the balance of trade theory of Mr. R. is correct, it is a most unfortunate transaction for the country! On the other hand, if owing to a fall in the market at the place to which the produce was exported, or other cause, only $80 is realized for it and brought home, then, according to the same theory—our exports having exceeded the imports—it shows a highly prosperous condition of our foreign trade! It seems to me that a theory leading to such a conclusion ought to be explained or abandoned.

Is it not clear, in the light of common sense, that the only advantage to the country from its exports is, that we are thereby enabled to import in their place something more valuable or desirable than what was exported? Is not every dollar's worth exported for which we do not or cannot import something of equal or greater value, effort wasted and money thrown away?—J. P., Lancaster, July 7, 1882.

THE MANUFACTURE OF SORGHUM.

The manufacture of sorghum at the department therefore has been found to be so expensive and unsatisfactory that the work can evidently be better conducted elsewhere. To expend the money raised in this way would be unwise under any circumstances, and it is made doubly so by the impossibility of procuring the sorghum cane at any reasonable price in this neighborhood, after the discouraging crops of last year, and by the additional fact that the appropriation is not available until too late in the season for planting to begin.

While therefore such scientific investigation as is deemed necessary at this department will be continued—the experiment of manufacturing can better be conducted by those who have thus far furnished us all the valuable information we have; and this work I refer to the manufacturers themselves, to whom I submit the following proposition.

Each manufacturer is requested to submit an account of his work to this department, covering the following points, viz:

1. An accurate account of the number of acres of sorghum brought to his mill, the number of tons of cane manufactured; the yield of sorghum per acre, the mode of fertilizing; the time of planting; the time required for maturing the plant; and the value of the crop as food for cattle after the juice has been extracted.

2. The amount of sugar manufactured; the amount yielded per ton of cane; the quality of the sugar; the amount of sirup manufactured; the process of manufacturing; the machinery used; the success of the evaporator, the vacuum-pan and the centrifugal in the work of manufacturing.

3. The number of hands employed in the mill; the cost of fuel; the cost of machinery; the wages paid for labor; and the price of sorghum raised at the mill if not raised by the manufacturer.

The returns when received will be submitted to a competent committee for examination, and in order to compensate the manufacturers for the work of making these returns I propose to pay for the ten best returns the sum of $1,200 each,—the decision to be made by the aforesaid committee. Each return must be sworn to before a competent officer.

SUGAR BEETS.

I have distributed to ninety persons a supply of the best sugar beet seed which I could obtain; and I would request each person having received this seed to send to this department a statement of the amount of land planted by him; the yield per acre; the fertilizer used; the crop and market price; and the progress made.

I also request that each person make this experiment to forward to this department a sample of the crop for analysis. The directions for this will be issued hereafter. An accurate statement of the process of manufacturing beet sugar in this county is of great importance, and I propose to compensate the manufacturers for preparing such statement by the payment of the sum of $1,200 for each of the two best returns submitted to a committee as in the case of sorghum.

OTHER SUGAR-PRODUCING PLANTS.

The promise of 1,000 pounds of corn-stalk sugar per acre, which was made in 1841, and has often been repeated with great confidence but at the expense of the corn crop and in ad-

U.S. DEPARTMENT OF AGRICULTURE.

To the Manufacturers of Sugar from Sorghum, Beets and Other Sugar-Producing Plants in the United States.

Congress in the appropriation for this Department, for the fiscal year commencing July 1st, 1882, has provided for "experiments in the manufacture of sugar from sorghum, beets and other sugar-producing plants".

In view of the experiments which have already been made at this department, I have determined to institute the following plan for the coming season, in obedience to the act referred to.

Provision has been made for continuing the chemical analyses of sorghum at the laboratory of the department, should this be deemed necessary, in order to add the information already obtained by investigations not only here but also in the Agricultural Colleges of this country.

On assuming the duties of my office in 1881, I found 135 acres of sorghum containing 52 varieties which had been planted in Washington for use of the department. On being informed that time had arrived for manufacturing sirup and sugar, I engaged the services of an expert in sugar making who had been highly recommended for the position of superintendent, and operations were commenced on September 26, at the mill erected by my predecessor, on the grounds. These operations were continued with slight interruptions until the latter part of October, at which time the supply of cane became exhausted.

Forty-two acres of the crop were overturned by frost before being sufficiently ripe for use, and this portion of the crop was so badly damaged as to be unfit for manufacture. The yield of cane per acre, on the 32 acres gathered was two-and-a-half tons; the number of gallons of sirup obtained was 2,977; and the number of pounds of sugar was 165. The expense of raising the cane was $6,328.45; and the expense of converting the cane into sirup and sugar was $1,657.59—an aggregate of $8,587.04.
UNDRRAINING.

Professor J. M. McBryde in Journal of American Agriculture.

Modern writers on undraining generally assume that the practice is of comparatively recent origin. Waring, in his work on draining, remarks: The effort (probably an unconscious one) to make the theories of modern undraining congenial to those advanced by our ancestors seems to have diverted attention from some more recently developed principles which are of much importance.

He then goes on to observe: Joseph Elkington, of Warwickshire, England, in 1665 discovered that tapping underground springs where the land was wet would relieve and improve the soil, and this, the Elkington school, may hence be considered the germ or beginning of the present practice of thorough drainage.

He admits, however, that catch-water drains, made so as to intercept a flow of water, have been in use from time immemorial, and are described by the earliest writers.

Now, without dwelling upon the passage wherein Virgil speaks of "drawing off from their nature" the collied waters, or the manner of a," I would ask what is to be thought of the following passage, written by Columella nearly 17 centuries before Elkington was born. In his chapter on soils, while treating of wet land, he observes:

"If it be wet, let the abundance of moisture be first dried up by ditches. Of these we are accustomed to dig and cover and open. In compact and calcareous soils they are left open; but where the ground is more porous, some of them are left open and some covered. The deeper parts of the latter may discharge into the former. It is necessary, however, to make the open ones wider at the top and sloping and contracted at the bottom, like the sides of amphorae, for those with perpendicular sides are soon damaged by water and filled up by the falling in of the sides. In addition to this the covered ones should be sunk through the clayey-soils and after being half filled with small stones and coarse gravel, should be made level with the surface by returning the earth thrown out in digging them. If not stones, then gravel, or a mixture of gravel and stones of twigs twisted together like a rope should be made of such thickness as to exactly fit and fill the bottom of the ditch.

This should be covered with the bottom eycress or pine branches, or any other kind if these cannot be obtained, pressed down above it and the soil thrown back over all, first placing at the head and mouth of the drain two large stones, one against each of the sides, and a single stone across these after the manner of a little bridge, in order to support the sides and prevent the water from flowing in and obstructing the ingress and egress of the water."

(In Lib. I, Cap. 57.)

Piiny, referring to different methods of preserving grain, and quoting from Varro, says: They could not be injured in a large ear, but they are best preserved in trenches which they call siros, as in Cappadocia and Thrace and also formerly in Spain and around Carthage. Their bottoms, he says, were covered with straw, and every precaution taken to prevent the access of moisture and air to the grain until it was brought out for use, for it was held that the weevil would not breed where the air was excluded. He adds that the wheat thus stored away kept 50 years and millet upward of 100. (Lib. I, Cap. 9. 15.)

Varro also mentions these siros and states that they were in use in Cappadocia and Thrace, and also formerly in Spain and around Carthage.

He mentions that Siros, to which the term siro was applied in several places in the ancient world for a storage vessel, was used in the ancient world to refer to storage vessels made of earthenware or similar materials, and were used to store grain and other commodities.

Paladius speaks of a modification of this process not altogether unworthy of the attention of the vine-dresser of to day:

The Greeks [he stated] assert that you can preserve the grapes on the vine even to the beginning of spring if you will dig near the plant, on the shady side, a ditch three feet deep and two feet wide, and fill in the bottom with gravel and straw and so on. You must cut the branches full of fruit among these seeds, binding together the uninjured branches so that the soil cannot touch them, and after filling up the trench with earth cover it over in order to keep out the rain.

EDUCATION FOR FARMERS.

To the average mind the word education is limited in its definition to what one learns at school, but that is altogether too narrow. Education means growth, culture, development, as well as the acquisition of knowledge and knowledge again is not monopolized by the schools; indeed, one who knows only what he learns at school is much more justly entitled to the epitaph of ignoramus than he who, having no opportunity to attend school, has been a diligent student of nature and of the ways of the farmers when they were invented, or schools established. Schools, good schools, are excellent auxiliaries to education, but they are nothing more. It is admitted by all that no amount of book-learning will suffice to fit a young man for the duties of a physician, a lawyer, or a clergyman, and the idea that it would fit him for the profession of agriculture is absurd. Yet each profession has its literature, which can be reached only through the portal of the school or the aid of private instructors, and the literature of each profession is of prime importance to those who would pursue successfully a profession.
The literature of a profession, farming, for example, conceives the wisdom of the past and records the experiments of the present. But the wisdom of the past preserved in books is like wheat before it is winnowed, mixed with the chaff of ignorance and the cheet of prejudice. So much is done by the mind, knowledge of the present. They are both misleading and injurious to him who accepts them without question. But they are great help to him whose mind has been trained to criticise all things, and who accepts only that which stands this crucial test. Colleges confer degrees, yet these are often misleading; the young man with A. M. or M. D. after his name is not necessarily a master of arts or of medicine. He is only prepared to enter upon a career of practical experiment, which, if he possesses the talent, the industry, and the perseverance necessary to the completion of his education, may ultimately make him worthy of the title conferred upon him prematurely by the school.

No amount of theoretical training will fit a man for the successful pursuit of agriculture; yet, without theoretical training, a man rarely rises to the dignity of an intelligent farmer. Farming is a profession in the same sense that the practice of law or of medicine is a profession; hence the youth who is destined to become a farmer should be educated with reference to that profession. The public schools of the country furnish the facilities for all the literary training absolutely necessary and, in the larger cities, the scientific branches are taught as well as they are in our colleges, and these are important. While it were a waste of time to study the dead languages, the prospective farmer should become familiar with the elements of natural history, botany, chemistry, geology, and natural philosophy. These branches of science have a direct relationship to his future business, and the young farmer who enters the profession versed in them will find that he is not only prepared for a larger measure of success, but that his mind is fitted for communion with nature. The secrets, hid from others are constantly revealed to him, affording an inexhaustible source of pleasure as well as profit. To him every expanding leaf or opening flower has a beauty, significance, and every phenomenon involved in the growth of plants has for him a meaning unknown to the ignorant poulter. All nature is to him one grand illustrated encyclopaedia filled with lessons of wisdom, from the pen and pencil of the original author and artist of the universe.

To the elevated farmer the rocks present their own history, written in unalterable characters by the finger of God. The soil whispers to him of its fertility or complaints of its poverty in language perfectly intelligible, and the treasures of Flora, Panona and Ceres, are shown, in rich abundance at the feet of him who wields the magic wand of intelligent labor.

SUCCESS IN FARMING.

Importance of Rotation and Clover and Grass Crops.

The necessary steps toward an improved husbandry are:

1. To cultivate less land.

2. To make that which is cultivated rich in plant food, so that it may produce large crops.

3. The practice of a rigid system of rotation of crops and mixed farming.

4. The cultivation of the grasses and less of the cereals, and the feeding upon the farm the most of its products.

5. Raising clover and enriching the land by turning under green crops.

I believe the practical practice of such a system of tilling would in ten years increase the value of real estate 100 per cent., and place the farming population in an independent position. All observation and experience go to show that those sections of the country are more prosperous where a mixed system of farming prevails. The farmer who finds in his own garner that which is needed to supply his daily wants is far removed from the vexation and toil attendant upon outside purchases, which so severely tax his means. It is not infrequently the case, when he produces but a single article for the market, that it commands a price which, but poorly compensates him for his labor, while he has to pay exorbitant prices for that which he is compelled to purchase. This is "selling the hide for a penny and buying back the tail for a shilling," which surely is not a profitable transaction. Mixed agricultural necessarily leads to a system of rotation of crops, which is the key to successful farming. That there is a vast recuperative power in the land where a succession of different crops are grown, no one can deny in the light of universal experience. Thousands of those who have hitherto devoted themselves to the production of a single production, such as cotton, tobacco or grain, now acknowledged this error.

Successive crops of the same character exhaust the land in the particular food they require with great rapidity. The aid which nature so freely renders, where crops rotate, is withheld in such a system of civilization, because the farmer is violating her laws. To fight against nature is to war at fearful odds, and it is not difficult to forest the result. To work in harmony with her insures a compensating and continuous prosperity. Each plant of her provisions is, that while one crop exhausts the soil of that element which enters most largely into its composition by the operation of some mysterious law, it prepares that soil for some other crop of a different character. This is a very curious and interesting process of nature, which results immensely to our advantage if we accept her aid. As an illustration of this principle, we know that clover does not successfully follow itself, although it leaves the ground in the best possible condition for corn or wheat. One crop, therefore, restores in a measure what another takes away. If by raising continuously the same plant you interfere with this beautiful contrivance of nature to rebuild her wasted strength. How this is done is imperfectly understood. We do know, however, that the deep rooted plants like clover, will pump from the depths below for the use of those that grow near the surface that food which has been carried beyond their reach. And not only that this element, when brought to the surface, acts chemically upon what it finds there, and renders soluble and available as plant food what before was inert and resisted assimilation.

Nature, therefore, will do much of our work for us if we only second her efforts and give full cope to her beneficial laws. It is, therefore, a question for the farmer to determine whether he will, by a rotation of crops, have this soil enriched by drafts on nature's treasury and draw entirely upon his own. I do not mean to argue that there is nothing for the farmer to do but follow this rotation to make his lands productive. Far from it. But I do argue that he may make nature a co-worker with him in attending a desirable end. Change is a prominent feature in nature's economy. Cut down the forest of hard wood and the pines succeed. Again, remove the pine and the hard wood reappears. One kind of grass succeeds another, and nature supplies the seed. These changes give the soil rest, to the end that the process of re-invention may go on.—John W. Fullerton in Nashville. ( Tenn.) Southern Industries.

THE DEPARTMENT OF AGRICULTURE.

Nothing is more remarkable in our history than the fact that the most important of our national interests should be entirely unrepresented at the national capital. Agriculture, which at all periods of our progress has been the most prominent of our productive powers in the creation and development of our natural resources and positive wealth, is wholly unrecognized as an element of national power, or as an object of legislative concern.

The army of 25,000 has a department to manage its minutest movements. It expends $40,000,000 annually. It produces nothing.

The navy, limited to 11,000, almost destitute of ships, a mere burlesque on efficiency, as compared with any European power—made up of officers, navy stations and foreign squadrons to do favorite commanders in foreign climes, expends $20,000,000 annually.

The post-office is an institution by itself: it is worthy of the Government, the people, and the age.

The State Department is what it is—venerable. In precedent, dogmatic in practice; slow, arbitrary, uninterested, ungovernable, and unanswerable. America has no department for its departments. If it were to drop out it would not be missed. It is the Rip Van Winkle element in our Government machinery.

The Interior Department is, after the Post-Office, the only real representative of the people. It is the source of titles for all our public lands; it issues all our patents; it controls, manages, and provides for our Indians; it distributes and settles our pension-rights; it regulates our mines and controls our railroad grants. Its duties are immense; they are performed with consummate ability, but red tape hangs from every window, gardains every aloof, and ties up in stupid uniformity of dullness every intellect not bold enough to say its soul is its own.

The Treasury is a marvel. More than $1,000,000 daily passes under its control. The care, precision, accuracy, and brilliancy of the management is equal to the grandest hopes of American supremacy. It is the treasure-house of the people. Its vaults to-day hold more coin than is treasured in any other government building in the world.

But agriculture, which creates the wealth managed by the Treasury, and without which
neither the army nor navy could exist, has no department at Washington. But the voice has gone forth demanding the establishment of a department for agriculture. There is no government in the world whose progress in agriculture development has been equal to ours. All the European governments have special departments for agricultural protection, improvement and encouragement. Agriculture is the bed-rock on which we build; it is the foundation of wealth; it gives us subsistence, and subsistence is life.

Twenty-eight million of our people are directly or indirectly dependent on the products of the farms. The value of our farms, according to the returns of 1870, 5,000,000,000; the value of all our foreign exports, $792,000,016 was agricultural. Last year we paid for $642,000,000 for foreign exports besides bringing $50,100,000 of European gold to enrich our people with farm products.

We have 10,357,861 horses, 8,182,562 mules, 938,970 working oxen, 12,413,569 milk cows, 22,448,590 other cattle, 35,191,656 sheep, and 74,880,501 swine, making an aggregate of farm stock worth $1,500,503,807. Belched the two hundred and fifty cent dam cumulated. And yet we are but in the dawn of our achievements. We have the broadest fields, the finest climates, the grandest resources, and the most limitless opportunities to become the most independent, the best supplied, and by all means the most thoroughly educated agriculturists of the globe. The last two weeks have developed the national interest in agricultural advancement in a manner worthy of Congress, worthy of the people, and worthy of the country. Le Fevre and Updegraff, of Ohio; Grant, of Vermont; Lacy, of Michigan; Mr. Morey, of Ohio; Mr. Dwight, of New York; Mr. Scales, of North Carolina; Mr. Weeks, of New Hampshire, and others, have discussed the question of an agricultural department, with an earnestness and ability deserving of its importance.

The fact that during the year ending June 31, 1851, we imported into the United States $285,081,068 in agricultural products is sufficient evidence that we have yet much to learn in the way of adapting our infinite variety of soils and climates to the production of prime articles of necessity we are capable of producing, for which we are yet paying tribute to other lands. It has been well said that "the application of machinery, steam, and mechanical contrivances, has revolutionized the world." It has been well said that the "application of machinery, steam, and mechanical contrivances, has revolutionized the world." But the犁 axe, the hoe, the kitchen, the plow, and the box of meal have not been improved, and are as necessary and dear in the family of the poor man as in the great cities of the earth.


the science of production equal to the opportunities our unequalled country affords. As Mr. Updegraff truly says, no country on earth has an agricultural interest comparable with ours. "It is confessedly the largest interest in the nation," and yet is without a department to enlarge, enlighten, protect, and increase its benificece. Our grain crop in 1880, was 2,979,362,465 bushels. The grain crop of California for ten years is shown to have been of the value of $313,231,046, or nearly double the gold and silver taken from its mines, which amounted to $180,406,288 for the same period. A single attested fact is enough to demonstrate the importance of Governmental encouragement of agriculture. The best modes of cultivation. The seeds distributed by the Government in 1875, increased the yield nearly 50 per cent. wherever they were tested. In Prussia, Austria, Italy, Spain, Russia, France, and Brazil, the Agricultural Departments of the Government are regarded as of the first importance.

"The farmers are the tax-payers," and, as Jefferson says, "the revenue is the State." And, as Mr. Updegraff truly says, "when our great financial fabrics went down, burying fortunes and enterprise in their ruins when commerce was stagnant, when our manufactories were overwhelmed and pulseless, then the Government, as a public duty, "Recently the government of our country displayed its full meausures ability to bring back prosperity and to fortify the nation's credit with the bounty of the nations surest wealth."

There is every reason why we should have an Agricultural Department worthy of the nation; there is not one why we should not.

FANCY BUTTER.

For fancy butter, says Dr. Heath, the first requisite is the perfect cow. The Guernsey and Jersey cows are undoubtedly the first choice for making high-priced butter. But by the due of these cures, the Delaware, Holstein, grades or common cows are not excluded, for any and all of them, with the proper requisites, may be made to produce fine butter.

Pasture and food are also essentials elements in the production of fancy butter.—Weeds, sour grass, nor coarse swamp twits, will fill the pasture requirements. Well kept old pastures, containing blue grass, meadow fescue, sweet-scented vernal, orchard grass, red and white clover, timothy, red-top and wire grass as the prevailing forage plants, together with the sweet grasses, which naturally carpet the mature and well-kept pastures, are the prime necessity for the stock of fancy. They are all to be applied to lessen soil and increase production. Every wheel, every lever, every physical appliance that releases a human muscle wakes up the brain and gives it a chance. The farm-house of to-day is a palace in comparison to what it was in 1830, light has illumined it, machinery has elevated and refined it; the school-room and the newspaper have made it a house of intelligent comfort. The tiller of the soil is sovereign over nature, just in proportion as he is educated to comprehend it, and why should not the Government of the United States devote itself to all the appliances, concentrated ability and intensified means can bring together in departmental instruction to make the cow a quiet, easy-going, luxurious living animal, manufacturing her best products under the most favorable circumstances and only from the best materials. The milking must be regularly performed, and absolute cleanliness is a necessity with the cow; her food, her care, her milk, with the cream, the butter and the atmosphere of the cow, must be pure and sweet. The temperature must be proper, from the pasture to the butter package.

Cool, sandy pastures are most desirable. No cow ever manufactured her best products at 90 degrees Fahrenheit. The milk should be 95 degrees as near as possible summer and winter, either by means of flowing water or the never varying temperature of the air vault.

The cream, when set for butter, should be frequently stirred to prevent irregular scoriing, or more important, the formation of dried casein on the surface, which flecks and embitters the butter.—Rural World.

ALL ABOUT POULTRY.

In whitewashing a henney put some kero sene into the mixture, for the benefit of the hen lice.

The time is coming when eggs will be sold by weight. It is the only fair way. Massachusetts has already a law to that effect. No hen should be scalded after baking, or painted with kerosene in order to kill lice. This sort of vermin is the worst pest of the henney.

A hen that is very quiet for the first two or three days after hatching is better than a fussy or gadding one. She knows that chicks of that age can't travel much.

A flock of fowls that are frequently chased by dogs or often frightened by the owner, can not be expected to return heavy dividends in eggs. They want quiet, and constant anxiety for their lives does not conduce to natural development.

If a young chicken picks a hole within the shell at hatching the access of air is apt to dry its down to the shell, and then it fails to turn over, and must be helped out. This is always a bad sign. A little warm water on the shell then may be of service.

Hens need to be in good order and sound health before they begin incubation, and given plenty of good food while continuing in it. A sitting hen's "sedentary habits" are poorly calculated to promote an increase of flesh. Always give her access to food, water and the dust bath.

If given hens will eat potato bugs, and make a business of it, get a few, or many, according to your needs. One guinea screecher to each half acre of potatoes is hinted at as the proper average.

Give fowls as much liberty as is compatible with a general good of the farm. Restrain is in opposition to nature, and tends to bad and dangerous habits. But when restraint is necessary, see to it that they have as many comforts as is possible in confinement, or you will suffer from it.

When hens do not sit on the ground their eggs should always be lightly sprinkled with tepid water every day or two after the first week or ten days. This is a matter real importance, and if attended to will prevent a

THE LANCASTER FARMER.

[July,}
good many disappointments, because many
chicks will otherwise die in the shell.
Plant sunflowers now. The seeds are just
as good for poultry as ever, but you can also
wear the delicate flower in your butterbowl if
you are a woman. With asthethia, or may, perhaps, sell
them to some esthete sob or snob. Plant
sunflowers, we say. The flour or meal is also
good for feeding cows.
For ducks, if there is no good stream or
pond at hand, a big extemporized basin, if
not more than a mud hole, will do. But while
they will not scratch much in the flower-beds
or gardens, they are worse nuisances among
flowers or vegetables than chickens, and their
feet are anything but favorable to grass pro-
duction.
When a chicken has to be assisted out of its
shell it is a nice point to do it at just the right
time. The food for the first day is derived
from the yolk absorbed, and some should be
left in the shell. On the other hand, too long
a delay is equally bad. Chickens that bleed
when assisted out will generally die, but not
always. It is a sign that they are not quite
"ripe."
A separate room for setting hens where they
can have food and water at will, and
bathe in ashes or dust, is perhaps the most
convenient way to manage them where quite
a number are hatching at once. If an out-
door run can be provided in which they can
get grass, it is still better. But as some hens
don't know enough to always go back to their
own nests, they need a good deal of superin-
tendence when a dozen or two are quartered
in one room.
Pure breeds are more readily satisfactory to
most poultry raisers than all sorts of odds
and ends; still, if well cared for, the differ-
ence is not so very important. When a
farmer desires frequently to draw upon his
poultry for a meal he don't want an entire
flock of "eternally layers," which are usually
small and wild, and not much to boast of as
quality. The Brahmas, Plymouth Rocks or
Cochins are better, and will furnish a good
supply of eggs without running all over the
farm or neighborhood.
H. P. Clarke, of Indiana, makes a recom-
mandation in the Germantown Telegraph
about breaking up a broody hen, that may
have sense in it. It is to shut her up in a box
with a raised bottom of narrow strips or
laths, so that when she sits her breast is con-
stantly exposed to cool air. If one side of
the box is elevated so that it does not stand
exactly level, it might add to her dissatis-
action. But after all, close confinement with
plenty of air is not the same as a cool
harmony, as a social roaster, is probably as good way as any.
It is as to see men, assuming to be teachers
of farmers, to say that poultry "will pre-
serve plum trees against the ravages of the
curculio." The curculio is a winged insect,
with no occasion to visit the ground, and
fowls cannot catch it if they would, and will
rarely eat them when offered—at least, not
when dead, for we have seen it tried. How
is a clumsy hen to catch a curculio that lights
on a plum eight or ten feet above her head.
and the plum at the end of a long limb, per-
haps? The statement is as absurd as that
bottles of sweetened water will keep the in-
sert away.

Talks About Fruit.
Plenty of soil stirring will always be a par-
tial substitute for manure in fruit growing.
It is better than piles of manure with no cul-
ture. That means weeds, and weeds mean
rain.
The cold weather in April destroyed a good
deal of the grape blossoms in the vicinity of
Nashville, Tenn. Peaches there, as else-
where, promise the best on high land.
Coal oil will kill any insect it touches, and
hence, as it is easily applied to the trunks
of young trees some fruit-growers are tempted
to use it in this way. But they had better
not. It will kill the tree also if heavily ap-
pied. Better experiment with it first on
some tree of little value before applying to a
good tree.
It was stated that if half a pound of am-
monia and the same of nitre be put into a
loghead of rain-water, it makes an excellent
fertilizer for strawberries. Very likely; but
the rain-water itself, applied to strawberries
during a dry period, will be excellent, and no
doubt did much of the good which has been
referred to this experiment. There is little
reason to believe that infinitesimal doses of
costly fertilizers are to produce extraordinary
results.
Judge Edmund H. Bennett, writing on the
legal rights of farmers, says: "That when a
fruit tree stands exactly in the line of two
properties it belongs jointly to both owners;
but if it merely stands near the line, but
overhangs in part the next owner's land, the
latter has no legal claim to the fruit, nor any
right to destroy its limbs. The common
impression that any man is entitled to the fruit
which drops upon or overlaps his land, he
says is incorrect.
Tree fruits are often scraped, not specially
to make them look well, but to prevent insect
eenemies from having a hiding place under the
shades of the bark which accumulate. Scrape
the trunk in some way as so not to injure the
living bark, then wash it with whale oil soap.
Then you have a tree that looks as good as one
that looks as bad as "as nice as can be." Ap-
tle and pear trees are the ones most in need
of this sort of care.
Some writers recommend fruit growing for
women as "a light, pleasant and profitable
occupation." Parts of the business are light
and pleasant; but when a woman attempts to
manage all departments of it—planting, ma-
nuring, hand and horse culture, picking,
packing, loading, marketing, handling crates,
etc., etc., it will be found that a good deal of
the work is anything but "light." But
women can greatly assist in fruit growing,
and this is where their age and sex is most
needed. The woman can also be managers, but
men must aid in the heavy work.

Our Local Organizations.
LANCASTER COUNTY AGRICUL-
TURAL AND HORTICULTURAL
SOCIETY.
The July meeting of the Agricultural Society
was held on Monday afternoon, July 3d, and was
attended by the following named persons:
Levi S. Reis, Oregon; Henry Kurtz, Mt. Joy;
F. S. Director, etc.; W. S. Greist, etc.; Joseph
F. W. Hibner, Paradise; John H. Lula, Millersville;
M. D. Kentzil, Cornwall; C. L. Humecker, Mainland
H. M. Johnson, etc.; J. L. Landis, etc.; Peter
S. Reis, etc.; W. E. Paxson, Colebrook.
In the absence of the secretary and his minutes,
M. Kentzil was temporarily elected to the seat of
the former, and the latter were not read. What
the questions for discussion were only the minutes
knew, and consequently the meeting was much
shortened.
Crop Reports.
Henry Kurtz said that around Mount Joy the
wheat is very promising, and he expects forty bush-
ches per acre; grass pretty good, and sells from $15
to $25 per ton; soon tobacco is looking good and
some not yet planted; the cutworm is unusually
plenty; oats and corn look well.
In Levi Reis's section wheat is better than for
years; apples and dropping off, through the York
imperial and Baldwin are hanging well; tobacco
Mr. Reis never saw so lovely, corn is much too
early to promise. In regard to cherries it is very
curious that in some spots they hang plenty while in
others, not a quarter of mile distance, the limbs
are bare.
C. L. Hunecker said that Lancaster county
never had a better wheat promise; oats has not looked
better for years; corn crop will probably be
immense; tobacco may yet equal former crops in this
county; potatoes, there will be enough of and some
to spare. Prospects are very good all along the
Buck.
John H. Landis reported that the rankness of
the Manor wheat has disappeared and it now looks
as fine as ever was seen there or elsewhere; hay full
crop; oats fine; tobacco is being cut in spots all
over the township, apples will not be so plenty as
indicated four weeks ago; the peach crop will be
tolerably good in quality, though lacking in quan-
tity; no cherries.
Mr. Paxson, of Coleburn, said that in his county
there never were better prospects for a wheat crop;
hay long and well set; corn healthy but hay backward;
oats rather poor; no peaches, not so much as five
bushels in the township; of cherries there are none;
these who set tobacco early did well, but cut
worms and drought are doing damage.
President Witmer gave a promising report for
Paradise, with the exception of tobacco. One
gentleman says he has lost 9,000 out of 12,000 plants.
Shall We Have a Fair? No.
Henry Kurtz brought up the well worn fair
question. Some of his neighbors were taking an interest
in the matter, and they wanted to know whether
there was any change of place, and Mr. Kurtz himself
gives consent, yet the ominous quiet which followed Mr. Kurtz's remarks showed
plainly that those present had no desire to undertake
the getting up of a fair, and the president then sug-
gested the impracticability of action on this question when so few were present.
The Immigration Question.
C. L. Hunecker proposed that as the society was
doing nothing, it discuss the immigration question
including the Chinese, Dutch, Irish, and everybody
else. Mr. Hunecker pictured the poverty-stricken
arrival of the Chinese, and said Colerain town and
thought it but right and humane that this country
with all its unsettled lands should extend a helping
hand to suffering humanity. This business the the programme for the meeting
was continued until the August meeting.
Grain and Fruit Exhibited.
Henry Kurtz displayed some stalks of Fritz wheat
raised on the Kurtz farm near Mount Joy. They
were five feet eight inches long and were a fair
sample. Mr. Kurtz declared, of the whole of his
forty-two acres of wheat.
Mr. Reis exhibited varieties of cherries—the Little Britain, fine large black juicy ones; a seedling
somewhat similar in appearance; and Molkenhinke, small red and sweet—and some sharpless strawber-
ries of fine flavor.
Poultry Association.
The Lancaster County Poultry Association met
in the agricultural room of city hall, on Monday,
July 3rd, 1892.
The following named members were present:
Agriculture.

Green Crops.

Green crops for manuring should not be plowed deeper than four inches; if they are turned under more than this they will not receive enough of solar heat to develop and enrich the soil. When covered too deep their beneficial effect cannot be realized till the next plowing, when they are brought nearer the surface.

Loading Hay.

To properly dispose of the hay as it is pitched upon the wagon requires considerable skill. Long, wide and low loads are much better than the opposite, for both the pitcher and the loader; besides, there is much less danger of the load slipping off, or being dislodged at the edge of the wagon, and there is less chance of the horse getting his head through the pile of hay, and the method is much easier to work.

Manure Under Cover.

Of course all the advantage of making manure in covered yards may be secured by box feeding, with less outlay for roofing, since more space must be allowed for a given number of animals turned loose together, as the method here described makes a better protection from rain and sun, the abundant use of litter and its thorough incorporation with the excreta, and the exclusion of air by compact treading, which go to make the superior manure. All these features of the method work against the loss of valuable plant food, nor does box feeding and constant accumulation of manure under the feet of the animals necessarily imply offensive stalls.

One method or the other, box-feeding or covered yards, should be adopted by every farmer who lives within the limits of the bird-strike area, and who, of himself, will not go so far as to substitute universally for wholesome manures, rise and twenty-one thousand pounds of water. It is ground fine and thus applied to land or crops. When it is applied to redness the water is driven off and the residue is easily reduced to a very fine powder, and is known as the plaster of Paris, or, by the old commercial name, gypsum. The beneficial action of land plaster on crops has long been, and still is, a subject of dispute. That it supplies lime and sulphuric acid to plants to some extent is probably true, but is now generally admitted, we believe, that gypsum is chiefly useful because in reducing it the plant absorbs carbonic acid and gives off oxygen, and thereby increases the power of the soil to hold and condense carbonic acid from the atmosphere.

Plaster.

Land plaster, or gypsum, is sulphate of lime. One hundred pounds of generic gypsum consist of forty-one pounds of lime and forty-nine pounds of water, and amounts to slightly more than three per cent of sulphuric acid. One hundred pounds of superfine or学术石膏 consists of thirty-four pounds of lime and twenty-one pounds of water. It is ground fine and thus applied to land or crops. When it is applied to redness the water is driven off and the residue is easily reduced to a very fine powder, and is known as the plaster of Paris, or, by the old commercial name, gypsum. The beneficial action of land plaster on crops has long been, and still is, a subject of dispute. That it supplies lime and sulphuric acid to plants to some extent is probably true, but is now generally admitted, we believe, that gypsum is chiefly useful because in reducing it the plant absorbs carbonic acid and gives off oxygen, and thereby increases the power of the soil to hold and condense carbonic acid from the atmosphere.
Horticultural Tuteur

Summer Grape Pruning

About this, as in nearly every other horticultural subject, there is considerable difference of opinion. We have known vines to be "pruned to death" in following out some wild theory that some ablooming headed-fif's had started, while others would prune so sparingly as to be of no benefit at all. Many strip the vines as soon as blossoms are over, to save the sun and air to get in, as they say, while others allow the grapes to be smothered for want of judicious removal of the leaves. Pinching the ends off the vines, or clipping off a portion of the spouts where they are growing rapidly, so far as it appears to be necessary to any reasonable judgment, will greatly benefit the crop, just as the reverse will damage it.

The thinning out of the surplus bunches, by removing from a third to a half of them as they usually show themselves, is of the greatest importance. In holding the bunches in a tight mass, the berries will be most imperfect. The laterals of the fruit bearing branches, which have been pruned or clipped, will throw out more branches, and these also should be pruned, so as to leave only a single leaf. The laterals on the canes, remaining, are most important in bearing fruit the following year, and should be allowed to grow unchecked. Care must be taken to tie up such of the branches containing bunches which are too heavy to bear its own weight. There should, also, be no more wood allowed to grow than is needed for these purposes. The most general hints may be of service to those whose knowledge of grape-growing is limited. In a little while—a few years of experience, which may be aided by examining the way that good grape-growers follow—will soon put one in the plain road to success.

German Telegraph.

The Care and Pruning of Peach Trees

It is a rare thing to find an orchard that has been kept properly pruned and cut back, and most of them are much in need of it. All branches baring any fruit or foliage, except such as are crowded closely together at their extreme tips, resulting in overcrowded leaves and fruit, and poorly-colored, late ripening and small fruit, with a tendency to rot from overcrowding and shade.

The most fruitful of all our results, we think, should have a clean stem about three feet. At this point a regular whorl of four or five branches should be started. When these are started, the tree should have vigor enough to give each a growth of five feet, so that by next year the first sprout may be used, and the next spring, should be cut back to eighteen inches, being careful to leave on them any sub-branches near their base. The next spring the resulting or next crop of branches should be cut back in about the same way, and the sub-branches half of them cut clear, leaving every one other, and those not cut away cut back one-third to one-half. The summer after this the trees should give a splendid crop of fine fruit that will need no thinning. The after-cutting back and pruning should be after the same general plan, thinning out the smaller branches and removing back and away from the big ones. The farmer should never throw out the small branches, except as above. As the trees grow older it will be necessary to cut back and thin out more year by year, and eventually it will be necessary to cut back half of the main branches to near their base, at some point just above where a thrifty young twig is growing, so as to form a new, vigorous head, and to cut back the remaining branches the next year, and then follow again the same system of training given above. We think that this system, carefully followed, will give continuous crops of fine fruit, with but little or no thinning; or, in other words, that by this renewal system of training trees can be kept in a young, vigorous condition for a great many years. Who can find fault with it? Who will give us a better system? Our preference would be to have our trees with lower heads, rather than higher, and a more vigorous growth carried up in the orchard. On strong soil trees might do well with four feet of bare trunk—Prattie Farmer.

The Delaware Peach Crop

In view of the certainty that announcement will be duly made in the early spring of the melancholy fact that the Delaware peach crop was almost totally destroyed by the terrible cold weather in January, it is interesting to note the following paragraph in The Wilmington Evening Journal of last night, in which the paper expresses its belief with promise to the fruit growers of the peninsula.

Their great dread of short crops has always been open mild winters, which forced on the buds prematurely only to be killed by the more severe winter. This year, however, with the established good authority on peach growing, has maintained that healthy peach trees could stand a temperature of five degrees below zero, depending somewhat upon the forwardness of the buds when the frost occurs. Assuming this to be correct, the crop of peaches from our is still uncertain, and three degrees below zero in some of the most exposed points around Wilmington, which is the entering door of the great peach grounds of the peninsula south of us. So far, therefore, as the present season has developed, the indications are favorable to next spring’s agricultural operations.

Strawberry Beds

A writer in the New York Tribune says: "The time for seeing to the security of next year's strawberry stands is immediately on hand. The peat and the peat of the past year. Dig, plough or deeply between the rows or in lines through the mass, and clear the hills or rows left of every weed, however small. Some add to this severe-looking treatment that of mowing the whole field, and they declare that the plant gets its summer's growth on the second cut, necessary completely for it, starting when with the August rains into a luxuriant. September growth which is the making of the fruit beds for next year's expansion.

Quince Culture

Almost every good housekeeper who has a garden wishes there were quinces in it. No fruit seems more desirable in the kitchen, but it is seldom that it is seen there. They are planted in the garden time and again, but seldom seem to do much good. They just live, grow but little, and, that may flower freely, the young fruit drops prematurely, and a bush of a dozen years will often not give a dozen sound fruit.

Quinces are said to thrive best on dry land, but the trouble is in the soil, that it is very peculiar and particular in this respect, but we think this is an error. Certainly we have now and then seen quince trees doing well in all sorts of soil and in all sorts of situations. It is more than probable that much of failure comes from injudicious care by the borer, which sap the strength of the whole tree. The borer enters the stem at or near the ground, and boring into it cuts off a large portion of its supplies. Some trees, like the apple and plum, when attacked by the borer soon die, but the quince seems to be able to live and prosper as a result of getting from every part of its bark that it is past. The disease is very badly attacked, it will manage to live on in a lingering sort of way for a good many years without any but a practical eye suspecting; what the real matter is.

But sometimes the question is what gardens call the quince a hard scrubby look, and the growth is puny and not at all what we expect to see on a healthy tree. Whether this hard bound condition is the result of some disease, or is a diseased state, it is not clear; but it is removed tolerably well by scraping and washing the stem with soap and water, and in this manner the quince is usually saved.

This course seems to lead to a vigorous growth, after which the bark seems to expand as naturally as any one can desire.

It is frequently recommended in the newspapers that the borer be left alone in quince, and perhaps in some cases it may do good. The quince does not send its roots far away, but has an immense number in a small compass. It will therefore require good feeding to a greater extent than
those trees which can send their roots long distances in search of feed. Salt is a great promoter of moisture, and as these numerous roots will make the earth about them very dry it may be beneficial in this respect. But any good measure will benefit the vines, and it should have plenty of it.

HOUSEHOLD RECIPES.

Deep Apple Pie.—To make plain pastry mix together lightly a quarter of a pound of lard or butter, a teaspoonful of saffron, a pound of flour, and sufficient cold water to make a paste stiff enough to roll out. On board of pastry is to put these ingredients in a chopping-tray, and chop them together with a large knife; another is to make a paste, stiff enough to roll, of the flour, salt, and water, roll it half an inch thick, spread quarter of the shortening over it, fold it and roll it out again, and use another quarter of the shortening, repeating this process until all is used; the pastry is then ready for the making of pies.

For a deep apple pie, pare and slice tart apples enough to fill a deep earthen baking dish heaping full; line the edges of the dish with down a strip of pastry; put in the apples, sweeten them to taste, and flavor the pie with a little grated lemon rind or a little ground cinnamon; cover the top with pastry wet at the edges with cold water to make it adhere to the strips on the side of the dish; cut small holes in the top crust, brush it over with beaten egg or with a little sugar dissolved in water, and bake it until the apples are done in a moderate oven. For a test for the proper heat of the oven refer to the recipe for Home made Bread.

Pancakes.—Wash a quart of dried apples, soak them overnight in cold water, stew them soft in the same water with sugar and spice to make them palatable; mix the sauce thus made into an earthen baking dish with a teaspoonful of butter, and cover it with pastry made as directed in the recipe for Deep Apple Pie; bake the dooryard until the crust is done; then remove it from the oven, and break the crust down into the apple with a spoon; when hot or cold, Apple Pudding made from green or ripe apples can be used in the same way.

Fried Apples.—Pare sound apples, slice them half an inch thick, remove the cores without breaking the slices, fry them in hot butter until tender, lay them in a little slie with sugar and spice dusted over them, and they will be fit to serve as a dish of apples.

Apple Tarts.—Pare and core tart apples without breaking them; put them on slices of stale bread, fill them with sugar, put a little butter and spice on each one, and bake them tender in a moderate oven.

Apple and Bread Pudding.—Soak a quart of stale bread in cold water five minutes; pour off as much water as will escape without squeezing, and put the bread in a clean hot baking dish; pour a slice of sauntered apples, lay them on the bread, add sugar and spice to taste, and bake the pudding in a moderate oven.

Racket Clove Pudding.—Buttered slices of stale bread, one tablespoonful of molasses, a teaspoonful of clove, and a pound of a baking dish: put a layer of raisins on the bread; add another layer of bread, pour over it a custard made of four eggs beaten with four tablespoonsful of sugar and a pint of milk; pare, quarter and core a quart of apples, lay them on the pudding, dust them with melted butter and sugar, and bake the pudding half an hour in a moderate oven. Serve hot mixed with powdered sugar or jelly sauce.

Jelly Pudding.—Mix together one teaspoonful of corn starch or arrow root, one tablespoonful of Jelly, four of sugar, and a pint of cold water; put them in a clear, sherry saucepan, and stir it until it boils one minute; then use it.

Cheese Crusts.—Cut some slices of stale bread two inches square and half an inch thick, butter them, lay them on a baking-pan, put one tablespoonful of grated cheese on each, and brown them in a quick oven; the crust is done when it will stick to a piece of wood.

Pumpkin Pie.—Peel and slice a pumpkin, or part of one, boil it in boiling water until it is tender enough to rub through a sieve with a potato-masher; mix with each quart a custard made of six eggs beaten with eight tablespoonfuls of sugar and a quart of milk; flavor the mixture with spice and grated lemon rind, and bake it in deep earthen plates lined with plain pastry. Square pie is made in the same way.

Plain Mince Pie.—Chop fine half a pound of boiled beef or cold boiled tongue; remove the fibre from half a pound of suet and chop that fine; stone half a pound of raisins, cutting them in halves; pick over and wash half a pound of currants; slice thin a pound of apples; chop these and the beef together; add two or three teaspoonfuls of spice, sugar, and salt; grate the rind and squeeze the juice of an orange and a lemon, if they are available; mix all these ingredients in a glass or earthen jar with enough sweet cider to moisten them, sufficient sugar to sweeten them palatable, salt enough to be just right; the mince is now ready to be put into a buttered deep pie dish, with all add quarter of a pint of good brandy for the purpose of preserving the mince-meat. Pack it down tight in the jar, and keep it closely covered two or three weeks before using it. When brandy is not used the mince-meat should not be kept long. In making pastry for mince pies use half to three-quarters of a pound of shortening to a pound of flour. If mince-meat has become dry by long keeping, moisten it with elder before using it.

Welsh Rare-Bit.—Stir together in a saucenpan over the fire one or two pounds of butter, a quarter of a teaspoonful of salt, a pound of mince meat, with a dust of cayenne, pour one on a large slice of buttered toast and serve at once.

Omelette.—Break three eggs and beat for one minute with half a spoonful of salt and a fourth as much pepper; have your pan hot, with a tablespoonful of butter; pour in the eggs, scatter over them three crumbs of bread, put them in with a fork and stir the sauce cooled sufficiently the omelette toward one side of the pan by slipping a fork under one side and turning it over. Place the omelette on a hot dish and serve at once.

Chicken and Green Peas.—Cut cold roast or boiled chicken into small pieces; put them in butter, stir in a tablespoonful of flour, and add to it one pint of stock, add one pint of stewed peas with their liquor, or one can if green peas are not in season, and salt and pepper, heat five minutes, and serve on toast.

Bean Soup.—Pick over one pint of dried beans, wash them in cold water; peel and slice an onion, put them in a stew pan with a tablespoonful of drippings; braise or bacon fat preferable. When brown, put the beans in with the onion pour on three quarts of cold water, and boil slowly; every fifteen minutes add one cup of cold water until a quart has been used; mix one tablespoonful each of flour and butter into one cup of milk, and when the sauce is thickened enough to lift it with a spoon, pour it into the bean soup, stir it well, and serve the soup hot.

Coconut.—Parboil four or five heads of cabbage or a head of lettuce, and put them in hot water; when quite tender, take them out, drain them, and remove the outer leaves; dice them very small; put them in a stew pan with a tablespoonful of sugar, a tablespoonful of salt, and a stick of butter; when done, thicken it with a flour and water mixture; put it into a saucepan, cover it with brown sauce; wash the meat, and add water enough to cover it; when it boils, put in salt, pepper and a half, and let it simmer an hour and a half. In making this dish it is to be remembered that a quart of water is to be used to a pound of meat. It is to be remembered that when made so quickly that the moisture of the bread remains in it.

Wine Jelly.—Dissolve one ounce of gelatine or gelatin in a half pint of hot water; add one ounce of sugar and one pint of wine, and cool the jelly in a mold.

Ballet Water.—Wash two pears of pearl barley in plenty of cold water until the water is clear; put it over the fire with half a pint of water, let it slowly approach the boiling point, and boil five minutes; then strain it, put it again over the fire in two quarts of cold water, and boil it until the water is reduced to one-half; then strain and cool it; it may be sweetened or salted, and, if desirable, according to the physician’s direction.

Egg and Wine.—Beat one egg to a froth with two teaspoonfuls of wine and use and atom.

Milk Punch.—For hot punch mix together quarter of a glass of brandy, rum or whisky, with three-quarters of a glass of hot milk; add sugar and nutmeg to the milk and punch prepared. For cold punch use the same proportion of liquor, but fill the glass with shaved or finely-cracked ice, with spice and sugar to taste.

Live Stock.

Spooling a Young Horse.

When a young horse acts badly in harness, it is because he has not been properly taught his business. To whip and misuse him is to spoil him. A horse is willing to do all right in his place, but may be made by kindness, patience and judgment in removing the ill effects of wrong treatment. A colt should be trained when young, and gradually taught his duties, the greatest care should be taken to avoid forcing him, or driving him to the animal, and much patience should be exercised. If the animal refuses to do what is required, punishment will make matters worse, something should be done to distract its attention when it will generally become docile.

American Agriculturist.

The Pig in Agriculture.

The pig has been recently spoken of in contempt when compared with our other domestic animals. But if we examine his good qualities at all critically we must award him a high place in our agriculture. He is found to produce a pound of product from less food than either cattle or sheep, and is, therefore, the most economical machine to manufacture our great corn crop into marketable meat. Our people are becoming wiser every year, and exporting less, proportionately, of the raw material and more of condensed product. If it takes seven pounds of corn on the
average to make a pound of pork, as is no doubt the case, the farmer begins to see the economy of exporting one pound of pork, bacon or ham, instead of seven pounds of corn. The difference in cost of freight makes a fine profit of itself; besides, the pound of meat is worth from seven to ten cents, or far more, than seven pounds of corn in the foreign market. The production of pork should be encouraged on the further consideration that it carries off less of the valuable constituents of the soil than beef. The fat pig contains but little more fat than the lean hog, when killed. and from this a deal of the pork is derived.

One thing we regard as imperatively demanded for success in the management of stock. Never allow a cow to be kicked or in any way abused by hired help. Whatever good qualities a man may have, better part with him at once if found disobeying orders in this respect. There is no more painful at the time of birthing, and make as a condition the forfeiture of a part or the whole of the man's wages who is found guilty of kicking or beating cows. The practice has become common and should be broken. A man should be made to feel that his milk cow must be treated kindly, and that no excuse can be taken for blows and kicks, and that no person would be employed who maltreats stock, the whole country would be greatly benefited. We have known of farmers who has been put to the stock he cannot expect the men in his employ to do otherwise. The business of the year is about to commence, and the start should be made with sound, healthy and vigorous stock, and from such, reasonable results may be anticipated. —Western Rural.

POULTRY.

Floors for Poultry Houses

Experience has proved board floors for poultry houses to be injurious to the fowls. No amount of cleaning can keep them free from vermin and bad odors. Clean, dry earth is the proper flooring for hen houses. It should have an under strata of solid, packed earth. This should be scraped at least once a year and air dried and mixed with wall straw mixed with air-dried slake.

Fowl Fattening

The greatest curiosity in the Jardin d'Acclimatation is the singular fowl fattening machine which has been in operation for but a short time, but which is a great success—reminds a lady, writing from Paris. It is put to the test in a closed room. Each section, with a partition between each section and a board in front of with a half moon shaped aperture in it. In each of these sections an unhappy duck or chicken is confined by a chain to each leg, and under each is a tray, which receives the dirt and feathers. The centre of the machine goes a round path, and there is a series of such treasure tops to the roof of the building, each with its divisions and imprisonments. At stated intervals a man comes around with a somewhat complicated machine, filled with a kind of this meal, and fitted with a pipe at the end of a long India-rubber tube. He introduces this pipe down the throat of a duck, presses down a pedal with his foot, and a certain quantity of food is forced into the creature's crag, a disc above showing exactly what amount of force he is to use, and how much the next meal shall be. This process has been, as the result has been, uniform and without success. After a lapse of several hours the cow is allowed to drink as usual. It is perhaps unnecessary to say that at stock this at the season of the year should be entrusted to careful hands—they demand almost constant oversight and attention. They should not be hurried in or out of the stables, or allowed to fight or scrape in the trample and dirt. Accustomed, of course, will occasionally occur, under the most careful treatment, but by the adoption of a uniform system of kindness to all neat stock, with a reasonable share of attention, there need be little, if any, difficulty.
best express its size by stating that it is a 12 by 15
demi folio, of 38 pages, including the covers, and
has been sold recently at $4.165, a price which is
the subject of this notice, the silk prooeneurs of
our country will be provided with a solid staff that
will bear them on to a successful issue. Although
we do not expect to live long enough to see its crowning
success, we hope it may realize expectations.

Home and Science Gossip.—A sixteen-
page royal quarto, published monthly, at Rockford,
Ill., at $1.00 per annum, by Andruk Blingworth.
No. 6, vol. 6 (June, 1852), has been laid on our table
and is a specially interesting and instructive number
for its comprehensive treatment of general
literature, in their most utilitarian
application. Printed in fair type, on tinted paper
and worthy the patronage of an intelligent public.

The Iron Hall.—"One thousand dollars in seven
years." A demi-folio monthly, devoted to the
interests of a secret beneficial organization, called
"The Order of the Iron Hall," Indiana, Indiana,
May 15, 1885, vol. 1, No. 1. The details of this
publication is very similar to those given in our June
number, noticing the "Boner of Chosen Friends,"
which need not be repeated here. If any of our
readers desire to increase their knowledge of this
organization they had better send for a representative number.

Progress, published by the State Sunday School
Committee, Boston, Massachusetts, at twenty-five
cents per annum, monthly. This is a demi-folio of
eight pages, and contains a large amount of practical
matter on the organization and conduct of Sunday
schools.

The Sideral Messenger.—A monthly review
of astronomy, in ten numbers annually, at $2.00,
and is the only periodical in the United States
devoid of all popular astronomy, conducted by Wm.
H. West, at the University College Observatory,
Northfield, Massachusetts. No. 4, vol. 1, of this
splendidly printed octavo magazine of thirty-four
pages in tinted covers, has been placed on our
table, and we call the special attention of our "Star
Club," to it, as in every way worthy of their literary
patronage, and a model for all who may have
that—

"The voice that rolls the stars along
Agits all the promies."
The material and typographical execution are unex-
ceptially good, and the contributions and editoral
articles are all of the practical "star-gazer" vigor and
ability. It will be observed that this is a new
claimant of public patronage, and there is a freshness and vigor about it which indicates that it has "come to stay."
We hope the votaries of the beautiful science of
astronomy will extend their patronage to a work of its
worth, a liberal patronage of the enterprise.

Proceedings of a convention of agriculturists held in the department of agriculture, January 10th to 18th, 1882, Washington, D. C. 294 pp. octavo. Report upon the condition of winter grain, and upon the condition of farm animals of the United States, 1882. 208 pp. Report upon the condition of grain, the condition of all cereals, and the area of
spring grain. 15 pp. octavo. Report upon the condition of winter grain, the progress of cotton and
flaxseed cultures, the condition of all the farm
animals, the results of the draining. 255 pp. octavo. All neatly and uniformly printed books, issued by the
department of agriculture, and all containing many items of solid information, and also much that has no value whatever to the layman in the general scene, and then only to those who read and heed.

Eleventh Report of the State Entomologist, on the Noxious and Beneficial Insects of the State of
Indiana, being the Sixth Annual Report by Prof. Cyrrus Thomas, Ph. D., published June, 1885, at $1.10,
with title page and index, and without the usual illustrations. Prof. Thomas has valuable aid in the State through the entomo-
lological labors of Mr. W. D. Comquillet, of Woodstock,
Ill., who contributes largely to this report; also in
Prof. G. H. French, who contributes the second part of
the report.

The report is mainly confined to new phases of old
insects—subjects] heretofore described, but have
since developed some new characteristics. In their
histories, for instance, Helotia Armigera as a holl-worm, a corn-worm, a tomato worm, etc.,
showing its facility of character, and its "adaptation
of means to ends. Two years ago we bred this
Helotia in the Conservatory of the Spring Garden in
Lancaster, county, where it was,"" Parthenia, a tobacco
plant. We do not know that it was plentiful, but we
have its existence as a feeder on the tobacco
plant and its species, identified by competent authori-
ties outside of our own experience. We acknowled-
ged it a success, but we have, for many other reasons
extended it to us by the State Entomologists of Illinois.

The Ladies Floral Cabinet, for July, 1882. A large
eRoyal embellished quarto of 22 pages; a true
"Pictorial Home Companion," devoted to the
flower garden, and political and domestic literature.
New York, $1.25 a year. This journal is gotten up in the
highest style of typographic, pictorial and literary
art, and worthy the patronage of at least the women
of our country.

The Sugar Beet, devoted to the cultivation and
utilization of the Sugar Beet, 3rd year, No. 2, Phila-
adelphia, May 26th, 1882. This journal is an
excellent quarterly quartos seems to have come to
stay, and abates not in its faith in the ultimate suc-
cess of the Sugar Beet industry in the United States;
and from the fact that 86,000 pounds of Sugar Beet
seed valued at $4,165 had been imported into the
United States for planting in New York, and Ohio, and
we here believe that the people are cultivating an 
ailishing, although, perhaps, a somewhat tardy faith in it. Show but sure is considered a normal progress.

We have just received a "Pamphlet of Pot-
stown and Later Strawberry Plants," with instructions for their cultivation, and for sale by J.
county, New Jersey, for the Summer and Autumn of 1882. Six pages octavo, with a beautiful
illustration of the Manchester Strawberry, natural
size, in colors, including an announcement of the
Illinois Raspberry, two varieties of small fruits
that have received the endorsement of some of the
most prominent fruit-growers of New York, New
York and Pennsylvania, after the most thorough and
practical tests. We somehow never have too much of
either of these fruits in our markets, nor yet of the mulberry, the product of which is so
important to the interest of the producer as well as the consumer, to good quality and hardy varieties of these
fruits, believing it to be to the advantage of both if our fruit growers were to extend their in-
formation in this direction, and particularly we would suggest that they send for catalogues, especially as the proprietor offers pamph-

ets post free to all.

State, District and County Fairs.—We have
received a copy of the Premium List—50 pages
octavo—of the Thirty third Indiana State Fair, profuse-
ly illustrated, and among the entries always receive
similar documents from Indiana, Illinois, Kansas,
Ohio, and elsewhere, long before we receive any-
thing of the kind from Pennsylvania. The book also
contains a diagram of the Indiana State Fair grounds, and a map of the State, illustrating its entire railroad
system. Perhaps there is no city in the Union that is
so central in its State, as the City of Indianapolis,
nor none that has more railroads raming its entire
domain. The list is large and the premiums liberal.
For cinnamon, apples, and other cylinders under
sixteen years of age, together with a large list of
"special premiums" from outside enterprises,
Indiana industry certainly has some faith in the uses of fair to stimulate progress in agriculture. The State of "how many states," August 8th and October 11th. Also, 15 district fairs in the
State, and one great general fair. The diagram
shows that the Indiana State Fair includes about
thirty buildings for the accommodation of the various
exhibits. About one-half of the enclosure is devoted to a race-course. That is a feature in agri-
cultural exhibitions that seems indispensable everywhere, and the idea is to improve it, and not
abolish it.
Important to Grocers, Packers, Hucksters, and the General Public.

TRAPPING FOR FUTURE MAKER.

A New Process for Preserving all Perishable Articles, Animal and Vegetable from Fermentation and Putrefaction, Retaining their Odor and Flavor.

"OZONE—Purified air, active state of Oxygen."—Webster.

This preservative is not a liquid pickle, or any of the old and exploded processes, but is simply and purely OZONE, as procured and applied by an entirely new process. Ozone is the active constituent of every free substance, and possesses the power to preserve animal and vegetable substances from decay.

There is nothing on the face of the earth to equal the Effects which Ozone, the new Preservative, will not preserve for all time in a perfectly fresh and palatable condition.

The color of Ozone as a natural preservative has always been known to our elder chemists for years, but, until now, no means of producing it in a practical, inexpensive way, and simple manner have been discovered.

Microscopic observations prove that decay is due to certain matter or minute germs, that develop upon animal and vegetable structures. Ozone, applied by the Freepen method, seals and destroys these germs at once, and thus preserves.

At our office in Cincinnati can be seen almost every article that can be thought of, preserved by this process, and every visitor is invited to come in, taste, smell, take away with him, and test in every way the merits of Ozone as a preservative. We will also keep, free of charge, any article that is brought or sent to be preserved by this process.

FREE MEATS, such as beef, mutton, veal, pork, poultry, game, fish, &c., preserved by this method, can be shipped to Europe, subjected to all changes suffered through long transportation, and arrive in a state of perfect preservation.

EGGS can be treated at a cost of less than one dollar a thousand dozen, and he kept in an ordinary room six months or more, thoroughly preserved; the yolk held in its normal condition, and the eggs as much as forty days after they were treated, and will sell as strictly "choice." The advantage in preserving eggs is readily seen; there are some seasons when they can be hatched for $0.50 a gross, and others when to retain the advantage of one from hundred to three hundred per cent. One man, with this method, can preserve 5,000 dozen a day.

Fruit may be preserved to ripen in their native climate, and may be transported to any part of the world.

The juice expressed from fruits can be held for an indefinite period without fermenting, and the process for preserving vegetables is as perfect. Celery can be perfectly sweet for any length of time.

VEGETABLES can be kept for an indefinite period in their natural condition. All fruits, berries, flour, meal, &c., are held in their normal condition.

BUTTER, after being treated by this process, will not become rancid.

Dead human bodies, treated before decomposition sets in, can be held in a natural condition for weeks, without preserving the odor or flavor; and we have the very great value of those founders.

There is no change in the slightest particular in the appearance of any article thus preserved, and no trace of any foreign or unnatural odor or taste.

The process is so simple that a child can operate as well and as successfully as a man. There is no expensive apparatus or machinery required.

A room filled with different articles, such as eggs, meat, fish, &c., can be treated at one time, without any labor or expense.

In fact, there is nothing that Ozone will not preserve. Think of everything you can think of, and you can preserve them all. A man, in a sort, decay, or spoil, and then remember that we guarantee you, that if you wish to preserve anything you want it done. If you will keep examining as to whether condition for use at your pleasure, you will find nothing that cannot be preserved.

There is not a township in the United States in which a live man cannot make any amount of money with this process. The lowest average price in the United States, in whose hands we can place this Preservative, and through him secure the business which every county ought to reduce.

A FORTUNE awaits any man who secures control of OZONE in any Township or County.

A. C. Force, Marietta, Ohio, has cleared $20,000 in two months. $2 for a test package was his first investment.

J. B. Gaylord, 30 La Salle St., Chicago, is pressing eggs, fruit, etc., for the commission men of Chicago, earning $100 a day in his first season. Flesch & Hartz, 600 Wabash Ave., Chicago, have an order for 120 dozen eggs a day, and this business is making $400 a month clear. $2 for a test package was his first investment.

D. F. Free, Marystown, Ontario Co., Mich., has cleared $500 a month since August. $2 for a test package was his first investment.

B. B. Bower, 302 La Salle St., Chicago, is pressing eggs, fruit, etc., for the commission men of Chicago, earning $100 a day in his first season. Flesch & Hartz, 600 Wabash Ave., Chicago, have an order for 120 dozen eggs a day, and this business is making $400 a month clear. $2 for a test package was his first investment.

E. T. Dunn, 306 Wabash Ave., Chicago, is pressing eggs, fruit, etc., for the commission men of Chicago, earning $100 a day in his first season. Flesch & Hartz, 600 Wabash Ave., Chicago, have an order for 120 dozen eggs a day, and this business is making $400 a month clear. $2 for a test package was his first investment.

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How to Secure a Fortune with Ozone.

A test package of Ozone, containing a sufficient quantity to preserve one thousand dozen eggs, or other articles in proportion, will be sent to any applicant on receipt of $2. This package will enable the applicant to procure any line of bees and any experiments for his own use, and this one test package entitles him to the extraordinary merits of Ozone as a Preservative.

After having thus satisfied himself, and had time to look the field over, to determine what he finds his interests best adapted to, and then to use his test package to prove the worth or any line of business which is best suited to him and to his township or county—we will enter into an arrangement with him that will make a fortune for him and give us real profits. We will give exclusive township or county privileges to the first responsive applicant who orders a test package and desires to control the operation in his county, town, or village, which do not order Ozone. If you think of any article that you are doubtful about Ozone preserving remember we guarantee that it will preserve it, no matter what it is.

REFERENCES.

We desire to call your attention to a class of references which no enterprise or firm based on any thing but the monotonous business success and highest commercial merit could acquire.

We refer, by permission, as to our integrity and to the value of the Preservative, to the following notes and letters: Edward C. Hoye, Member Board of Public Welfare, Kansas; Henry W. Heath, Collector Internal Revenue; Ralph & Wemington, Attorneys; Martin H. Harrell and R. H. Hopkins, County Commissioners, W. S. Capper and L. M. Hildreth, all of Cincinnati, Ohio, and many others. These gentlemen are familiar with the merits of our Preservative, and from actual observation from which we have no occasion to doubt.

The Most Valuable Article in the World.

The $2 you invest in a test package, will surely lead you to secure a township or county, and then your way is absolutely clear to make from $5,000 to $10,000 a year.

Give your full address in every letter, and send your letter to PRENTICE PRESERVING COMPANY, (Limited.)

S. E. Cor. Ninth & Race Sts., Cincinnati, O.
THE LANCASTER FARMER

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FARMING FOR PROFIT.

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LANDRETH'S
BLOOMSBURG SWEDE, OR RUTA BAGA,
Jethro of critical selection, and has proved to be unquestionably the most desirable of all known strains of PURPLE TOP YELLOW RUTA BAGA.

The foliage is not supernumerous, but leaves, which are oval and globular, the crown deep purple, and the flower a deep yellow. The illustration conveys a good idea of the shape assumed by this strain.
Also, Stagbeard Garden Ruta Baga Tumip, white dirted, Purple top Ruta Baga Turnip, Hanover Long French, or German Turnip, Yellow Aberdeen, or Scotch Yellow Turnip, Pomaranca White Globe strap Turnip, Amber Globe (strap) Yellow Stalk Turnip, Early Flat Dutch strap Turnip, the Flat Red, or Purple Top strap beard, Turnip, Cow Horn Turnip, Early White Egg, Early White Egg Globe Turnip, White Norfolk Globe Turnip, Seven Top Turnip.

Every farmer should sow Turnip Seeds. A good stock of turnips is the best and most economical food for fatten during the winter and early spring months. Also, turnips grown on the ground, and planted in, make very valuable manure.

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Founded Under the Auspices of the Lancaster County Agricultural and Horticultural Society.

EDITED BY DR. S. S. RATHVON.

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Dr. S. S. Rathvon, who has so ably managed the editorial department in the past, will continue in the position of editor. His contributions as subjects connected with the science of farming, and particularly that specialty of which he is so thoroughly a master—botanical science—some knowledge of which has become a necessity to the successful farmer, are alone worth much more than the price of this publication. He is determined to make "The Farmer" a necessity to all households.

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All communications in regard to the editorial management should be addressed to Dr. S. S. Rathvon, Lancaster, Pa., and all business letters in regard to subscriptions and advertising should be addressed to the publisher. State of advertising can be had on application at the office.

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July, 1882.

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LANCASTER, PA. 1882.

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I. THE LANCASTER FARMER.

Pennsylvania Railroad Schedule. Trains leave the Depot in this city, as follows:

<table>
<thead>
<tr>
<th>Route</th>
<th>Leave</th>
<th>Destination</th>
<th>Time</th>
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<tbody>
<tr>
<td>WE TWARD</td>
<td>Lancaster</td>
<td>Harrisburg</td>
<td>4:00 a.m.</td>
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<tr>
<td>Pacific Express</td>
<td>5:30 a.m.</td>
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<tr>
<td>Erie</td>
<td>9:30 a.m.</td>
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<tr>
<td>New York</td>
<td>1:30 p.m.</td>
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<tr>
<td>Washington</td>
<td>7:00 p.m.</td>
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<tr>
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LANCASTER, PA., AUGUST, 1882
Vol. XIV. No. 3.

The Lancaster Farmer.

EDITORIAL.

A CHOSEN PEOPLE.

"Those who labor in the earth are the chosen people of God, whose breasts he has made his peculiar deposit for substantial and genuine virtue."

The foregoing very pretty sentiment is one of the utterances of the "sage of Monticello"—the immortal Jefferson—and as we find it used as a motto under the title head of the Farmers' Monthly Visitor, an agricultural journal, conducted by Isaac Hill, at Concord, N. H., about forty years ago, we presume that the "workers in the earth" means farmers, although for the matter of that it might be so construed as to mean railroad excavating, canal digging, and perhaps also fence-making, at least as far as relates to the digging of post-holes. Of course, in Jefferson's time, although there may have been fence-making, yet there was no railroad or canal making, no excavating except an occasional tail-face to a mill, or cutting down a hill for a town road. We believe cultivators of the soil are entitled to an extra distinction above all other manual operators on earth, but we do not think they are the "chosen people of God," above all others who earn their bread by the sweat of their faces, only because they "labor in the earth." Cain labored in the earth, but he does not seem to have been chosen of God in as special a sense as Abel was, who did not labor in the earth, but was a herder. Many fine things are patriotizingly said about farmers, and no matter how much they merit them yet there is reason to believe that many of them are said ironically. If the above sentiment, in its application to farmers, was popular in Jefferson's day, it is singular that farmers, as a class, should have had such a limited influence in the general make-up of the government. It is fifty-six years since Jefferson died, and yet it is only now beginning to be seen that agriculture ought to be represented in the national cabinet, for if the "people of God" are worthy of any position in the construction of civil government, it surely ought to be there. We may legitimately claim this position for agriculture, without setting up a special claim for agriculturists per se. Doubtless, like all other classes of men, they are "good, bad, and indifferent." However this may be, it is unquestionable that agriculture should not only be a co-ordinate department of government, but should also outrank all other departments; because, if it were not for agriculture our government, our commerce, our manufactures, and our civilization itself, in no sense, would be much in advance of our aborigines or the clouded Patagonians.

Wherever there are thoroughly cultivated grain fields, orchards, gardens, including lawns, flowering vegetation, shrubbery, and even forests, there you may expect to find a corresponding civilization, and as such, they are in a large sense the "people of God"

whose labors have produced a civilizing effect of this kind; not however to the total exclusion of others, who may be laboring as honestly, as faithfully, as effectually, and as usefully, in a different occupation.

It perhaps would not militate against any people to be considered the "people of God" if they provided they understood in what sense they were chosen to such a distinction—whether arbitrarily, or as the best instruments to effect certain ends.

The Israelites claimed to be the "chosen people of God," and this has also been accorded to them by Christians, and yet according to the records of inspiration they were a dreadfully "stiff-necked, idolatrous and wicked nation;" but they were the best instruments in the hands of deity to accomplish His purposes among men on earth, just as under a stress in civil government, a thief may be chosen to catch a thief. Agriculturists certainly seem to have the advantage of all other occupations, because there seems to be no doubt about the legitimacy and usefulness of their calling, which is more than can be said about many others. And yet, there are many honest people in the world, who verily believe that the cultivation and sale of tobacco is a perversion of agriculture, and of course, are altogether unable to believe that any persons so employed are, by way of eminence, the "chosen people of God."

All this leads us to conclude that men often employ descriptive and explanatory terms of which they do not duly consider the import at the time they use them, and those in whose behalf they are employed, and astonished that they should have been so distinguished in a matter which they deem within the sphere of their bounteous duty, and therefore entitled to no special distinction. The "people of God," are therefore those who are endeavoring to do the will of God on earth as it is done in heaven.

GREEN CORN PUDDING.

Take eighteen ears of green corn, split the kernels lengthwise of the ears with a sharp knife, then with a case knife scrape the corn from the cob; mix it with three or four parts of rich sweet milk; add four eggs well beaten, two tablespoonsful of sugar, salt to the taste; bake it three hours. To be eaten hot, with butter.

We extract the above from the Farmers' Monthly Visitor of June 30, 1874, and we do so because we know it is a most toothsome dish, and have often wondered why housewives so seldom prepare it, for it is far superior to anything else that is made out of green corn—better than "corn starch." Of course the above quantities are too large for a small family, but it can be made proportionately with the one-half or one-quarter of those quantities.

The corn should not be too ripe—just passing out of its milky state—when the inner pulp can be easily pressed out, by a moderately forced manipulation with the back of a common table-knife: leaving nothing but the empty shells of the grains adhering to the cob. When corn is too young and milky the operation may be facilitated by first steaming or parboiling it. As corn is just in season now (or soon will be) for this preparation we confidently recommend it to our worthy housewives. It, perhaps, may involve a little more time and labor than the usual modes of cooking corn, but the result will be ample compensation for all the additional trouble.

KITCHEN GARDEN FOR AUGUST.

In the Middle States the work in this month does not vary materially from the month of July. Cabbage for winter use may head if planted at once. Celery, earth up; plant for future use. Endive plant. Beets—Bash or Snapp-plant; tender Shoots gathered in late autumn may be preserved in strong brine (salt and water) for winter use, and vary but little from those freshly gathered. Lattuce sow in drills to head. Peas sow. This vegetable is a delicacy in autumn, and should more frequently appear at table. Landreth's Extra Early, sown in latter end of this month and beginning of next, perfect before frost. Spinach sow for autumn use; for winter use sow in September. Radishes sow; the Spanish and China for winter; the Golden Globe and Old Turnip (rooted) for autumn. Ruta Baga sow without fail; if not already done. Should the ground be dry work thoroughly and sow in the dust; the seed may vegetate with the first shower. A roller to compress the soil sometimes promotes vegetation; but there is this disadvantage, if heavy dashed rains immediately ensue the ground packs and the seed is lost. Yellow Aberdeen, Pomeranian Globe and Amber Globe: Turnips sow early in the month; also the German Sweet, don't forget it; the Early Dutch and Red-Topped Turnips—both strap-leaved varieties—may be sown until the first of September, although it is well to sow at least a portion earlier, as at a late day it is difficult to remedy a failure. Read remarks under the head of July.

Onion seed raised in that portion of Pennsylvania which surrounds Philadelphia unquestionably must be earlier than the New England seed, and still more so when compared with Western seed. The growth conclusively proves the assertion. This is an important feature, as the early marketed onions always bring the highest prices. Try the experiment and you will find that seed from this locality will make bulbs long before seeds from any other locality. —A Auditor's Rural Register.

GOOD HUSBANDRY.

"A place for everything, and everything in its place," has passed into a domestic proverb, and doubtless many of those who most frequently and most earnestly use it, may suppose it had its origin in modern times, but this is a most egregious error. It is found frequently used in "The Science of Good Husbandry, or the Economics of Xenophon," and Xenophon died about 444 years before the
beginning of the Christian Era. Xenophon records an interview between Socrates and Isocophus, a rich and powerful Athenian, in which occur many of the economical maxims of the present day—not only secular or domestic maxims, but those also of a religious character, albeit both were Pagen.

For instance, when Socrates inquired whether Isocophus had instructed his wife in the things "which relate to the management of a house," he answered: "I did, but not before I had implored the gods to show me what instructions were necessary for her, and that she might have a heart to learn and practice those instructions to the advantage and profit of us both." This and this noble Athenian also invoked the guidance of the gods in all his enterprises. No matter about the quality of his religion—it was the best then accessible to him—it was his faith we commend, a faith that puts to blush many of the pietistic practices of modern christianity, which have little regard to any influence outside of the sacred sources.

"Husbandry," says Isocophus, "is an honorable science, and the most pleasant and profitable of any other: it is favored by the gods and beloved by mankind.

Even the drawbacks to husbandry existed in ancient times very much as they do now. "There are many unforeseen accidents that happen in husbandry, which will sometimes destroy all our hopes of profit, though a husbandman has acted with the greatest skill and diligence. Sometimes hail, droughts, mildews, or continual rains, spoil our crops, or vermin will even eat up the seed in the ground." What period in the world's history can the husbandman point back to, when these contingencies did not exist? And yet many are fretful and dissatisfied with the calling of the husbandman, and are yearning after that of the artisan, as though these troubles alone were his, and belong to the evils of our modern times.

HOW TO PRESERVE STABLE MANURE.

First.—All urine should be gathered or made to flow into a well-puddled or cemented eisern, covered and protected against currents of air, as experiments have proved that in one week four-fifths of the ammonia can be dissipated.

Second.—The stables should daily have a dusting of plaster-of-paris, and the solid manure when thrown out should have a slight sprinkling; the quantity can be regulated by the number of animals, some idea of which can be formed in estimating, that to hold the 135 pounds of nitrogen from an animal of 1000 pounds weight during one year in the form of ammonia, would require 1000 pounds of plaster-of-paris, or 500 pounds of oil of vitriol.

Third.—The manure should frequently have some soil or turf thrown over it, especially if exposed to the sun in hot weather.

Fourth.—The urine should be frequently pumped over the manure heap, that the same may not become burned or dried out, and that the gypsum spread over it may combine with the ammonia generated. It will be well in the urine cistern to add 3 to 4 pounds of oil of vitriol to about 100 gallons of urine, thereby preventing the escape of ammonia. The acid when applied should be thoroughly stirred in, otherwise it may sink to the bottom by its gravity, and lie inert, and in a cemented eisern prove injurious to the well by dissolving the cement. From What of Fertilizers.

GAPES AND EELS.

All we have time and space to say, on this occasion, in regard to the theory of our contributor, W. J. P., on the origin of "gapes" and "hair worms," and the breeding habits of eels, is, that if his observations can be verified, or corroborated by any intelligent authority, he has made the greatest discovery, on these subjects, of the nineteenth century. We do not doubt his intelligence nor his integrity, but we think he may have based his conclusions on insufficient data.

EXCERPTS

INDIA has nearly 2,000,000 acres of land sown to wheat.

HOP-GROWERS are happy over the prospects of a heavy hop crop.

The prospects for good crops in France, Germany and Holland are favorable.

CLOVER will be a short crop in Michigan this season, owing to winter killing and drought.

APPLE trees in Berks County, Pa., are said to be dying from the effects of last year's drought.

In Georgia insects of all kinds are abundant and all kinds of crops are receiving their attentions.

CATTLE valued at $13,350,000 are calmly grazing in what was six years ago absolutely an Indian country.

A total of 85,120,806 sheep were shorn in the United States in 1880, with an average weight of 4.42 pounds.

This army worms, which are abundant in Lyons and Clay, Ky., are being destroyed by mirlons of small red ants.

A fruit-grower in California says that should the Chinese go the fruit interest in that State would suffer seriously.

California takes the lead for heavy heads of wheat. Some stalks have been shown, six feet high, with heads six inches long.

Two hundred thousand head of sheep were driven from New Mexico recently to Texas, and 50,000 wethers to Nebraska.

The silk trade of Switzerland gives employment to 70,000 hands. The yearly products of this industry amount to 130,000,000 francs.

There are over 150,000 orange trees in Florida, and the number is rapidly increasing annually. The product this year is put at 50,000,000 oranges.

The large bean-raising districts of New York are afflicted by a worm called the bean weevil, which is doing great damage to the newly planted crops.

The oleomargarine factories of New York have a producing capacity of 116,000,000 pounds annually, while the production of dairy butter in the State is only 111,000,000 pounds.

Fire Brick should be laid in a thin mortar made of fire clay, rather than in a lime and sand mortar, such as is used in ordinary brickwork. In laying up those portions of a boiler furnace requiring fire brick, provision should be made in the original wall for replacing the fire brick and without disturbing the outer brickwork.

When corn on the ear is fed to horses they masticate it much more slowly than if the corn was shelled. As a consequence that on the ear is better digested. A horse requires more time to eat corn on the ear than if fed either meal or shelled corn. If the horse can not have time to masticate a full feed of unshelled corn, then it is best to feed something else.

ROOTS OF GRASS.—The roots of grass being much shorter than those of cereals are less able to collect ash constituents from the soil. If, therefore, grass is mown for hay, manures containing potash, lime and phosphoric acid will generally be required. Like the cereal crops, grass is greatly increased in luxuriance by the application of soluble, nitrogenous manures.

BUTTER IN WINTER.—In Denmark in the management of the dairy rape cake, oats and wheat bran are reckoned as first-class butter foods, palm-nut cake and barley as second-class foods while laughed cake, peas and rye are placed in the third class. By the employment of first and second-class foods, with cut straw, hay and roots, an abundance of excellent butter is produced throughout the winter.

The opinion has generally prevailed that a little bran mixed with meal would produce more pork than clear meal, but in some experiments lately tried it was found that clear meal made more pork than a mixture of bran and meal.

The naturalists have found that trunks of trees undergo daily changes in diameter. From early morning to early afternoon there is a regular diminution, followed until twilight by an increase.

HOUSE-FLIES are found to be very frequently infested by parasitic worms, which suggests the possibility that they may also carry about the germs of infectious disease.

Dr. Virkes believes that the true function of the resinosus juices of plants is to serve as a balm for wounds, and that the resins, are not therefore excrementitious matter as some have thought.

INCLOSE a piece of ground adjacent to the house with a high picket fence, and set out plum trees in it. Keep the hens in the enclosure during the curculio's ravages, and a crop of plums annually will be the reward of the pains and the outage. The editor says the remedy is a good one, and has been used by plum growers for years. Whether it is as thoroughly efficacious as this correspondent thinks, is open to debate. However, in the vicinity of Detroit, two parties who have tried it for years declare it eminently satisfactory, as they have never had a curculio since they turned their fowls into their plum orchards.—Michigan Farmer.

STUDIES OF THE WIND IN JAPAN.—The Indian Bureau of statistics has received a report from the University of Tokio, Japan, on meteorology. Among other things, the movement of the wind for each day in the
year is given. The total movement for 1859 was about 4,000 miles greater than for 1879. When States and counties make such a record of the wind as this, the law of its motion may be ascertained, and then the character of the seasons in every part of the world, perhaps, foretold. The bureau is making an effort to interest observers everywhere in this matter.

The celebrated rose-bush at Hildesheim, in Hanover, reputed to have been planted by Charlemagne and therefore to be more than a thousand years old, has borne more blossoms this season than ever before, and is an object of much curiosity. The branches of the bush extend to about three feet and eight inches in height and three feet and four inches in width.

It is not generally known that Fortress Monroe is the largest single fortification in the world. It has already cost over $2,000,000. The water battery is considered to be one of the finest pieces of military construction ever built.

If you seed wheat perfectly clean. An hour spent in making seed clean will save a day or week in the future in eradicating weeds.

The bull is half of the herd. Thus a bull of the best milking strain of blood used even in a small lot of dairy cows greatly and at once improves each of his get.

Poultry.—As floors to poultry houses boards are not good, especially if chickens are to be brought up on them. Nothing is so good as deep, well pulverized, dry soil, which is really the least expensive of anything.

Care of Sheep.—Keep sheep dry under foot. This is even more necessary than cdooling them.

The Castor bean is a special crop of increasing popularity in all the Western States, and in some counties in the West they are leading crops. They have proved so profitable to the general farmer, as the cultivation and harvest are simple and require little or no outlay for machinery. As a crop they are nearly insect-proof, belong to the night-shade family; they also bid defiance to chinch bugs. For the last 15 years it is claimed they have not been below a profitable price but twice, and generally held at a most remunerative figure. Corn and other staples have been below this often a great deal.—Louisville, Ky., Agriculturist.

Venice and Amsterdam are the cities of bridges. The first has 450, the last 300. London has 13, Vienna 23, Berlin will soon have 50. Altogether the most beautiful and striking bridge in Europe is that over the Mohan at Prague.

The resident population of Great Britain in the middle of 1852 is estimated by the Registrar-General at 53,281,220 persons; that of England and Wales at 26,496,820; of Scotland at 3,854,403, and of Ireland at 5,688,079.

Farmers do not deceive by the cry, by our large city dailies, of such an immense crop of wheat in the West, This is gotten up for a purpose. While the crop is fair in some localities, large in others and poor in others, this cry is started for the purpose of stimulating the farmers of the states east of the Mississippi river to rush their wheat into the market at a leggury price before the Western wheat is harvested. Once in the market the “covering” and speculating business would commence in earnest. With the present popular prospects for corn there is no reason why farmers should crowd their wheat on the market.—South Delhi (Indians) Era.

How to Feed Pigs.—The great point in feeding pigs is to keep them growing. It is not a difficult matter to accomplish, but there are many who keep pigs that fail to grow them profitably. If our farmers would lay out and fit up clever pastures for their pigs there would be a great point gained towards economical feeding. Clover pasture with a little-skin milk, pure water and a little soaked corn will make pig pork at low cost.

M. Toussaint has shown experimentally the serious dangers of eating coarse--hard rice as is now so generally done. If the meat is uncooked, the germs of disease must pass into the system. The most frequent and dangerous masticity with which animals slaughtered for food were affected is consumption, and even if the animal is only slightly affected, persons eating the uncooked meat are liable to infection. The raw juice pressed from a slightly affected cow’s lung was used to inoculate rabbits and young pigs, and all the subjects died in a short time from the disease. The experiment was repeated with a portion of the juice which had been partially cooked, and the result was the same. Thorough cooking of the meat at a temperature of 150 or 160 degrees, is recommended as a precaution un-safe to neglect.

The New England Homestead says: “There is a right and a wrong time for everything. It certainly isn’t the right time for a farmer to take a vacation before haying and hoing are finished. But with these jobs (the greatest the New England farmer has to do) out of the way, there certainly ought to be a chance for farmers, like other folks, to get off for a few day’s vacation. A day or two even of change of scene and a little sea air—braces a man up wonderfully for future work. And if a farmer and his family who have toiled through the season till August don’t deserve a little rest at least, then we don’t know who does.”

A leading farmer in Middle Tennessee states that a crop of 10 acres of amber cane was of more value to him for feeding hogs, cattle, and mules, than any 25-acre crop on his farm, and that it paid better than any other crop. Those who have had the most experience claim that the amber cane is twice as nutritious as common field corn, and yields nearly double the amount of the best varieties of the sweet corn usually sown for fodder.—St. Louis Journal of Agriculture.

There has lately been exhibited in the Botanical Garden of Berlin the biggest flower in the world—the great flower of Sumatra known in science as the Rafflesia Arnoldi, and peculiar to Java and Sumatra. It measures nearly ten feet in circumference, and more than three in diameter. Sir Stanford Raffles and Dr. Joseph Arnold were exploring in company when they discovered this champion plant.

Don’t kill the toads, the ugly toads that hop around your door. Each meal the little earth doth eat a hundred bugs or more. He sits around with aspect meek, until the bug hath nearly; then he swells forth his little tongue like lightning double-gened. And then he soberly doth wink and shut his ugly mug, and patiently doth wait until there comes another bug.—Independent Farmer.

Merino sheep will yield from ten to twenty pounds of wool per head, and the Cotwal more even, while scrub sheep will give from three to six pounds. The fine sheep eat no more than scrub and produce more flesh, to say nothing of the superior quality of both wool and flesh. Therefore keep only good sheep.

Washington Territory is now setting up its claims to distinction as a State. Two years ago the census of that Territory showed a population of 75,116. The people now claim a population of quite 150,000. Owing to the remoteness of the Territory from the East this increase is quite remarkable, and the completion of the Northern Pacific Railroad will result in the rapid filling up of that country.

Wide Tires.—Those who have learned to use wide tire wagons find great advantage in so doing. They could not be induced to go back to the narrow tire. The philosophy of this is readily observed. The broad tires do not cut through, either in mud or sand, thus making the draft much lighter; besides this the roads are not cut up, but on the contrary spread the road tire presses down the humus and leaves a smooth track, thus bettering the roads, the advantage of which is easily understood. The tire which seems to meet with general favor is from three and a half to four inches wide.

In consequence of the defective water supply there has been an increase of 25 per cent. in the price of fire insurance rates in the city of Galveston. The average under the old rates was 11 per cent. The new schedule of fire rates will make it 11 per cent. There is about $20,000,000 regularly covered by insurance in Galveston.

Fifty years ago the capital invested in cotton factories was $40,000,000, and the amount of cotton used was 77,759,310 pounds; to-day the capital is $225,000,000, and the material used 765,210,300 pounds. Forty years ago the woolen factories used 50,385,924 pounds of wool; to-day 29,695,690 pounds of wool were manufactured into articles worth $234,587,671. In the last ten years our silk products have increased from a value of $12,210,662 to $34,410,622. Fifty years ago there were but few tanneries and no shoe factories. In 1870 4,213 tanneries, using 9,000,000 hides and 3,064,000 skins, produced leather worth $86,198,353; while the 3,151 shoe factories turned out articles worth $146,704,000. In 1830 the yield of the iron furnaces was 155,000 tons; in 1880 that of iron and steel works was 7,955,000 tons, worth $137,557,885. In but twenty years the capital employed in making machinery has increased from $1,500,000 to $40,000,000, and the annual product is worth $20,000,000. In 1810 the value of paper made in the United States was $2,000,000; in 1870 it was $35,382,435. To quote the words of Commissioner Loring, from whose address
THE LANCASTER FARMER.

[August]

TOMATO HORN-WORM.

Misses S. L. and others.—The large green worm with diagonal whitish stripes along the sides, and a horn on the back near the hinder end, is the larva of *Spilinus* (Macrostotheca) carolinia, the same that also infests the tobacco plant, the potato, the egg-plant, etc.; and the little white rolllices that stud the entire bodies of them, are cocoons of a small Hymenopterous parasite, that infests them (*Micro-

America.*

The parent, a small four-winged fly—deposits her eggs on or in the worm, and as soon as they hatch they penetrate the body of the worm and feed upon its substance. When they are mature they issue from the body of the worm, and each one spins a small white cocoon, that resembles a grain of rice. After a few days in the pupal state the fly is evolved, cuts off the upper end and issues forth a small fly, like the parent, and is soon ready to repeat the operation on some other worm. A worm so infested, rarely, if ever, has the strength to effect its usual transformations. Even if it should be able to go into the ground and assume the pupal form it would be hardly able to change to a moth. The worm usually dies with its looked feet firmly fixed in the plant, without the ability to disengage them, and as we have found the dried carcass of the worm with the cocoons on it so suspended during the winter season, it is very probable that those that evolve late in the season hibernate in that condition during the winter, and thus perpetuate the species the following season. It is possible that those which may be carried under ground in the body of the worm, would hibernate there and come forth as a very partial


THE ENGLISH SPARROWS.

The papers complain of the injurious habits of the English sparrow, showing that they drive other small birds away. It is plain that they are becoming a nuisance. One farmer in Canada says there are about five thousand of these birds in his farm and they are driving away the small horn in eating up his corn and barley and other productions of the ground. Our good wife complains that they destroy many of her garden products. Shall this evil be permitted to continue? Is there a law to protect the little depredators? If there is, let it be repealed, and let the boys have the privilege of trapping and shooting them, and there will soon be a lessening of their numbers. I would suppose they would be a nice morsel for the breakfast table for those who have a love for little birds to eat—J. F. W., Lancaster, Aug. 10, 1852.

Our views on the "English Sparrow" have been given at length in vol. 14, page 17 of the *Farmer,* and it is hardly necessary to repeat them here. They are doubtless protected under the laws protecting other birds, so far as they are insidious, but we do not consider the sparrow as legitimately belonging to this class; and therefore, its introduction and domestication here was a mistake. Mr. Edward Perera, of France, says, "the peasants of Lombardy prepare nesting places for the sparrows and then destroy the nests." This might be a good plan to effect their ultimate extinction here, without a repeal of the laws. Prevent their procreation, and their sires and dams will eventually die of old age. The same authority says, "the sparrow is a pilager who carries on his depredations in the harvest-field, in the garden, in the granary, and among the ripe grapes on our trellises; and I cannot join in the kind of worship paid him by certain persons more credulous of his pretended utility than they are by his instinct of rapine and waste." As we may refer to this able essay on some future occasion again, it is only necessary to add at this time, that the above characteristics of the sparrow are being loudly echoed from various parts of the country. True, his character may sometimes be traduced, but there may be a well founded suspicion of the innocence of one, whom everybody deems guilty.
GAPES IN POULTRY.

So much have been said of late in regard to the gapes in poultry, and as nothing positive has yet been determined on, I feel as though I should say something on the subject, giving my experience. I find by close observations that they are neither a hooze nor do they take them from the ground, nor yet is it contagious. It is nothing more, or less than the pip, as it was called when I was a boy, and they come from the downy plumage which the chick is covered with when hatched; whilst picking themselves the down is sucked in the windpipe while breathing, and if the quill enters first it invariably will work itself down, and it requires but a day or two until it is covered with a red desity substance and will move when disturbed, but it contains no ovas nor ever will. In time, if not removed it will dissolve and pass away.

They are generally double, one being a little longer than the other; they are not male and female as some suppose—far from it. If you will examine the down, all small feathers, you will find them all double, the same as the gap worm. Young ducks do not moult their downy plumage on this occasion; it increases in length and in quantity, and adheres more firmly to the skin for the purpose of keeping the body dry.

Anything of this kind, or hairs from anything, placed in a warm and wet place and receiving air, will become living animals. They are very common at this time of the year, where stock go to drink, in the footprints, containing water. They differ in size and length, depending on the part of the body from which the hair had fallen. I took the other day from the ditch below my pump a knot of hair that was all alive; it was just as if it had been taken from the comb and wrapped around the finger, and a hairpin stuck through it. I removed the pin, shook them out in a basin of warm water; they appeared to enjoy their liberty very much. By drawing one through my finger nails, stripping off the red desity substance, the hair was then red. Just so with the gap worm. Chickens are more subject to gapes after a few days rainy weather. During this time they are cooped, and having no exercise, they pass the time in picking themselves; as after the first week they commence moulting the downy plume. The best remedy is the horse hair to remove them. Three or four inches from the coarse food; wheat and cracked corn; nature's food is dry, let us not change it. A better remedy still is to grease the chicks with lard and salt mixed; this will kill the life of the down and most generally prevent gapes, as grease or salt, or both combined, is death to any thing so delicate, or prevent any accumulation of it after passing into the pipe. I have made the chick my study for several years. My last essay on poultry I gave to the Farmer, giving the contents of ap egg and how it is made.

The Eel question is another puzzle to many and is still talked of through the papers. I will here give my experience in regard to their mode of breeding and where. I am a miller by trade and have lived near a mill pond for the past forty-five years. Some say that they descend down the streams until they reach salt water and there spawn, and whilst young ascend again hundreds of miles before they reach the head of the last mill pond. Wouldn't it be amusing to see a few hundred of young and old eels from three to twenty inches in length climbing up the breast of a mill pond, say ten to twenty feet high, and so on to the next? In one respect they are like other fish, they breed where they inhabit; their spawn is not round like other fish, they are more the shape of a hen's egg, and they are said to be about six to twelve inches in length, after which they are like other fish. I was doing some time ago from the same a spinner containing a few spawn, place in a bucket of lake warm water, and in a few days they will hatch; now drop a few drops of melted grease free from salt, and as it spreads over the surface they will come up and feed upon it; continue this for a few days and you will be surprised to see how the little wigglers will grow. Knowledge derived from the closet in the way of book learning in many instances is of but little use or benefit. Self taught from close observations and experimenting, is knowledge beneficial and it is never forgotten.—Your truly, W. J. P.

Is Lime a Manure, or only a Stimulant?

Much has been published pro and con, on this subject without settling the question either way. I am inclined to the belief that it is a manure as well as a stimulant.

I well remember coming up from Baltimore to York in the stage, sixty or sixty-two years ago, on passing through what was called the "York county Barrens," to see very little cultivation, and the old fields without fences, or only two or three rails, and no vegetation except that the ground was entirely covered with ashes of this nature of snow.

At a place where the stage stopped to change horses, a man got in the stage and took a seat along side of me. He at once began to "pump" me where I was going, &c. I told him I had been to Baltimore, and was on my way home to Lancaster county. He said he was fortunate in living in so rich a county—that in his neighborhood the land was too poor to make a living on—it that they could hardly grow enough on it to keep the family in provision the year round—that if they sowed rye, they could get very little more than to pay expenses. I said, why do you not manure the ground? Ah! that's the difficulty—we have no manure—no grass or feed, hay, &c., to keep stock, so we have to do as well as we can.

Now, that "barren locality" produces as heavy crops of corn, wheat, and grass as Lancaster co. A few years ago I was again in that locality and I saw better crops of corn than we had that season here—they having had more rain in that section. Clover fields too, so very rank as to lodge all over the field. What has brought about this wonderful change? Lime was the renovator, that like the alchemists of old, turned barren soil into gold, or money into the farmers' pockets!

The same may be said of parts of Lancaster county. I well remember hearing people talk of "poor Lancaster." They said the soil was so poor that Kiticre could not live there—that they had to come over to Manor and Hempfield townships to get feed to live. It suited these birds very well for breeding purposes, as a few formed their nest on the ground, on a bare spot so they could see round, thus guarding their nests from enemies, as polecats, possums, snakes, &c.—but no feed for their young in that section. I do not now know the locality of this poor spot, but it may have been in parishes of Duncannon, Palmyra, or Martic townships. That yellow grass extended quite as wonderfully as the "Barrens of York co." (land that could be bought sixty years ago for 4 or 5 dollars an acre, is now worth probably from 50 to 80 dollars, or more, according to improvements. Here too, lime was the forerunner of improvement, so this lime is evidently a manural agent. I well recollect the time when lime was first being applied to land as a fertilizer, some 50 or 60 years since.

A farm less than two miles from me, on the river hills, produced nothing but chestnuts and garlic. An old field had been in corn, as the blackberries, gooseberries, &c., was turned out as if of no further use, no fences, and a public road passing on one side, to cut off a corner people traveled over the field. All the vegetation on it was cinquefoil and running blackberry vines. All the income the family had was from a crop of chestnuts. But when a new owner took possession, chestnut trees and garlic soon disappeared, the former for rails and the latter for no earthly use. Lime being liberally applied, corn, wheat and even tobacco took their place, and now that old farm has been rejuvenated, and produces as heavy crops of useful vegetation as any in Lancaster county.

A farm not a hundred miles west of Lancaster where corn grew to three feet high and rye in spots here and there where cattle had dropped their excrement, grew only in spots (no wheat was sown.) There was also a public house on the farm and teamsters to Pittsburg stayed over to rest and feed, their horses of course dropped considerable manure, yet the farm did not improve until lime was applied, then to see the change that soon became apparent was really wonderful. No heavier crops can now be grown anywhere than on that poor farm, poor no longer. Many yet living may remember the poor quality of the soil in Chester county sixty years ago where now such heavy crops are grown. All this I think goes to show that lime is a manural agent of great power as a renovator of the soil.

Then we had none of the so called improved varieties of fruits, still such as we had, mostly seedlings, bore heavy crops of fruit. Apples every alternate year produced more than could be used, even after making cider, apple butter, vinegar and the cellar filled for winter times. We had several gardens, one for occupation for "apple jack"—bags having their fill for months and many bushels going to waste.

Why is it that our trees are so barren now? There is a reason in my mind as our lands becomes more productive for grass and grain by the use of calculate means, has it a contrary effect on fruit trees? It appears to me as if it might be so.
But I will not follow this train of reasoning at present as my sheet is full, but would wish to call the attention of farmers and fruit growers to the fact that our grain crops have increased during the last half century—chiefly from the use of lime, and our fruit crops decreased from some cause to me unknown unless it is from the application of calcareous manures. — J. B. Garber.

For the Lancaster Farmer.

Tariffs and Their Effects.

The article in the June number of the Farmer entitled "change of prices," etc., in which I trench on the tariff question, has brought J. P. in the July number, who, by the by, handles the tariff question with a good deal of ingenuity and argument, and also at considerable length. I must confess, however, that I cannot clearly comprehend J. P.'s argument, or rather, perhaps, J. P. does not take in my meaning in regard to the working the tariff. A country, or a government, comparatively stands in the attitude of an individual. If an individual has nothing to lose, of course not considered a good manager of his affairs. Or rather, if he has to buy more than he sells, he is not considered a good housekeeper. But whether the community is injuriously affected, or better off, I am at a loss to know.

First. Taking the term tariff to mean the exacting or levying a tax, direct or indirect, which should only be enforced to protect an individual or a government in particular emergencies, there ought to be no difficulty in reaching a conclusion, according to the very nature of the case. As times change, the things pertaining to human progress, so should our lawmakers change our laws. Our lawmakers should be selected from among such practical men as will be able to travel with the age in which they live, and the changes we are following.

As I said before, discount and repudiate all pretended Statesmen who profess to act for the people, but are nothing but corrupt and only and are interested in official spoils.

The four hundred millions of dollars are collected in tariffs, revenues and various other sources, one million four hundred thousand of which is in the Treasury of the United States, and the four millions of dollars collected in our State of which over four hundred thousand dollars is now kept in the State Treasury, and the thousands of dollars collected in Lancaster county, etc., (all of which I am no advocate of collecting direct from the people) if the people would take the trouble to look into the matters it would have the effect of opening their eyes, and excite their inquiry as to what is becoming of all this money, who gets it, how do they get it, and what is given as an equivalent for it?

The tariff, as I think it should be assessed and used, ought to be for reasonable protection—one nation to protect itself against another.

As a general thing a young nation, which is not yet firmly established in manufactures, and has not the hard money or specie, should be protected against the commercial innovations of older and more permanent, established nations, having lower prices and greater manufacturing facilities, absorbing the pecuniary means of the younger nation, by the withdrawal of its specie, and an unequal competition.

Taking for one of our maxims—perhaps, not the very best that an individual or a nation can be governed by—that "that individual or nation which makes economy and industry the enduring basis of individual, state and national prosperity, should be protected by the laws of the land, (always remembering to first seek the kingdom of heaven, and all these things shall be added unto you.)" We should act, as I said before, time's changes; and, as we have had heretofore, from time to time, protective tariffs which worked well, so well as to enable us to compete with older nations, and brought us ample revenue, so, in my opinion, we should continue to keep the balance of trade in our favor, but at the same time protect economy and industry, and not luxury and extravagance.—P. S. B.

Selections.

Silk Culture.

We are one of those who believe in the ultimate feasibility of silk culture in this country, and we desire to place on permanent record such information as may be useful to those who may desire to make this industry a specialty, among their secular occupations.

The following paper on this subject, by Prof. C. V. Riley, M. A. Ph. D. Entomologist of Department of Agriculture, we appropriate, from the columns of the National Farmer, Washington, D. C., as a proper introduction, because a history of the habits, the transformational and general characteristics of the several species, is of paramount importance in the conduct of the silk business; indeed, the very foundation of the whole superstructure is involved in healthy, thrifty worms. Without these through whose bodies the tissues known as silk are elaborated, all else would be a mere inert and profitless skeleton, only fit to be consigned to the "valley of dry bones," as an industrial enterprise.—[Ed.]

Nature of the Silk Worm.

The silkworm proper, or that which supplies the ordinary silk or commerce, is the larva of a small moth known to scientific men as Sereicaria domestica. It is often popularly characterized as the mulberry silkworm. Its place among insects is with the Lepidoptera, or spinners. There are several closely allied species, which spin silk of different qualities, none of which, however, unite strength and fineness in the same admirable proportions as does that of the mulberry species. The latter has, moreover, acquired many useful peculiarities during the long centuries of cultivation it has undergone. It has in fact become a true domesticated animal. The quality which man has endeavored to select in-breeding this insect is, of course, that of silk-producing, and hence we find that, when we compare it with its wild relations, the cocoon is vastly disproportionate to the size of the worm which makes it or the moth that issues from it. Other peculiarities have incidentally appeared, and the great number of varieties or races of the silkworm almost equal those of the domestic dog. The white color of the species; its seeming want of all desire to escape so long as it is kept supplied with leaves, and the loss of the power of flight on the part of the moth, are all undoubtedly the result of domestication. From these facts, and particularly from that of the great variation within specific limits to which the insect is subject, it will be evident to all that the following remarks upon the nature of the silkworm must necessarily be very general in their character.

The silkworm exists in four states—eggs, larva, chrysalis, and adult or imagines— which we will briefly describe.

Different States or Stages of the Silk Worm.

The Egg.—The egg of the silkworm moth is called by silkwavers the "seed." It is nearly round, slightly flattened, and in size resembles a turnip seed. Its color when first deposited is yellow, and this color it retains if unpigmented. If impregnated, however, it soon acquires a gray, slate, lillac, violet, or even dark green hue, according to variety or breed. It also becomes indurated. When discharge, it assumes a still darker and dull tint. With some varieties it is of great importance to note the difference between the turning upon which it is deposited, by a gumminess the moth, produced in the act of ovipositing. Other varieties, however, among which may be mentioned the Adria- nople whites and the yellows from Novika, in the Caucasus, have not this natural gum. As the hatching point approaches, the egg becomes lighter in color, which is due to the fact that its fluid contents become concentrated, as it were, into the central, forming worm, leaving an intervening space between it and the shell, which is semi-transparent. Just before hatching, the worm within becomes a dark brown, and the adrenalin pressure of a slight clicking sound is frequently heard, which sound is, however, common to the eggs of many other insects. After the worm has made its exit by gnawing a hole through one side of the shell, this last becomes quite white. Each female produces on an average from three to four hundred eggs, and one ounce of eggs contains about 40,000 individuals. It has been noticed that the color of the albinous fluid of the egg corresponds to that of the cocoon, so that when the fluid is white the cocoon produced is also white, and when yellow the cocoon again colored, a slight clicking sound is frequently heard, which sound is, however, common to the eggs of many other insects. After the worm has made its exit by gnawing a hole through one side of the shell, this last becomes quite white. Each female produces on an average from three to four hundred eggs, and one ounce of eggs contains about 40,000 individuals. It has been noticed that the color of the albinous fluid of the egg corresponds to that of the cocoon, so that when the fluid is white the cocoon produced is also white, and when yellow the cocoon again colored, a slight clicking sound is frequently heard, which sound is, however, common to the eggs of many other insects.

The Larva or Worm.—The worm goes through from three to four molts or ticknesses, the latter being the normal number. The periods between these different molts are called ages, there being five of these ages including the first from the hatching, and the last from the fourth molt to the spinning period. The time between each of these molts is usually divided as follows: The first period occurs from five to six days, the second but four or five, the third about five the fourth from four to six, and the fifth from eight to ten. These periods are not exact, nor the molts proportional. The time from the hatching to the spinning of the cocoons may, and does, vary all the way from 30 to 40 days, depending upon the race of the worm, the quality of the food, mode of feeding, temperature, etc.; but the same relative proportion of time between molts usually holds true. The color of the newly hatched worm is black or dark gray, and it is covered with long stiff hairs, which, upon close examination,
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will be found to spring from pale-colored tubercles. Different shades of dark gray will, however, be found among worms hatching from the same batch of eggs. The hairs and tubercles are not noticeable after the first molt and the worm gradually gets lighter and lighter, until, in the last stage, it is of a cream-white color. It never becomes entirely smooth, however, as there are short hairs along the sides, and very minute ones, not noticeable with the unaided eye, all over the body.

The preparation for each molt requires from two to three weeks, and during which time the worm attaches itself firmly by the abdominal prolegs (the 8 non-articulated legs under the 6th, 7th, 8th and 9th segments of the body, called prolegs in contradistinction to the 6 articulated true legs under the 1st, 2nd and 3rd segments,) and holds up the forepart of the body, and sometimes the tail. In front of the first joint a dark triangular spot is at this time noticeable, indicating the growth of the new head; and when the term of "sickness" is over, the worm casts its old integument, rests a short time to recover strength, and then, freshened, supple, and hungry, goes to work feeding voraciously on its companion for a short time. This so-called "sickness" which preceded the molt, was in its turn preceded by a most voracious appetite which served to stretch the skin. In the operation of molting the new head is first disengaged from the old skin, which is then gradually worked back from segment to segment until entirely cast off. If the worm is feeble, or has met with any misfortune, the shriveled skin may remain on the end of the body, being held by the anal horn; in which case the individual usually perishes in the course of time. It has been usually estimated that the worm in its growth consumes its own weight of leaves every twenty-four hours of its whole life. For this purpose it is provided, in two glands near the oblong mouth, with a strongly alkaline liquid secretion with which it moistens the end of the cocoon and dissolves the hard gummy lining. Then by a forward and backward motion, the prisoner, with cramped and damp wings, gradually forces its way out, and when once out the wings soon expand and fly. The silken threads are simply pushed aside, but enough of them get broken in the process to render the cocoons from which the moths escape, comparatively useless for reeling. The moth is of a fine color, with much difficulty in escaping from the silken threads. The silk is elaborated in a fluid condition in two long, slender convoluted vesicles, one upon each side of the alimentary canal. As these vesicles approach the head they become less convoluted and more slender, and finally unite within the spinneret, from which the silk issues in a glossy state and apparently in a single thread. The glutinous liquid which combines the two, and which hardens immediately on exposure to the air, may, however, be dissolved in warm water. The worm usually consumes from three to five days in the construction of the cocoon and then passes in three days more, by a final molt, into the chrysalis state.

THE COCOON.—The cocoon consists of an outer lining of loose silk known as "flax," which is used for carding, and is spun by the worm in first getting its bearings. The amount of this loose silk varies in different breeds. The inner cocoon is tough, strong, and compact, composed of a firm, continuous thread, which is, however, not wound in concentric circles as might be supposed, but irregularly, in short figure of eight loops, first in one place and then in another, so that in reeling, several yards of silk may be taken off without the cocoon turning around. In form the cocoon is usually oval, and in color yellowish, but in both these features it varies greatly, being either pure silver white, cream colored, greyish or yellowish, and very often constricted in the middle. It has always been considered possible to distinguish the sex of the contained insect from the general shape of the cocoon, those containing males being slender, depressed in the middle, and pointed at both ends, while the female cocoons are of a smaller size and rounder form, and resemble in shape a hen's egg with equalends. Mr. Crozier, however, emphatically denies this, and thinks it "next to impossible for the smartest connoisseur not to be mistaken."

THE CHRYSLALIS.—The chrysalis is a brown, oval body, comically thickset and much larger than the fully grown worm. In the external integument may be traced folds corresponding with the abdominal rings, the wings folded over the breast, the antennae and the eyes of the enclosed insect—the future moth. At the posterior end of the chrysalis, pushed closely up to the wall of the cocoon, is the larval skin, compressed into a dry wad of wrinkled integument. The chrysalis state continues for from two to three weeks, when the skin bursts and the moth emerges.

THE MOTH.—With no jaws, and confined within the narrow space of the cocoon, for want of food, dexterous in evading the close folds of the cocoon, the moth is able to live for a short time. By this purpose it is provided, in two glands near the oblong mouth, with a strongly alkaline liquid secretion with which it moistens the end of the cocoon and dissolves the hard gummy lining. Then by a forward and backward motion, the prisoner, with cramped and damp wings, gradually forces its way out, and when once out the wings soon expand and fly. The silken threads are simply pushed aside, but enough of them get broken in the process to render the cocoons from which the moths escape, comparatively useless for reeling.

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ENEMIES AND DISEASES.—As regards the enemies of the silkworm but little need to be said. It has been generally supposed that no true parasite will attack it, but in China and Japan great numbers of worms are killed by a disease known as "aji," which is undoubtedly produced by the larva of some insect parasite. Several diseases of a fungoid or epizootic nature, and several maladies which have not been fully characterized to enable us to determine their nature are common to this worm. One of these diseases, called "maeocarina," has been more or less destructive in Europe for many years. It is of precisely the same nature as the fungus (Eupnea maecasia,) which so frequently kills the common house-fly, and which sheds a halo of spores, readily seen upon the window-pane, around its victim.

A worm, about to die of this disease, becomes languid, and the pulsations of the dorsal vessel of the heart becomes insensible. It suddenly dies, and in a few hours becomes stiff rigid and discolored, and finally in a day, a white powder or efflorescence manifests itself, and soon entirely covers the body, developing most rapidly in a warm, humid, atmosphere. No outward signs indicate the first stage of the disease, and though it attacks worms of all ages, it is by far the most fatal in the fifth or last stage, just before the transformation.

"This disease was proved by Bassi to be due to the development of a fungus (Botrytis dissiosa) in the body of the worm. It is certainly infectious, the spores, when they come in contact with the body, being conveyed by the silk thread, and sometimes forth filaments which penetrate the skin, and, upon reaching the internal organs, give rise, as before mentioned, to that efflorescent manner described. Yet the most silkworm raisers, including such good authorities as F. E. Guerin-Meneville and Eugene Roberts, (Guide à relever de vers a soie,) who at first implicitly believed in the fungus origin of this disease, now consider that the Botrytis is only the ultimate symptom—the termination of it. At the same time they freely admit that the disease may be contracted by the Botrytis spores coming in contact with worms predisposed by unfavorable conditions to their influence. Such a view implies the contradictory belief that the disease may or may not be the result of the fungus, and those who consider the fungus as the sole cause certainly have the advantage of consistency," Dr. Carpenter, an eminent microscopist, believes the fungus origin of the disease, and thinks it entirely caused by floating spores being carried in at the spiracles or breathing-orifices of the worm, and germinating in the interior of the body.

When viewed by hand, it appears very clear that no remedies are known, but that care in producing good eggs, care in rearing the worms, good leaves, pure, even-tempered atmosphere, and cleanliness are checks to the disease. The drawers, and other objects with which the diseased worms may have been in contact, should be purified by fumigation of sulphuric acid (S. O2), produced by mixing balsamite of soda with any strong acid, or, better still, by subjecting them to a carbonate of soda from an atomizer. In this way all fungus spores will be destroyed. In fact it will be well to wash off the trays or boxes of worms with a solution of carbonate of soda, as a sure preventive. It is the best disinfectant known to science. The cheapest kinds may be used with the same efficacy as the more expensive.

Another disease known as "pehine," has proved extremely fatal in Southern Europe, and for twenty years has almost paralyzed silk culture in France. It is a disease which, in its nature and action, except in being here-
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Wintering and Hatching the Eggs.

We have already seen the importance of getting healthy eggs, free from hereditary disease, and of good and valuable races. There is little danger of premature hatching until December, but, from that time on, the eggs should be kept in a cool, dry room in tin boxes, carefully protected from flies. They are most safely stored in a dry cellar, where the temperature rarely sinks below the freezing point, and they should be occasiona-

The eggs may also, whether on earls or loose, be tied up in small bags and hung to the ceiling of the cold room. The string of the bag should be passed through a bottle neck or a piece of tin to prevent injury from rats and mice. The temperature should never be allowed to rise above 40° F., but may be allowed to sink below freezing point without injury. Indeed, eggs sent from one country to another are usually packed in ice. They should be kept at a low temperature until the mulberry leaves are well started in the spring, and great care must be taken as the weather grows warmer to prevent hatching before their food is ready for them, since both the mother and the eggs would perish in leaving out. One great object should be, in fact, to have them all kept back, as the tendency in our climate is to premature hatching. Another object should be to have them hatch uniformly, and this is best attained by keeping together those laid at one and the same time, and by wintering them, as already recommended, in cellars that are cool enough to prevent any embryonic development. They should, then, as soon as the leaves of their food-plant have commenced to put forth to be placed in trays and brought into a well- aired room where the temperature averages 70° F. A flat tray, covered with a piece of cloth, and adhering to the cloth on which they were laid, all that is necessary to do is to spread this same cloth over the bottom of the tray. If, on the contrary, they have been wintered in the loose condition, they must be uniformly silted or spread over sheets of cloth or paper. The temperature should be kept uniform, and a small stove in the hatching-room will prove very valuable in providing this uniformity. The heat of the room may be increased about 2° each day, and if the eggs have been well kept back during the winter, they will begin to hatch under such treatment on the fifth or sixth day. Eggs hatched in this way are, however, rather late to be exposed to the sun's rays, which would kill them in a very short time. As the time of hatching approaches the eggs grow lighter in color, and then the atmosphere must be kept moist artificially by sprinkling the floor, or otherwise, in order to enable the worms to eat through the egg-shell more easily. They also appear fresher and more vigorous with due amount of moisture.

Feeding and Rearing the Worms.

The room in which the rearing is to be done should be so arranged that it can be
ditely, bears a striking analogy to cholera among men. The worms affected by pebrine grow unequally, become languid, lose appetite and often manifest discolorcd spots upon the skin. They die all at ages, but, as in tussis-ior, the mortality is greatest in the last age. The real nature of this malady has been a long time a matter of dispute. In 1849, M. Gournier-Mene-

Varities of Races.

As before stated, domestication has had the effect of producing numerous varieties of the silkworm, every different climate into which it has been carried having produced either some changes in the quality of the silk, or the shape or color of the cocoons, or else altered the habits of the worm.

Some varieties produce but one brood in a year, no matter how the eggs are manipulated; such are known as Annuals. Others known as Bivoltins, hatch twice in the course of the year; the first time, as with the Annuals, in April or May, and the second, eight to ten days after the eggs are laid by the first brood. The eggs of the second brood are only kept for the next year's crop, as those of the first brood always either hatch or die soon after being laid. The Trecollins produce three annual generations. There are also Quadririol-
tins, and in Bengal, a variety known as Decoy which is said to produce eight generations in the course of a year. Some varieties molt but three times instead of four, especially in warm countries and with Trevoltins. Experiments, taking into consideration the size of the cocoon, quality of silk, time occupied, hardness, quantity of leaves required, the production of the Annuals to be more profitable than any of the Polyvoltins, although Trevoltins are often reared; and Mr. Alfred Brewer, of San Gabriel, Cal., says that he found a green Japanese variety of these last more hardy than the Chinese Annuals. Varieties are also known by the color of the cocoons they produce, as Greens or Whites or Yellows, and also by the country in which they flourish. The white silk is the most valuable in commerce, but the races producing yellow, cream-colored or flesh-colored cocoons are generally considered to be less profitable. Many of the varieties can be attempted, as individuals of the same breed exported to a dozen different localities, would, in all probability, soon present a dozen varieties. The three most marked and noted European varieties are the Mimacino (Italian) breed, producing fine small yellow cocoons; the Ardche, (French) producing large yellow cocoons, and the Brouasse (Turkish) producing large white cocoons of the best quality in Europe. Owing to the fearful prevalence of pebrine among the French and Italian races for fifteen or twenty years back, the Japanese breeds have been introduced into favor. The eggs are bought at Yokohama in Septem-

Silkworms are subject to other diseases, but none of them have acquired the importance of those described. What is called guttine by older authors is but a mild phase of pebrine. The worms are apt to be purged by unwashed leaves; too great heat makes them sickly, or they may become yellow, ill and die of a malady called grassee or jaundice, which is almost sure to appear in large broods, and which is very common in these races in this country. When the worms die from being unable to molt, they are called leukis, and such cases are most abundant at the fourth molt. All these different ailments, and others not men-

tioned, have received names, some local, others more general; but none of them warrant further notice here, as they are not likely to become very troublesome if proper attention and care be given to the worms.
thoroughly and easily ventilated, and warmed if desirable. A northeast exposure is the best, and buildings erected for the express purpose of housing combine these requisites. If but few worms are to be reared, all the operations can be performed in trays upon tables, but in large establishments the room is arranged with deep and numerous shelves, from 4 to 8 feet deep, and 2 feet 6 inches apart. All wood, however, should be well seasoned, as green wood seems to be injurious to the health of the worms. When the eggs are about to hatch, mosquito-netting or perforated paper should be laid over them lightly. Upon this can be easily spread fresh-plucked leaves and bits of straw. The appearance of the meshes of the net or the holes in the paper and cluster upon the leaves, when the whole net can be easily moved. In this moving, paper has the advantage over the netting, in that it is stiffer and does not jump the worms together in the middle. They may now be spread upon the shelves or trays, care being taken to give them plenty of space, as they grow rapidly. Each day's hatching should be kept separate, in order that the worms may be of a uniform size, and go through their different moltings or sicknesses with regularity and uniformity; and all eggs not hatched after five or six days from the appearance of the first should be thrown away, as they will be found to contain inferti-

Where branches, and not leaves, are fed, the Osage orange has the advantage of mul-berry, as its spines prevent too close settling or pecking, and thus insure ventilation. It is recommended by many to feed the worms while in their first age, and, consequently, when fresh and tender, leaves that have been cut up orashed, in order to give them more edges to eat upon and to make less work for them. This, however, is hardly necessary with Annuals, although it is quite generally practiced in France. With the second brood of Bivoltins it might be advisable, inasmuch as the leaves at the season of the year when they have attained their full growth are a little tough for the newly hatched individuals. In the spring, however, the leaves are small and tender, and nature has provided the young worms with sufficiently strong jaws to cut them.

MINERAL AT THE EXPOSITION.

Doctor W. T. Strachan, the superintendent of minerals for the New Mexico exposition is sending out the following circular to the miners of all the camps in the territory whose names have been given him:

I desire to call the attention of yourself and the miners of New Mexico, generally, to a rare opportunity for exhibiting to the world the mineral wealth of the territory, where it will do the most good, presented by our coming territorial exposition, commencing September 15th and ending September 24th, next. It will follow a fair promise of the success of the mineral exhibits of the territory, and it is hoped that all who are engaged in mining will render all the assistance in their power. Arrangements have been consummated for free return over the railroads of all exhibits; the association offers liberal premiums, and every arrangement will be made for the convenience of the exhibitors in the arrangement of their minerals. It is desired that each district prepare and send or bring a cabinet representing the different mines; but, when this can not be done, cabinets will be supplied and the management of the superintendent of minerals, specimen will be exhibited to the best advantage. I also suggest that each specimen be labeled plainly with the name of the district, mine and owner.
Tobacco, which last year produced 6,400,000 bushels of wheat, and purchased from the West nearly 3,000,000 bushels at a cost of over $4,000,000; while the wheat crop of that State this year is about 2,000,000 bushels, which will provide for domestic wants and leave a surplus for sale of about 3,000,000 bushels. In Georgia, Kentucky, Texas, North Carolina, and other States, the change is equally as great. The acreage devoted to corn and oats, as previously stated, is also much greater than in former years, and this means more home-raised bacon, and also less provender from the west for live stock. We think that we are fully within bounds in estimating that the decrease to be paid out by the South for foodstuffs during the crop-year 1882-83, as compared with 1881-82, will be at least less than $2,500,000 to $4,000,000. A revolution in the affairs of the South so great as this will undoubtedly tell upon the future prosperity of that whole section, and a few years more of the same course of diversified farming will make the Southern States practically independent.—Baltimore Journal of Commerce and Manufacturers’ Record.

THE MOSQUITO.

There is another little fly whom you have fed and regaled at your own expense and very unwillingly withal. She is by no means, modest, but steals unbidden into your room. She generally heralds her coming with some thing that is anything but soothing, and she is so persevering that even the strong “bara” with which you protect yourself are not proof against her persecutions. You have all, no doubt, at times exercised a little strategy with the mosquito, and when the little tormentor was fairly settled, made a dexterous movement of the hand, and, with a slap, exclaimed: “I’ve got him this time.” No such thing; you never get him in your life, but probably have often succeeded in crushing her, for the male mosquito is a considerable gentler than the female. The female he is decorated with a beautiful plume, and has such a love of home that he seldom sailes from the swamp where he was born, but contents himself with vegetable rather than animal juices. (I do not wish to make any reflection, but in the insect world it is always the females which sing.)

But to its history. The mosquito was not born a winged fly, and if you will examine a tub of rain water that has stood uncovered and unmoistened for a week or more during any of the summer months, you may see it in all its various forms. You may see a female supporting herself on the water with her four front legs and crossing the hinder part like the letter X. In this support made by the legs she is depositing her eggs, which are just perceptible to the naked eye. By the aid of a lens they are seen to be glued together so as to form a little boat, which knocks about on the water till the young hatch. And what hatches from them? Why those very wrigglers (Fla. 14. f.) which jerk away every time you touch the water. They are destined to live a certain period in this watery element and cannot take wing and join their parent in her war song and house invasions, till after throwing off the skin a few times, they have become full grown, and then with another molt have changed to what are technically known as pupae (g.) In this state they are no longer able to do anything but patiently float with their humped backs at the surface of the water, or swim by short jerks, after the fashion of a shrimp or a lobster. At the end of three days they stretch out on the surface like a boat, the mosquito bursts the skin and gradually works out of the shell which supports her during the critical operation. She rests with her long legs on the surface for a few moments till the wings have expanded and become dry, and then flies away to fulfill her mission, a totally different animal to what she was a few hours before, and no more able to live in the water as she did then than are any of us. Is it not wonderful that such profound changes should take place in such a short time? Even the bird has to learn to use its wings by practice and slow degree, but the mosquito uses her newly acquired organs of flight to perfection from the start.

In this transformation from an aquatic to an aerial life the mosquito has first breathed from a long tube near the tail; next through two tubular horns near the head, and finally, through a series of spiracles along the whole body.

From a calculation made by Baron Labour, the mosquito in flight vibrates its wings 3,000 times a minute—a rapidity of motion hardly conceivable.

Those who have traveled in summer on the lower Mississippi or in the northwest have experienced the torment which these frail flies can inflict. At times they drive every one from the boat, and trains can sometimes only be run with comfort on the Northern Pacific by keeping a smoke in the baggage car and the doors of all the coaches open to the flames.

The bravest man on the fleetest horse dares not cross some of the more rank and dark prairies of Northern Minnesota in June. It is well known that Father De Smet once nearly died of this mosquito-bite, his flesh being so swollen around the arms and legs that it literally burst.

Mosquitoes have caused the rout of armies and the desertion of cities, and I would counsel all who desire to learn how the hum of an insignificant gnat may inspire more terror than the roar of the lion, to consult Kirby and Spencer’s history of the former.

There are many species of the mosquito, all differing somewhat in habit and season of appearance, and doubtless also in mode of development, which, in fact, has been studied in only a few instances. They occur everywhere, whether in the torrid or the arctic zone, and are nowhere more numerous or tormenting than in Lapland.

Both the fly and the mosquito are great scavengers in infancy, the one purifying the air we breathe, the other the water we drink. They perform, in this way, an indirect service to man which few perhaps appreciate, and which somehow atones for their bad habits in maturity.

Breeding from immature animals is a great mistake. It is the foundation of degeneracy.

THE LANCASTER FARMER.

[August.

OUR LOCAL ORGANIZATIONS.

LANCASTER COUNTY AGRICULTURAL AND HORTICULTURAL SOCIETY.

The Lancaster County Agricultural Society met statzdy in their rooms on Monday afternoon August 7, 1882.

The following members were present: H. M. Engle, Marietta; Calvin Cooper, Bird-in-Hand, Jos. F. Witmer, Paradise; J. C. Linville, Salibury; Johnson Miller, Warwick; Simon F. Eby, city; M. D. Kendig, Creswell; F. E. Diffenderfer, city; Peter H. Hershey, city; Henry Shiffler, Bird-in-Hand; J. F. Piers, Enola; W. B. Paxson, Columbia; W. B. Paxson, Coleman; L. G. Hunsecker, Manheim; Ephraim H. Hoover, Manheim; Eues B. Engle, Marietta; J. M. Johnston and W. W. Grist, city.

On motion the reading of the minutes of the last meeting was dispensed with.

Crop Reports.

Henry M. Engle reported corn as rather irregular; some is excellent, but some rather poor. It may come to an average crop with good weather. The early set will make a full crop. Potatoes are hardly a full crop. Pears will be short. Pasture is pretty plenty, but a little short. Wheat never was better quality not the average higher, perhaps. The oats are good—not quite so good as last year.

J. C. Linville said the wheat was very good; the oats had smut and rust; potatoes are an average crop. The tobacco is the poorest ever he saw. The grass is well set.

M. D. Kendig, of Manor, reported a very full wheat and straw crop; corn looks well; oats was medium; peppers are falling fast. Tobacco is growing well since the last rain. The green worms are very numerous. The rainfall for July was 1 2-5 inches for June it was 1 1/2.

Johnson Miller said the wheat crop was a remarkable one in quantity and quality. Oats about half a crop. Hay better than expected. Tobacco is now growing well; the prospects are encouraging; peaches are inferior, apples are dropping fast and are imperfect.

J. Frank Landis said that wheat was never better. A professional thrasher reports an average of 50 bushels to the acre. Corn is doing well. Peaches are ripening immaturity. Grapes are rotting a little.

Calvin Cooper never saw a more promising crop of grapes but some are rotting. He was unable to account for it. Telegraphs and Harford bees, however, seem very well cultivated.

Reports. Rogers Nos 9 and 33 are afflicted mostly by the rot.

H. M. Engle said some growers held cultivation is not preventive of rot. He did not know what the cause was.

J. C. Linville said in Ohio and New York the disease is very common, and their cultivation has in some cases been given up. Rose bugs have done much harm to his grapes. He has tried to put the clusters into paper bags.

H. M. Engle said it was believed by some that bunching was a remedy for rot. He proposes to do this himself.

S. F. Eby reported an unusual crop of grapes; very few have so far been injured. Peaches are very abundant on his trees. Has been obliged to cut down some. Tobacco is West Hampshie is unevent.

W. B. Paxson said he had a peculiar experience with a grape vine. It died down to the ground. He applied bone, which seemed to nurse it, and this year it is very full. There are no peaches in his neighborhood this year. What is not incomparable the vines have done well. Tobacco looks well in early planted beds and bad in the late.

Calvin Cooper placed tobacco stems around the trunks of peach trees, and there is not the sign of a borer in any of the trees so treated. He set the stems around the butts of the trees and tied them at the top.
How Should Manure be Applied.

M. D. Kendig said this question was hard to answer. Some operators always apply their manure in one form or other. However, it would be better to apply it in a way that is not harmful to the crop. The manure should be applied in a way that is not damaging to the crop. If the manure is applied properly, the crop will grow better.

W. R. Paxson was named as the essayist for the next meeting. The following subjects for discussion at the next meeting were named:

What is the cause of “streaks” in butter? Referred to Mr. H. E. Finley.

Will it not pay the farmer to cut his corn fodder before feeding it to his cattle? Referred to Mr. H. E. Finley.

Is it now too late to homestead? Referred to Mr. H. E. Finley.

What is the best method of preparing and seeding corn ground with wheat? Referred to Mr. H. E. Finley.

Mr. Schum stated that he was more successful in raising pigeons than ever before. He sent at least 150 pairs to New York, Washington, and other cities.

Poultry Association.

The regular monthly meeting of the Poultry Association was held Monday morning, August 3, 1882. The following members were present: Isaac H. Brooks, Martikel, and J. B. Lightly, Charles Lippold, W. W. Gresch, John A. Schunn, Charles L. Low, W. L. Duffield, and W. A. Schaefer, all from the city. The meetings of the Poultry Association are held every other month, commencing with the first of April.

Prevention of Gapes.

I perfectly agree with the article in the article in the article in the Gazette. I feel that this method of prevention is much needed to control the gapes. I believe that it is a very effective method to prevent the gapes.

The Lancaster Farmer, 1882
Charles Lippold reported good success with some varieties of pigeons, but poor with some of the rest. There being no further business, the society adjourned.

FULTON FARMERS' CLUB.

The Fulton Farmers’ Club met at the residence of Wm. King in a somewhat altered manner, and all the members and several visitors were present.

Exhibits.

J. R. Blackburn exhibited a sample of Hisgees’ prolific wheat, raised from seed received from the Patent Office. The quantity planted was too small to enable him to decide on the productiveness of the variety.

Wm. King exhibited samples of his wheat and oats. The wheat was thrashed from the raking of his field, and was a rather inferior article. The oats were fed 29 pounds per bushel, and produced only at the rate of about 19 bushels per acre.

Salie Hamilton exhibited some home-made hard soap made from Lewis’s prepared lye. She recommends it for all kinds of washing and scrubbing, and it requires no boiling while being made.

Some of the best wheats were June last from the Boyd creek near Parkenburg. It was made on the 16th of June last from partly skinned meal. Some considered it good while others thought it rather inferior to what their mothers used to make.

Some of the best wheats were:

J. R. Blackburn, 2 bushels.
Simon Preston, 3 bushels.

"Do the members consider the Fultz wheat the best for us to sow?" The members replied as follows: J. R. Blackburn said he had tried the Fultz wheat two years and abandoned it. Josiah Brown likes the Fultz; he believes that on an average it is the best of them. Day Wood has raised the Fultz for five years and likes it well enough to continue sowing it. S. L. Greggs has sowed the Fultz for several years, and last fall he sowed Fultz, Key’s Prophetic, Davis Wheat brown and Italian; he has not thrashed yet but is satisfied that the Fultz wheat is the best. Thomas P. King considers the Fultz the best under very favorable circumstances. Montillon Brown had found the Fultz to do the best for him, although it does not stand up long after it is ripe; but before that time it stands well. It seemed to be generally believed that, on short soil, the Fultz was nearly certain to do well, but where the land is thin some other varieties are likely to do better.

The Best Time to Sow.

Joseph Brown asked "What time will the members recommend the wheat be sown?" J. R. Blackburn, who sowed the Fultz two winters ago, said that he considered that four weeks from the time of the first fall of snow is the best time for sowing. Thomas P. King said he was in favor of sowing early either quite early or else not till late in September. Last year S. L. Greggs sowed an acre after tobacco on the 16th of October, and it was the best wheat he had.

A Question of Plows.

E. H. Isolato said it is now several years since the chilled plows were introduced into this neighborhood and wished to know if the members now considered them better than the common Willey plow. Joseph R. Blackburn said he bought a chilled plow last fall and after repeated trials and returning in the interval to his old plows, he considers the new plow rather an improvement on the old. His new plow is the "Advance," and he uses the slip point.

Day Wood, L. W. Miles, Montillon Brown, Simon Preston and C. L. Gatechel, are each using some patterns of the new plows and all are pleased with their work. Some think they run hard and nearly all consider them more expensive than the Willey plows. A question was asked if he had any evidence that his syphon chilled plow and found it so expensive for points that he put the jointer on the Willey and it did just as good work.

Russian Oats.

Montillon Brown asked, "How many have tried Russian oats and how do they like it?" Several had small parcels of it and found it to ripen late, but the trials were too small a scale to decide, upon its merits.

Literary Exercises.

John Costes made some remarks on Creanerries. He thinks that if people had facilities to attend to dairying it would pay, but if not, it was best to sell the milk at a creamery.

Essay on Noxious Weeds, by Wm. King.
Carrie Blackburn recited "A Doctor’s Story." Mary Hoopes read, "Sooley’s Appeal."

A Farmer’s Reunion.

A committee was appointed to make arrangements for a meeting to be held in the Hon. James Black’s grove at Black Barren Springs, Sept. 9, 1852. It will be a general meeting of the farmers in agriculture are invited to be present and bring machinery. Several public speakers are expected and the occasion no doubt will be one of great interest as well as benefit to our farming community. The following persons were appointed: J. R. Blackburn, Mary Blackburn, Montillon Brown, Wm. King, Rebecca King, George A. King and Martha Brown.

Noxious Weeds.

When quite a small boy we well remember seeing our father’s hired man reach out both hands and with one grasp an ox eye daisy and with the other a wild carrot saying, "Pink and carrot, two of the worst things that can grow on a man’s farm." This remark was given in the general sentiment of the time and to this day the two weeds are looked upon as the greatest pests that infest our farms. But while we would not willingly encourage the growth of pestiferous weeds we will say that in a very few years there will be a great demand for them. Wheat has passed upon a farm, we have never been able to see why the two weeds above mentioned should have been singled out from the myriads of their companious as objects that were to be regarded as especially troublesome. With concerted effort on the part of the public and local authorities we can exterminate or at least propagate from seed and for the fact that the adjoining farms are polluted with it any farmer could eradicate it from his farm in a few years if he should think it worth the effort. The daisy having a perennial root, and the carrot being propagated by seed, its eradication would require a great deal of labor and more trouble in the plant, but even it will give place to a rank growth of grass: but is almost sure to put in an appearance again if the grass dies off and becomes thin on the ground. The two plants take up room, generation after generation, and thrive. This is the worst and about the only thing that can be said against them. We have several others that give us more trouble, but they are here and are likely to stay, so we will at present make no effort to point them out. It is the pests that are coming that we wish, at this time, to point out. We live in a country that is free from the scourge, we have the Canada thistle on every side of us, and only a few miles off. In any year we may find it growing in our fields, for the seeds have been known to lie dormant, or the crest of the snow. Fortunately it grows in almost any seed and with a little attention can be kept from overrunning our fields. Not so with the horse nettle; its progress is ever onward. But little more than a decade ago it was extremely rare; at the present time it is very common, it is spreading as a rate that but a few of the most observing have any idea of. It is brought here by Virginia cattle and can be found in almost any place where droves of them are kept or pass along. Any farm in the region to the north and east of Oak Hill there is scarcely a half mile of road where it has not taken hold in some place, while from the Baptist church to Conowingo it grows almost continuously. In any kind of soil or under any circumstances it is growing itself; and it is coming to stay. Once well rooted it is no boy’s play to eradicate it. If allowed to spread to any extent in our fields it will seriously detract from the value. It is therefore the interest of every farmer to see that it is confined to its present limits, if it cannot be eradicated. How this is to be done we will not at present attempt to show. Our purpose has been simply to call attention to the fact that we have an enemy advancing, and that we cannot too promptly or energetically in preparing to meet it.

LINNÆUS SOCIETY.

The society met on Saturday afternoon, July 29, 1852, in the ante-room of the museum; in the absence of the executive officers, S. M. Scoot, Esq., was called to the chair, and Mrs. L. N. Zell was appointed secretary.

After the usual opening order the following documents and additions were made to the museum and library:

Museum.

Dr. M. L. Davis donated a large specimen of Favidian, which he obtained from Mr. Hathaway, the former, the latter, was obtained, at Tioga, Pa. Mr. Hathaway is a blacksmith by occupation, and experimenting with the ore he found that when melted with iron and copper it rendered the former as hard as steel, and the latter as strong as iron. He had a razor blade made from an old stove grave mixed with this ore, and on melting them together in a crucible, then beaten into shape on an anvil, the metal became Siru in texture, and admitted of a very high polish. Favidian was discovered by Selina in 1850. Some authors have called it Virginia Molten Zinc, the former, by whom it was named after Vanadis, a Scandinavian deity, was the original discoverer. The metal is found in nearly all clays in small quantities, but its most abundant source is the Favidate of Lead, which has been found in Scotland, Mexico, Peru, and other countries. The metal may be chemically obtained by the reduction of Vanadis acid, in the form of a brilliant powder, having a silvery lustre.

It is not acted upon by sulphur or nitric acids, but nitro-muriatic acid dissolves it, the solution is described as resembling an aqueous solution of sulphate of copper.

Danes describes Favidilatia, or Vanadate of Lead (Vanadinsbier kers) as crystallizing hexagonally, but mostly occurring in implanted globules or inclusions; he is also one of the authors who attribute the hardness of the metal to the action of heat. This ore has a dark brown or brownish black color, and is generally observed only in an earthly state, much like a ferruginous clay. It is an interesting fact that it is now found in the State of Pennsylvania. An interesting little fresh-water fish, donated by W. L. Davis, “Protoplassa tawasimensis,” locally called the “San-Pereh,” but it belongs to the family Esocidomii, which is only remotely related to the true Peride. This fish is remarkable for being destitute of an air-bladder, hence it always observed lying upon the bottom of the river. It is not frequently seen in this state, but if it is found and never graces with the graceful limnian motion of other fishes, but changes its location by a sudden darting motion. The whole family to which it belongs are small fishes. The late Prof. S. S. Haldeman, described two new species from the lakes of New York, the first by some name, and the late Jacob Stauffer discovered a third one from the Conestoga, which was described by Prof. Cope. Perhaps there were few boys who had access to a stream of water to whom this little fish was not familiar. It was a great abundance in my boyhood in the Susque- hanna, and I have often succeeded in angling for it with a small hook, but it was more frequently taken with a "dip net," and used as a bait for larger fishes.

A bottle of insects taken at and in the vicinity of York Furnace spring, during the encampment of the museum clubs, in the present month, consisting mainly of the general Calocera, Trionia, Orthosoma, Chlersops, Lepidus, Teramys and Erythrus Saturalis. The last named occurred in tolerable abundance on the bloom of a species of Solanum, along the river, from the Viceroy's landing to the mouth of the Tusquean. Four specimens of "shell rock," found on Bair's Island by Mr. W. L. Gill, differing very much from each other. Those were found in large water-
Agriculture.

Lying in Failows.

That there is a wonderful progress in agriculture, a comparison of the practices of the present with the not very remote past abundantly shows. There is little doubt but that considerably more profit is derived from the grain than even men not very old used to obtain. In these increased productions consist the most encouraging of progressive features. Not thirty years ago, a year of sickness was an essential feature in the regular rotation of an English farm. The summer "failows" almost invariably preceded the wheat growing. But now the laying down of land to rest as a preliminary to the sowing of grain is rarely thought of. Still it continues in other countries, where the free communion of mind with mind, through the means of agricultural journals, is more uniform. As a method of farming, however, it is not necessary to depend on some scientist or particular seedsmen for an explanation of the proper method. On this subject Prof. A. E. Blount, of the State Agricultural College, Fort Collins, Colorado, states that farmers generally permit their wheat to rest over the winter, whereas if proper care should be bestowed upon its improvement by selection alone, not one would ever find it necessary to procure better seed. It only takes two years to make wheat No. 1 and pure by selection, and from three to ten years to make one grade of wheat superior to another, so that any locality are better than those from other places for seeding. To prove this fact Prof. Blount says:

"I have sowed— and am nicely growing now—the spring 181 different varieties, the seed of which I obtained from every country in the world. Many I rejected because they were not adapted to our climate; others improved by selection, were cast into spring wheats. Of all the samples received not one was as good, or begin to be as good, as the poorest I have here."

In other words, by careful selection the poorest wheat now is better than the best of the original stock, and this improvement has been made in one year. If it is desired to improve wheat try this method: Go over the field and select the largest heads for the best stalks. Spread the grains on a table and examine each one separately, discarding all but the best formed and fullest. Next season make a bed 12 or 15 inches wide, and 6 inches apart each way. Hoe well and keep clean. The result will be surprising, as the yield will be larger, the grains better and the seed clean. When, by doing this on a small piece of ground, the seed is purified, it can be sowed for a crop. Practice this annually, and there is no limit to improvement.—Philadelphia Record.

A Talk About Grasses.

The Deerfield Agricultural Society had the following to say about grasses: James S. Grinnell, of Deerfield, found that his business was based upon the idea of our success in farming, and it is of the greatest importance that we sow the best varieties of grasses and cut it at the right time. Mr. Johnson, of Greenfield, said that although raising grass is the foundation of farming, it is astonishing that farmers take to it so slowly. There are over 250 names of the grasses they cut. The principal grasses

Horticultural.

The Peach Crop.

Superintendent Mills, of the Delaware Railroad, recently collected the report of the peach crop, traversed by railway at 4,000,000 baskets. The heaviest yield will be in the district between Middle-town and Clayton, and, with considerable advantage, the weather this season, the crop may reach 5,000,000 baskets. This report makes an appeal in favor of those who are dependent upon water transportation. The peach growers of the peninsula will meet in convention at Dover tomorrow to discuss freights upon rates and facilities and other matters of interest.

Value of Fruit.

It is a fact that fruit is a great regulator of the human system. It will keep the blood in order, the bowels regular, tone up the stomach, and is positively a specific medicine for the person who becomes diseased. This is the case with those who have become largely interested in peach growing, as it removes the mustiness from the body and gives new life to the system. The fruit is nutritious and is of occasional value. The story was told to illustrate the man's necessities, but if he was what it was a means that has been resorted to. The man would spend two days in a vineyard or orchard to every five minutes in a drug store when anything is the matter with his body. In the making of pickles, of course, the chief fruit is the peach. If you ever think what a doctor gives for dyspepsia? He gives an acid. Fruit will furnish better and than the doctor can. You know what the doctor does with you when your liver is out of order? Wnts acids. Then why not, supply the creation itself? You have time to have your medicine done up in such a re- ligious manner as to prove to all the world that it is a table shape. Every home should have at least one graviure. Once in possession it would be almost above price.

Shallow Cultivation for Fruits.

Fruit growers must be reminded that their hose, cultivators and ploughs do not do so much damage to plants than good if not used with discretion. The small fruits—berries, currants, grapes, etc., which are cultivated by shallow cultivation, are found the best roots, those that provide the most favorable growth, and when we water, we must water at the root, and not pour down the leaves, and in our fields much would be the best treatment if it were possible. It is best to avoid shallow cultivation. I have seen intelligent men ploughing deep furrows alongside of their raspberries and then watered and were doing thorough work that would secure an abundant harvest. Let such men dig up one plant before they plough five. If they would dig out the best root, they would have seer. The same, I have said, we are using better than the root, and the butcherhouse they have committed. There are no top-rosters stretching far down into the soil, but simply running along the surface. I claim it is a four inches below the surface, and more than half of these have run down into the soil. If we want to grow strawberries and even new set raspberries we know what they will do. If not watered and well cared for we can no longer use the old or the new, but they have found the bold for life that the strangling peels have been chipped close about them.

The Vegetable Garden.

In these days of a scant supply of labor and high prices for H. economy, which does not approach improvement in the vegetable culture. To the farmer, it is important to hire only good, well-trained farm hands, but the gardener, on the other hand, is called upon to do a great deal at a commercially furnishing table. It is economy to feed your people well, but it is far from economical to have to purchase all they eat. A farmer is expected to have something besides salt pork and potatoes on his table, and a variety is more economical than meat, when you consider the higher prices of meat. Vegetables are so healthful, so economical and so improvable that it is a sign of a poor farmer if his table lacks them at any season of the year. They are good on less amount of the productive farm in the country which pays one-third as well as well-balanced garden plants, grown and cultivated. As land labor is costly, it is both wise and economical to...
dispense with it whenever possible. My experience in the care of horses shows that good hay is preferable to garden truck can be grown and cultivated by a man or boy, with one horse-level single shovel cultivator for four. The garden truck consists of four horses, four wagons by the employment of any three good men with hoes. A garden for vegetables should have a good water supply near it, and should be convenient for the plow and teams at all a good deal of time, in turning, and when the garden is drawn, it should be covered with good, old, well-rooted manure six inches deep, placed over twelve inches. Wipe with a wet cloth a solid piece; I mean weighing five or six pounds; make half a dozen holes in it by running the knife steel through it, parallel with the fibre of meat, and work a dozen holes in the meat, just big enough to admit the meat oof forefinger, fill the holes with a forcemeat made by the gardener in the recipe for roast chicken, obliterating the marks left by the fingers. Wrap the meat in strong enough to hold it, pour over it boiling water, sprinkle kine in a teaspoonful of salt, and half a teaspoonful of pepper; cover it for two hours; if the gravy is not thick enough stir in a little flour mixed with cold water, and boil it until the gravy is thick. Then dress the veal in flour, and fry it in an ordinary frying-pan. Fried onions or tomatoes may be added to garnish this dish, and this veal is a great favorite with children. The pieces of simply rolling its moist surface in sifted bread crumbs or cracker dust; if the crumbs are too weak, dip the article next dipped in beaten egg, and then again rolled in crumbs. The crumbs should always be sifted so that they may be of one size, and as fine as possible. The veal should be rolled off during frying. They are made by drying the veal, rolling it fine, and sifted it through a fine sieve; the coarser crumbs may again be rolled and sifted, or kept for stuffing or puddings. Crackers are made in the same way; cracker dust is sold ready for use.

RAGOUT OF COLD BEEF AND VEGETABLES.—Cut cold beef into thin slices, and add them, with the gravy and sprinkle it with flour and let it brown, over it with boiling water, and season it with salt and pepper; add to it any cold vegetables cut in similar pieces and serve, the stew will be very wholesome.

LIVE STOCK.

Advice of a Lancaster County Blacksmith on How to Shoe Horses.

A Lancaster county subscriber sends to the German Haysman's Monthly, a letter from a noted horseshoer in his vicinity, as to his mode of striking his work, and as to the best material, as being about as nearly perfect as it could be, as he thinks, and which he says must be directed to the attention of every shoer. The shoer must, he says, see the horse, and examine it well, and do so, and think, or it might have been published in a Western paper where he formerly resided: and he says, that the demand for shoeing an animal stands in a natural position, so that it is perfectly upright. If, so, the head of the foot takes up the whole circumference of the toe, and the dew claws are not or braces or sole; nor the heels; let nature do its own work. If it alone, once in six weeks or two months, the horse will be better cared for. He also says, that the shoe should come tight at the toe, heavy at the heels, for the heels are the tenderest part of the foot. Put the shoe well forward of the quarters. Use light nails. Con-
horses for two years, during which time their winter, summer, spring and autumn with bare feet without any trouble. The doctor's theory is that nature has provided them with bony plates known as horseshoes in various kinds of roads; that the hoof will be mold, and that the frost coming to the ground keeps the hoof proper, clean, and free from founder and other diseases.

Keep the Stable Clear of Flies

One of the greatest hindrances to thrift during hot weather is the annoyance caused by flies. This is true both of horses and cattle. Present methods of cleaning the stable are not sufficient. It cannot, in any considerable degree, control them, even in the huts we can do. The better class of stables should have a drain, a hood, and a fumigation being practiced to drive the flies out, the feed placed under a cover, and the use of small vessels of chlorine of about an inch being the will sometimes answer the purpose of keeping them out of the building. If a current of gases is used (sometimes called wolf's clay), which is larger of the European mosquitos, be placed in a blinder, the neck being supplied with a spout, by means of which the liquid can be sprinkled where the flies accumulate; early in the morning, the effect upon the flies will be observed, and the ancient method may be tried. This article is also used to destroy vermin.

Remedy for Side Hole in Cow's Teat

Make the edges of the opening raw with a sharp knife, or cauterize with a pointed stick or nitrate of silver. If this will not answer, put the strips of adhesive plaster, or better yet by a coating of "oil cloth," which can be obtained by any photographer, if the proving and manuring is not such as to be can be careful not to dress the dressing— and it will perhaps be better to draw the milk with a tube for several days or a week. If the hole is small, it may be necessary to close it by a stitch just through the skin; or in the case of the scratching of the edges of the opening with a knife and the application of oildon will however be sufficient.

Carr's Horses

The following abridged quotations of a French writer are deserving the attention of all who have horses under their care: The same quality of oats given to horses in winter some years ago to the time they are administered. I have made experiments on my own horses, and always observed the same result. I have noticed that if the water is not changed for several days, the horse will notice it, and make as if the water is not good. I have observed this, and have noted the same result. It is desired, then, a great advantage in giving horses this mixture, but it is also a great advantage in giving them this mixture, as the horses are accustomed to it, and have a great desire for it. This is bad practice I observe, that of giving grain and hay on their return to the stable, immediately after hard work.

The Stock.

Give all the stock a bedding, and especially the working oxen and horses. The cows will prove the better for it, so will the yearlings; to the swine a warm corner, and to the pullets a corner to themselves. Remember the zero weather we have in winter, and allow them a corner for shade and protection from other animals dependent upon us, by a little timely care.

Poultry

Poultry Gossip

An Indian man has a bronze turkey cock, seven months old, which weighs 151 pounds.

Like the horses, the swine, too, require daily white washing of the hen house will make the air there sweeter and purer than would otherwise be the case.
The Board of Health of New York city will probably take a hand in the question of undrawn poultry, and we hope they will show more sense than the aldermen.
The art of caressing roosters does away with the worry over their treatment, they do for ten cents a piece, and capons are of more value than hens.

Hens that lay few eggs, or eggs that will not hatch, are sometimes thrown out of the farm. Perhaps they comprehended their weakness and desire to make amends in a useful way. They are between the first and second months of the season, can be made to keep right on and incubate a second batch of eggs if her first hatching is removed in time and by another. Sometimes this is very desirable when sitters are scarce.

A New Jersey man recommends keeping eggs in warm water. We should think that this would be hard on the skilful. If they are to be kept away from cold, they should be kept in a warm air and an air that is free from any moisture or anything else? Has any one tried that?

Some decolorizer under hen roosts is a very important matter, both for health and economy. Covereth droppings every morning with sawdust, rod dust, dry, chaff, or with other material, and a yellow tarp will act as an absorbent, and the dangers of cholera will be greatly diminished.

A defender of undrawn poultry claims that it is a full crop which spoils dressed poultry, and not the fowls of the farmer. He claims that, after about twelve hours in advance of butchering. No doubt that is good advice, but to clean out all the unnec-

Poultry is not safe in a house infested with rats. These creatures when hungry—and they seem to be hungry all the time—will enter through small holes and small fowls from the roosts at night and kill them. This will raise the heads of their young. Judicious care will make a better proof.

Poultry does not sell according to its low price in market, but, like good butter and fresh eggs, according to its quality. Still so many people in the great cities, who buy their poultry at a spe-

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THE LANCASTER FARMER

[August, 1852]

of feeding green vegetables is a good one if persevered in. Of this they are fond. Above all, do not neglect to throw in a little kelp, and balance their rations at regular intervals, and all the occupation that may be afforded. Kelp is so common, and so cheap, as to be procured from a fresh soil in a short time, and afterwards scratched among the fresh earth for the feeders to eat. If it may be dug over, and the foxes find some insects in the turned up earth, and will hunt for more, which is another good point. Their flesh is so delicate as to be useless to any pets for green food in their yards, as nothing will grow beneath their constant tread—(Country Gentlemen).

We think more attention should be paid to the rearing of geese than is usual. Our may often travel half a day’s journey in the course of a flock of geese, and we are often met by no means to be despised when the birds are young, and their feathers are being formed. There is an erroneous opinion, and one without doubt generally prevalent, that geese cannot be successfully raised unless they be given the full enjoyment of a lake or a river close at hand. Our friend used to beat us and laugh at us, when visiting each other, at any base. His geese are on the belt, and he keeps a constant flock of geese—no knucks to look after, and you, in addition, have cat-fish and snapping turtles. We think he was wise.

If a pool of water is near, it is desirable and an advantageous condition for raising geese. A certain blanched, double, and drink, will really all the absolute necessaries of the case.

The difference between the Embden and the Toulouse gosling is so marked, that the former is the largest size, growing to the extreme weight of forty pounds in the course of a year.

The true Embden, called also the Bremen goose, should be pure white with brick-red legs, and heavily feathered at the claws, to prevent them from becoming quack, and have excellent flesh. A cross of the Embden and Toulouse is said to make better birds than either of those breeds. We cannot vouch for, but we have found the Toulouse rather better able to take care of themselves, as they can live by themselves, and the excellent white feathers of the Embdens are more valuable than those of their relatives. We have had our flock of Toulouse raised on feed, dry, warm place to huddle under in winter, and which, in summer, may be given plenty of air. This method has proved very successful, and we advocate the same system of feeding as has been applied to a very large extent by farmers who rear sheep for the market—by the system of feeding, a staple food when properly varied.—(Monthly.

For feeding Hens

Fat hens rarely lay. If hens are fed so much or so often that they begin to fatten rapidly, they will soon stop laying, and consequently lay few eggs. This is especially true of corn-fed hens, but even such as are fed on such screenings, hay, and old bones, or the second two for the front portions as you judge best. Throw the feed upon clean ground only so fast as they must have it. Stop as soon as the hens have eaten their quota. Let them forage all day for weed seeds, grass, insects, etc. They must have warm quarters, or the hens will not lay eggs during the winter. After a while begin to feed them sparingly a little meat scrap chipped fine, broken bones, or a spoonful of meal. This will keep them goin’ to lay.

LITERARY AND PERSONAL

The Shaker Manifesto, an octavo pages, published by the United Societies, Shaker Village, at Hancock, Vermont, monthly, at sixty cents a year, contains no literary matter. It contains a prayer, poetry, domestic economy, farm and garden, household and garden hints, etc. It can be illustrated in the following description of "A Minister of the Olden Times":

"There was no more cry of the gospel

Who never belonged to any sect;    
Who never cared for public houses and drank wine with sinners;

Who never received a salary;

Who never wore a black suit, nor a whitebecchik;

Who never used a prayer-book;

Or wrote a sermon;

Who never hired a concert soloist to draw souls to heaven;

Who never advertised his sermons;

Who never read a sermon;

Who never went through a course of theological study;

Who was never ordained;

Who never was "converted";

Who never went to conference;

Who never said he was "Christ."

If the foregoing should not be deemed sufficiently difficult, let it be added that he:

He never wore a hat or cap;

He never used his family name;

Who never was married;

Never wore breeches;

Never used a fork;

Who ate his meats "lounging";

Who never used corsets, except to drive people out of the Temple, instead of driving them in;

Who never travelled by railway or canal;

But, it must be remembered, He lived nearly ninety

Little, I make all things new."

Regulations and Premium List of the "Frederick County Agricultural Society."

Exhibition, 1882. $5,000 are offered in premiums. The officers of this body are carefully given and the regulations and general arrangements elaborately set forth, and the whole exhibition divided up into classes, departments and lots, with premiums, in products, implements, machinery and industries usually included in such fairs; but, except that the books of the organization is for the most part printed, we find, October 10th, it is no where stated explicitly on what days of the month the exhibition will be held.

The returns for July indicate an increased area populated, wheat, barley, rye, and oats being quite plentiful, and weather, when worms, bugs and insects are not to be found by the birds. But though considered necessary, and the grain is now the only thing able to meet the required demand, the wheat, barley and oats are unable to be sold for a cent or two a pound.

The best way to utilize these clods and to render them profitable is to cut them all fine, put them into a boiler with plenty of water and salt, and then filter off the bones separated from the flesh. Then stir cornmeal into it until it makes a thick-much, season with salt and pepper, and cook it for seven hours, and while it is hot and well-sweet and wholesome. In the summer they will be a very supply themselves with food, and, if we add a little of these dried beans, shanks, liver and bone pieces may be utilized in this way and the soup mixed in with meal or scalded wheat and served with plenty of salt and pepper. The pie also appears splendidly with fish; meat, grain and cooked vegetables is the principal staple food when properly varied.—(Monthly.

The Wonders of Incubation

It is the wonder of the world that the egg of the chicken during the process of incubation, from the day in which the mother hen begins her sedentary term can hatch the young of her species, that not only changes the shell and enters on life as an animate and living body of flesh and blood, but also changes the material of which it is composed, and the interest of learning no seeming destruction of material is of any moment, and we trust no economical tenet can ever be introduced to the effect that if we remove each day or offerr of the twenty or so days required for the perfection of the chicken, a still shorter period would be sufficient; it would demand the principles of creation) how the feathered tribe of our barnyard might thus be raised out of the ashes.

One of the wonders of life is in the egg from the beginning, as no amount of warmth and quiet will produce anything before the heart begins to beat. After the feathers are assured, the hen has sat on her eggs hardly twelve hours before we find some lineament of the head and neck. The first卵 is formed, and the second and the side the aspect is that of a very tiny horseshoe. Blood vessels appear at the end of the second day and their faint pulsation is distinguishable, one being the left ventricle and the other the right, and the two great arteries of the heart. About the fifteen hour one of the heart arteries, a tendril, keeps folded down upon itself. At the end of seventy hours symptoms of the wings are apparent and on the head five bubbles are seen, two of the incipient brain, one for the bill and the other for the eye, and on the fourth day the auricles, already visible, approach nearer to the neck. At the end of seven hours more we see the lungs and stomach, and, with wonderful rapidity, are developed the heart, liver, brain, mouth, jaw, eyes, and the joint and the upper jaw. At the 144th hour two ventricles are visible, and two drops of blood in the heart, and on the sixth day the foetal teeth have begun to show. The seventh day the brain begins to some consanguinity; and at the 118th hour the formation of the breast. Four hours after the breast bone is seen, and in six hours the breast bone begins to form, the back bone, the fore arm, the gin to lay.
Important to Grocers, Packers, Hucksters, and the General Public.

The MAZE FORTUNE MAKER.

A New Process for Preserving all Perishable Articles Animal and Vegetable from Fermentation and Putrefaction, Retaining their Odor and Flavor.

"OZONE-Purified air, active state of Oxygen."—Webster.

This preservation is not a liquid pickel, or any of the old and exploded processes, but is simply and purely OZONE, as produced and applied by an entirely new process, based on the principle that all the properties of any substance and possesses the power to preserve animal and vegetable structures from decay.

There is nothing on the face of the earth liable to decay or spoil which Ozone, the new Preservative, will not preserve for all time in a perfectly fresh and palatable condition.

The value of Ozone as a natural preserver has been known to our abler chemists for years, but, until now, no means of producing it in a practical, inexpensive, and simple form has been discovered.

Numerous practical observations prove that decay is due to either matter or minute germs, that develop and feed upon animal and vegetable structures. Ozone, applied by the Presto method, strikes and destroys these germs at once, and thus preserves. At our office in Cincinnati can be seen every article that can be thought of, preserved by this process, and every visitor is welcomed to come in, taste, smell, take away with him, and test in every way the means of preserving. Ozone is truly a new substance, and possesses the power to do this, and we assure you, and return it to the sender, for him to keep and test.

Real tests, such as beef, veal, pork, poultry, game, fish, etc., preserved by this method, can be shipped to Europe, subjected to atmospheric changes and return to this country in a state of perfect preservation.

Fruits can be preserved a month or more, and vegetables can be kept in ordinary room six months or more, thoroughly preserved; the yolk held in its normal condition, and the eggs as fresh and perfect as on the day they were laid, and will show no evidence of decomposition. The advantage of Ozone is that it can be used at any season when they can be bought for 8 or 10 cents a dozen, and by holding them, can be sold for an advance of from one hundred to three hundred per cent. One man, with this machine, can preserve his crops for a year.

FREIGHT may be permitted to repair in their native climate, and can be transported to any part of the world.

The juice expressed from fruits can be held for an indefinite period of time, and be made into any of the varied products of this process for producing a temperance beverage. Cider can be held perfectly sweet for any length of time, by introducing the natural state of the fruit, through the process of natural history. In the great Michigan apple producing counties, treated in their original packages at a small expense. All grains, flour, meal, etc, are held in their normal condition.

The weekly examinations of the test packages, before decomposition sets in, can be held in a natural condition for weeks, without puncturing the skin or mutilating the body in any way. Hence the great value of Ozone to undertakers.

There is no change in the slightest particular in the value or appearance of any article thus preserved, and no trace of any foreign or unnatural odor or taste.

The process is so simple that a child can operate as well and as successfully as a man. There is no expensive apparatus or machinery required.

A room filled with different articles, such as eggs, mect, fish, etc, can be treated at any time, without additional cable or expense.

The following prove there is nothing that Ozone will not preserve. Think of everything you want that is to Sour, decay, or spoil, and then remember that we guarantee that Ozone will preserve it in exactly the same condition it is put in, without any exception. A test package will preserve this article—i.e., it will preserve anything and every thing you can think of. This is not our strongest argument, but simply to meet any demands that may be made upon it. The following are a few articles which we have asked in the pledge of publishing. There are scores of others. Write us a line of any of the above parties and get the evidence direct.

Here's a chance for you to get in on the ground floor. We will pay you for any evidence that you can produce in the hands of your neighbors. We want to put out as many of these articles as we can—so you get the first chance of trying this new process. We believe it is the greatest discovery of the age. You will find it a wonderful thing. We have already had so many requests for it that we can not supply them. You can not fail to profit by this. The more you use it the more you will be convinced of its value.

**To Secure a Fortune with Ozone.**

A test package of Ozone, containing a sufficient quantity to preserve one thousand dozen eggs, or other articles in proportion, will be sent to any applicant, on receipt of 50 cents. This represents the most economical order, and will be forwarded to any part of the United States or Canada. The applicant is requested to return any unused portion, at the rate of 25 cents per pound, to our office. The applicant is furnished with a receipt, and will be allowed a full refund if he is not perfectly satisfied.

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JOHN A. HIE-STAND, Proprietor.

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M. LEVY, No. 3 East King street. For the best Dollar Shoes in Lancaster go to M. Levy, No. 3 East King street.

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TILLEY, FOWERS & BURST, No. 25 E. King St., Lancaster, Pa., Dealers in Dry Goods, Carpets and Merchant Tailoring. Prices as low as the lowest.

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G. H. AMER, No. 36 West King street, Dealer in Hats, Caps, Furs, etc. Articles warranted, Largest Prices Low.

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All the desirable styles of CLOTHES, CASHMERE, WOOLENS, COTTONS, SATIN and VELOURS, are kept constantly on hand, and made to order in plain or fashionable style, at prices to suit all customers.

All Wool Suits from $5.00 to $30.00.

All Wool Pants from $3.00 to $10.00.

All Wool Vests from $2.00 to $6.00.

Union and Cotton Goods proportionately less.

Clothes priced by the yard to those who desire to have them made elsewhere.

A full supply of Spring and Summer Goods just opened and to hand.

Thanks to a generous public for past patronage they hope to merit its continued recognition in their "new departures."

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LANCASTER, PA.

1848

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Devoted to Agriculture, Horticulture, Domestic Economy and Miscellaneous.

Founded Under the Auspices of the Lancaster County Agricultural and Horticultural Society.

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[An Eight, 1882]
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STATE AND COUNTY FAIRS OF 1882.

There are 47 State Fairs in the United States and Canada—the latter holding six, and several of our States holding two—for the year 1882.

Of county fairs notices of 671 being held in 21 States have been published, and these are confined to the Northern and Border States. Of what the South is doing in this direction we have not been yet advised. Maine holds 17 county fairs; Massachusetts, 29; Connecticut, 29; New Hampshire, 1; Vermont, 3; Rhode Island, 2; New York, 48; New Jersey, 10; Pennsylvania, 72; Illinois, 89; Indiana, 58; Iowa, 83; Michigan, 34; Ohio, 69; Kansas, 53; Minnesota, 1; Wisconsin, 13; Kentucky, 12; Maryland, 8; Delaware, 1; Virginia, 1; West Virginia, 1. The largest number are held in Illinois, only 10 of the counties holding "no fair," but many others holding two. Pennsylvania is third on the list, 10 of her counties holding no fairs, namely, Perry, Monroe, Mifflin, Huntingdon, Franklin, Adams, Cambria, Cameron, Centre and Lancaster. Lancaster, perhaps equals, if she does not exceed all the other non-holding counties put together in population, wealth and agricultural resources—for rich, too populous, and too prominent, perhaps, to need such an adjunct as a fair. If it were possible for one wide-awake and observant individual to visit all these 715 fairs, what a multitude of life's phases would be brought under his notice, and what a variety of local proclivities. There may be much labor, expense and vexation of spirit attending these enterprises, but surely there must be some compensation or they would not be continued.

KITCHEN GARDEN FOR SEPTEMBER.

In the Middle States many and varied are the duties which devolve on the gardener at this season. Not only do the growing crops demand attention, but seeds are to be sown to provide the necessary plants for the ensuing spring. Roots are to be divided and reset, Strawberry beds planted, &c. Cabbages, Jersey Wakefield, and Landreth's Large York, sows, to plant out in autumn, where the locality admits, or box up in cold frame, to keep till planting time in spring; the latter end of the month will be time enough to sow in the latitude of Lancaster county; especially sows the newly introduced sub-variety Bloomsdale, also Bloomsdale Brunswick, as a succession. Turnips, the early Dutch and Red-topped may be sown within the first half of this month, if fall has not chillingly damped off. In some sections the fly devours the early sowing. They are less voracious after the nights become cool and the dews heavy. Celery, earth up. Corn salad, sevry grass and chervil, sow for winter salad. Lettuce, sow for spring planting; the plants to be kept during winter in cold frames. The better sorts for autumn sowing are the Dutch Butler, Royal Cabbage, Bloomsdale Early Summer, and Lima. Spinach sow early in the month for autumn use; later winter and spring. Turnips and Rutab Bagage, cultivate.

Seed Purchasing a Matter of Confidence.

It is entirely so. The man who buys dry-goods, groceries, corn or cotton, can to a very considerable extent, judge of the quality and value of the article. This is not the case with seeds. Simply because a dealer says a certain cabbage seed he holds in his hand is "large late flat Dutch" it does not follow that it is so; he may have been deceived himself. No one can tell till valuable time and labor has been expended on the crop. No other commodity but drugs is so entirely a matter of confidence. It behooves every one to get his supplies from dealers of recognized reputation; men who have a reputation at stake which they value. Cheapness has a value—they cannot be cheap, in the common acceptation of the word—Landreth's "Rural Register.

Of course the foregoing, in relation to seeds, is not intended as a reduction upon any one engaged in the seed business, except such as pursue it fraudulently. A man who possessed a great reputation as a seedsmen would possess a great opportunity to perpetrate a fraud, but he would soon be found out. Retailers of seeds may intend no deception whatever, and yet may most egregiously deceive, because they may have been deceived themselves. The best plan is either to buy from the seedsmen himself, or from his accredited agent. Landreth's sealed packages we believe can be safely recommended to our patrons.

INSECT MIGRATIONS.

Nothing seems to be more indisputable, or more fully authenticated, than the migratory habits of some species of insects—indeed, the great African Locust (Locusta migratoria) has received its specific name from that very habit; but, it must be borne in mind, that insects do not migrate in the same sense that birds do. Birds, except a few local species, at the end of every summer season, migrate to a warmer region of the earth than the one in which they have passed the summer and reared their broods, and this is especially the case with invertebruous birds. In the northern temperate zone, at least, they migrate southward in the autumn of the year, and return again to their old haunts in the spring, and it is on record that the same pair have occupied the same nest for different periods, covering, from five to fifteen years, or more. And, we may infer, a priori, that those that pass the summer in the south temperate zone, at the end of the season, migrate northward, and return again to their old haunts in the spring. Although some of the birds that visit the northern zones in the summer may have the continent altogether, and pass our winter season in the West India Islands, yet the larger number only remove to our Southern, or the Mexican States, seemingly all the while hanging on the verge of spring. About five and forty years ago we passed a winter in Ohio county, Kentucky, and we were rather surprised, during a few warm days in the first half of January, to find the woods and the fields numerous inhabited by Robins, Bluebirds, Red-headed Woodpeckers, Flickers (Golden-winged Woodpeckers) Black-birds, Wrens, Sparrows, and a number of other familiar examples. After a week of balmy spring weather there followed a sudden change in the temperature; a snow fell sufficient to afford tolerable weather for two or three days, clearing up cold and freezing; after which not a single bird could be seen. A similar warm spell occurred again about the 10th of February, when the birds returned with greatly augmented numbers, but retired again before the cold blasts that ushered in the month of March. We then left the State and cannot say how soon the birds returned again, but according to our observation they seemed to be all the while "watching and waiting" for the advent of spring and summer. It is not so with insects. When we say "not in regard to insects" we mean that it is not so in the same sense or degree, for there are some approximations among some insects to the migratory habits of birds.

Again, among mammals and among fishes we find abundant testimony to this habit, and especially in reference to the latter. Those person residing on or near the Susquehanna river, in our own county, are well aware of the upward migrations of the adult shad in the spring, and the downward migrations of the young shad in the fall. The seine fisheries, for a long series of years, have proved the former, and the fish pots, or "baskets," have borne lamentable evidence of the latter. This has also been evinced to a considerable degree in regard to rock-fish, carp, several species of perch, and last, not least, the eels; but in this last instance the migratory periods are reversed—that is, eels migrate towards the head-waters of the streams when they are young—from three to six inches in length—and in the late spring; and migrate downstream, in the adult state, in the fall. Both of these positions have been established by testimony as incontrovertible as that relating to shad, although it has some exceptionable or modifying phases. But then, it will be observed, in both of these cases, that it is not the same individuals that go and return again in either case, in which they greatly differ from migratory birds.

As to mammals, from our early boyhood we were impressed with the stories of the western migrations of squirrels, and especially in the States of Ohio and Indiana. These occurrences were frequent for a long series of years afterwards—the squirrels even swimming across the Ohio and other rivers in passing from one locality to another. These animals were not only a nuisance, but...
THE LANCAS TER FARMER.

But, perhaps, the more marked insect migrations have been among the diurnal Lepidoptera—Butterflies. In our very first entomological readings, our textbooks were impressed with the extraordinary migrations of the "Painted Lady Butterfly," (Vanessa cardui) from the continent into England across the straits of Dover. If we have not this identical insect in this country, we have one so near like it as to be indistinguishable and it is just as likely to have migrated hither by various stages, as to have been brought here by other means, and it is now almost a cosmopolitan. But, our own "Milk-weed," or "Wild-cotton," butterfly, (Donnis archippus), is a more familiar example of these migratory things than that is yet been recorded, for according to papers published in the Causalion, and also in the American Entomologist, these butterflies have gathered together in large flocks and have migrated to Florida, where the trees have been "literally festooned" with them. And this is the more curious from the fact that there is far less milkweed there than there is in the valley of the Mississippi, from whence they departed. Of course the milkweed is of no account to them as a butterfly, (only the larva feeding on it) and therefore they must instinctively have gone South, as a safe place of hibernation. Except a very few straggling, gravid females, they never get back again to their native valley, and it is questionable if ever these do personally, therefore their migrations differ from that of birds.

THE WHEAT CROP OF 1882.

Luck—Good Management—Manure.

Our last wheat crop was one of the best we have had for many years; the yield was from 15 all the way up to 40 bushels per acre, averaging about 27 bushels for the entire county. Those persons who fed their corn into stock cattle, or bought stable manure, brought from Philadelphia or Pittsburgh, got their 40 bushels from the acre; and those who kept on farming in the old way, pasturing close in the summer and feeding no cattle in the winter, were the ones who got only from 15 to 20 bushels to the acre. Feeding and making stock cattle fat depends a great deal on good judgment in buying and selling, and requires the best attention during the winter season.

Last spring will be long remembered as an extraordinary one for both good and bad luck in fattening cattle. Cattle were bought in the fall of 1881 for from 3 to 5 cents per pound. For 5 cents you could buy steers nearly fat, weighing from 1,000 to 1,500 pounds. In the early part of 1882 small calves were sold, when fat, at from 4 to 5 cents per pound, and gradually advanced in price until June, when the best brought from 8 to 9 cents per pound. Farmers got well paid for their corn, realizing, according to good luck, from 50 cents up to 80 20 per bushel.

Farming is like everything else. "Whatever is worth doing is all worth doing well," hence the success of farming depends largely, and in many cases entirely on good management. I have a neighbor who has a forty acre farm, and he feeds five or six steers, and he yearly gets as much as 400 bushels of wheat from 12 acres. He also sells from $300 to $400 worth of tobacco from his place, and is improving it all the time, but he is one of the "go boys" farmers, and they are generally among the unsuccessful.

Our lands will be made to increase in fertility and value, through our cattle feeding, and from manures brought from the cities of Philadelphia and Pittsburg, or elsewhere, when we have not a sufficient supply of our own making.

A good coating of barnyard manure will make a good crop of wheat, and will be followed by a good crop of grass and corn. I am strongly in favor of enriching our soil with barnyard manure in large quantities, as it is the most stable manure than in all your forcing fertilizers, and lime thrown into the bargain.

Cattle and corn are both high in price, and things may look a little demoralized just now, and if beef should fall as suddenly as it rose then there may be some danger of small profits in feeding stock. Our compensation will then be in the manure.—L. S. B., Oregon, Sept., 1882.

[We have taken the liberty to italicise the words "luck" and "good management" in our contributor's otherwise excellent paper, because it seems to involve a contradiction. It seems that good luck depend on good management? If so, then the converse must be covered by a similar rule or its absence.]

TOBACCO WORMS—CURIOS FACTS CONCERNING THEM.

We have before us a large specimen of a green "Horn worm"—two inches and a half long, and an inch and a half in circumference—which was brought to us as a "great curiosity." It is wonderful that the phenomenon which we shall attempt to describe should be still regarded as a great curiosity, especially since we first noticed it fully forty years ago, and hardly a year has passed since then in which we have not noticed it, and often have seen them in 4 or 5 thousand masses. This worm is the larva of one of the great "Hawk-moths," or "Humming Bird Moths," known to entomologists under the names of Macrosara carolina or quepinge maculata—two species that have a close specific alliance, and the larvae of both of which feed upon the tobacco plant; also, upon the tomato, potato and egg plants, and perhaps on other solanaceous vegetation. Before the introduction of the tobacco plant so generally in the county of Lancaster, we found this worm usually on the potato or tomato plants. The moths can easily be distinguished, the female being a dark brown and lighter in color than the last named, but the larve to us, at least, are not readily distinguishable.

Perhaps the curiosity did not consist so much in the worm itself, as in the fact that it was covered over its entire body—except the underpart—from the head to the very last segment, almost hiding the posterior horn, with a compact coating of small white spindle-shaped cocoons, resembling small grains of rice attached to the skin of the worm by one end, and so close together that the body of the worm could not be seen between them. We had never seen so many on one worm before, and we were astonished that the host
possessed so much vitality under such depleting circumstances. The worm was brought to us, with a part of the tomato plant on which it was found, on the 1st of August, and about the turning of the 12th month the cocoons were delicately cut off at the upper ends and fully three hundred small four-winged flies had issued forth, and were vainly trying to make their escape from the glass jar in which we had confined the worm. The worm still continued to crawl over the plant but was evidently much weakened. It seemed also to be annoyed by the pressure of the flies, and feebly struck about with both ends, as though it desired to get rid of something very disagreeable.

The worm belongs to the cephaloscerarian family Megaloptera (Twilight-dying moths) and the little four-winged flies belong to their parasitic Hymenoptera, of which there is a very large family (Ichneumonidae)—the Microgaster congregeta, or a specific closely allied. Supposing the worm to be about dying we attacked it a cork and suspended it in a small jar of alcohol; and, although it suffered us to run a needle and thread through its head, and by a similar process attach a small leaden weight to its tail, with almost entire impunity, yet, when we suspended it in the alcohol, it writhed vigorously for five minutes, and during that time the exuviae of the flies from the thoracic segments. The worm and all the flies are carefully preserved in alcohol. There cannot be much less than three hundred and fifty of them, but we shall base our estimates on the round number of three hundred in our remarks. This phenomenon surely furnishes food for practical reflection in its connection with insect economy. Suppose this worm to have been a female, which, had she developed the moth, would have been able to have deposited at least three hundred eggs (on one occasion we counted more than that number) the possibilities, therefore, existed to have reproduced three hundred horn-worms at least. Now, we will suppose that one-hundred of that number would have been females endowed with the same reproductive powers, and the result would have possibly been an increase of forty-five thousand horn-worms for next season, and all the legacy of a single worm. Perhaps out of these forty-five thousand not five thousand would have fallen victims to the most efficient remedies, nor yet that number have reached maturity. What then would have become of the other thirty thousand. Let us see. It would be going too far beyond the scope of this section to attempt a table of the possible results of one-hal of the parasites would have been females, for the females among these insects always greatly exceed the males in number—a hundred, a thousand, and often ten thousand and one. This has especially been the case among the gregarious gall-insects which are parasitic on plants. Out of these three hundred little Microgasters we must, therefore, claim two hundred and seventy females at least, capable of reproducing eighty-one thousand and parasitical enemies to the three hundred horn-worms, or over seven millions against the three hundred horn-worms, perhaps not as probabilities, but as ultimate possibilities, all other things being equal.

Now, we advise tobacco-growers, gardeners, fruit-growers and agriculturists in general, that, whenever they discover a horn-worm, or any other kind of worm, infested with these or similar parasites, they severely let it alone, and allow it to live. There is not a single kind of worm ever doing any further damage, and by crushing them or trampling them under foot, they may be only destroying a multitude of little insect friends.

During the past forty years we have had at least one hundred worms of different kinds infested by parasites brought under our observation, and we never knew a single instance in which any of them survived. All eventually perished. Therefore, the wisest economy is not to disturb them, but to permit the parasites to develop, and when developed they will find another object of their little work that will serve to nidus for future generations. They will find those, perhaps, that eluded the utmost vigilance of the tobacco cultivators, who generally relax their watchfulness as soon as the crop is harvested, after which hundreds of worms, left in the field, are permitted to mature and go into winter pupation in the ground. Should any of these late worms go into the ground, carrying in their bodies the eggs or immature larvae of the parasites, although they might be able to effect their pupal transformations, yet the moths will never be evolved.

Now, we have opened the tough follicle of the "sack worm" (Thysanoptera cpenhcnformis) on several occasions, that the inner cavity was packed nearly full of the small cocoons of a hymenopterous parasite. Now, no bird can dislodge the larva of this insect from its strong cocoon, which it always carries with it wherever it goes. We have seen both chickens and birds attempt it, but they always have abandoned it without accomplishing their object. But it seems these parasites can circumvent those almost otherwise unapproachable worms, which affords ample illustration of the superiority of parasitic infestation over all other known remedies, either natural or artificial. Of course, there are different genera and different species even among those that affect worms in a similar manner. Those before us now constructed white cotton-like cocoons, but there are others more silky. They are, however, not all white; some are different shades of yellow, some drab-colored, and some brown.

Of course, in one sense, parasitic infestations may be classed among natural remedies, but in this paper we wish them understood as entirely distinct. Natural remedies may therefore be interpreted to mean those animals that naturally or incidentally feed on insects themselves or provide them for their young—such, for instance, as birds, poultry, skunks, moles, swine, etc., and may also include such predaeceous insects as capture or feed upon other insects for their own sustenance, such, for instance, as dragon-flies, tiger-beetles, wheel bugs, horn-flies, caddis and many others. But all these are either parasodic or indiscriminate, or both, in their antagonism to the insect world. They destroy friendly and innocuous insects, as well as those that are noxious, and some of them only devour insects when they can obtain nothing better; others survive only for a long season and overwinter, and are generally only applied when the enemies of vegetation have been augmented and have become destructive.

The remedy is then liable to be applied at the wrong time and place, or the quality of the remedies ever amount to anything, or the quantity may be excessive or insufficient, or it may not come in contact with the subjects intended to be destroyed. Many people use a remedy as a patient takes a pill—shuts his eyes, swallows it at random, and then lets it work its way through the stomach and bowels as best it may. We by no means intend to disparage either natural or artificial remedies, for often contingencies arise when it is absolutely necessary to do something, and that promptly, too, in order to rescue a crop from destruction; but when the evil is overwhelmingly present, it is very seldom that artificial remedies ever amount to anything. The Chinch Bug, the Rocky Mountain Grass-hopper and the Colorado Potato Beetle have not been exterminated beyond a peradventure, and may become abundant whenever meteorological and other combinations are favorable.
Thus, the silent work of nature is ever per-
tinaciously working onward towards its ut-
imate ends. It may be, and often is, thwarted,
partially defeated, or turned aside from its
legitimate purposes by contingent inter-
ventions; but when its freedom is restored it
will gradually converge towards its accustomed
channel. Perhaps the future en-
counter no greater barriers to their harmoni-
ous development than those imposed through
human ignorance. Many years ago we noticed
a man in a "potato-patch" with his kowos
knit and his lips compressed running along the
rows, and engaged in a most vigorous
magnification. Curious to know upon what he was
exercising himself, we drew near him, and as
we approached he assumed an attitude of triumph,
exclaiming: "There, I have just smashed the
last d — ladybug in the patch." When we
desired to know his reasons for smashing
them, he replied that they laid the eggs from
which the plant heek; for his potato vines
were seriously infested by a species of Aphids.
He did not trouble himself about the Aphids
—there were too many of them—but felt sure
that they would not long survive their pro-
genitors. Our adverse views had no effect
whatsoever; he knew all about them; he was
raised among them. Now, the "lady-birds"
( 
Coccinellides) are so distinctly the enemies of
the Aphids that the group including them is
called Aphidilus—"aphid-eaters." Manual
effort alone will not accomplish the destruct-
ion of noxious insects; it must be intelligent
effort, discriminating effort, persevering effort;
the intelligence, the discrimination, and the
reservoir of the little microorganize, which is
the joint subject of these reflections.

The progress of improvement on the earth's surface
may necessarily disturb the equipoise of na-
ture, and where this is the case, it will im-
pose additional vigilance, additional labor,
and additional intelligence, in order to insure
additional compensation. In the matter of
willing and doing, it is of some moment that
we know what not to will and do, else we may
be standing in the light, and knowing what not
to do is a progressive step towards
knowing what we ought to do.

EXCERPTS.

Boiling water will remove tea stains and
many fruit stains; pour the water through
the stain, and thus prevent it from spreading
over the fabric.

Ripe tomatoes will remove ink and other
stains from white cloth; also from the hands.

A TRASHSOMEFUL of turpentine, boiled with
white clothes, will aid the whitening process.

Boiled starch is much improved by the
addition of a little spermaceti, or a little salt,
or a little gum arabic dissolved.

Bee's wax and salt will make fritalions as
clean and smooth as glass; tie a lump of wax
in a bag, and keep it for that purpose; when
the iron is hot rub them with a rag, and
then scour with a paper or rag sprinkled with
salt.

KEROKEE will make tin tea-keetlees as
bright as new ; saturate a wooded rag and rub
with it; it will also remove stains from clean
varnished furniture.

KEROKEE will soften boots or shoes which
have been hardened by water, and render
them pliable as when new.

Agriculture is the financial barometer of
the United States.—London Paper.

We would not advise the sowing of white
clover in lawns. It exterminates other grases and does not stand heat drought.

Give the laboring class 10 or even 12 hours
work a day, with plenty or good newspapers
and no strong drink, and the country will
soon become prosperous and its men
enlightened.

The value of poultry in the United States
amounts to over $300,000,000. This large
sum would be increased if poultry received
the same attention as is bestowed on sheep,
cattle or horses.

The winter wheat crop of Illinois this year
exceeds 30,000,000 bushels, and it is the
largest crop that has been grown in that State.
The spring wheat aggregates over 52,000,000
bushels, a little under the average of 1879, but the quality is much
better.

The Herefords in the London market are
always worth more per pound than Short-
horns. We supposed that the Short-horn editors and advocates had concedled this fact,
but in conversation with a prominent editor
a few days since he denied it was true. If
he will place this in some direct and positive
form we will produce the proof of it, and
will offer this much now. The Chamber of Agri-
culture Journal, in its issue of June 19th,
speaking of the Smithfield market of London,
says: "The Herefords range with Scott catt-
te at 5s. 10d. to 6s. as the topping current
rate of the morning trade, the Hereford catt-
le ranging up to 5s. 8d. to 5s. 10d. These
prices are for the stone of eight pounds weight.
The Canadians sold at 5s. 4d. to 5s. 8d.; Dan-
ish at 5s. 4d. to 5s. 6d." The editor he
referred to has all the means at his disposal to
inform himself, and he ought to know that
Hereford beef is always at the top of the
market, and that this is especially true with the Herefords from grass.

There are but few circumstances that will
justify the burning of straw as it comes from
the machine. Upon all uplands, or soils
inclined to be light, and which are deficient in
vegetable mold, it is better to rot the straw
and apply the same to the most unpromising
ports. Where the soil is of a heavy clay
character, and fall plowing can be done for
the growing of a crop the following summer,
the plowing under of a heavy coating of straw
will render the soil lighter by reasons of the
drainage afforded, and richer by the partial
decay of the straw. Occasionally it may be
of advantage to burn the straw, especially if
weed seeds or the eggs and larvae of insects
are unusually abundant. Consider the matter
well before burning the straw, for when rotted
it forms a rich mould, which is the "one thing
needful" on all our clay uplands, East, West,
North and South.

The Mexican Dog.—Of the hairless Mexi-
can dog, which is the shepherd dog of that
country, the Teens Siftings has this to say:
THE MEXICANS call him pelon, the Americans refer to him as no-hair dog, while the stranger from the North who sees him for the first time calls him a cast-iron dog, for that is what he looks like at first glance. Although not particularly intelligent the no-hair dog is susceptible of a high polish, for his hairless hide shines in the sun as if it had been recently touched up with stove-polish. This body is about the size and somewhat the shape of a watermelon—that is, of one of those small watermelons that is about the size of a pelon dog. He differs, however, from the melon in that his tail is adorned with a tuft of blonde hair, which is never the case with a watermelon. He wears a tuft of hair—a further tuft of course, not the same one at all—on his head, which gives him a very striking appearance. The pelon dog is found in Austin, in San Antonio, and in tamales, the latter being a Mexican dish, the ingredients of which are as uncertain as those of lasagna.

WHY 1900 IS NOT A LEAP YEAR.—The year 1900, although it is divisible by 4 without a remainder, is not a leap year, and it comes about in this way: Under the “Julian period” the solar year was considered to consist of three hundred and sixty-five days and a quarter of a day, but as the actual or civil year could not be made to include a quarter of a day, an additional day was inserted in the calendar every fourth year to make up for four lost quarters, and this is the 29th of February. But the Julian method of intercalation made the year too long by eleven minutes, ten and one-third seconds. This out the calendar for all of solar time one day in 129 years; so to balance this, in the adjustment of the calendar known as the “Gregorian” after Pope Gregory the XIII., now universally adopted in Christian countries except Russia, one of the leap years is dropped at the close of every century, except when the figures of the centurial year, leaving out — the two cyphers at the end, can be divided by four without a remainder. Thus 1900 was a leap year, and 2000 will be, but 1700, 1800 and 1900 are not.

CONTRIBUTIONS.

FOR THE LANCASHTER FARMER.

THE EEL—ITS HABITS AND GROWTH.

The following sketch on the habits and growth of the eel, has been prepared from an article on “Eels and Eel-s sets” which appeared in the January number of Blackwood’s Magazine. As the article was too lengthy for publication in the New Era, it was very much cut down, and only the part relating to their habits and mode of reproduction are given:

The eel has puzzled many naturalists, and is destined to puzzle many more. As to the natural history of the eel, many naturalists generally agree that there are three sorts indigenous to this country (England) namely, the sharp-nosed or silver-bellied eel, the grig or surg, and the broad-nosed eel.

The grig is a yellowish eel with a projecting under-jaw; the broad-nosed eel is stated to be an uglier-looking eel, with a broader head, and, according to Pennell, fierce and voracious in its habits; while the silver-bellied eel is a firm, fine-flavored eel, with a dark, almost black back, a silvery belly, and a fine sharp head. This is the eel which migrates seaward in the autumn, and is the eel by which celery-sellers live.

Mr. Pinkerton says the grand distinction between the sharp-nosed and broad-nosed eel is, that the sharp-nosed species is a migratory fish while the other is not. He admits that the latter has its summer and winter quarters, for eels are very susceptible of the effects of cold and electricity, and it wanders about a good deal at night, in search of prey; but it does not migrate to the sea in large schools, as the sharp-nosed species usually does. It is about the middle of autumn that the annual migration commences, the eels moving in the night, and always choosing by a stranger to plow deep around the apple trees in his fine young orchard, if he wanted to see the trees prosper well. He did so, ripping up the roots on both sides of the trees effectually, leaving very few untouched. The result was that none of the trees died and all the rest suffered for several years from want of succors in the ground. It took about three years before the orchard recovered from the injury. The farmer was very much vexed at his own folly for following the advice of that wiscare.—J. F. W.

NOT THE TARIFF QUESTION.

FOR THE LANCASHTER FARMER.

My respected opponent, P. S. R., writing in the last number of The Farmer, while professing to answer my communication in the July number, gets entirely away from the question we were discussing and favors us with an essay on “The Tariff”—a subject that has no necessary connection with the one at issue between us, and enters upon new ground where I feel no call to follow him. The only question was respecting the so-called Balance of Trade. My opponent assumed that if in trading with other countries we import more value than we export it was proof of a balance against us and that we were doing a losing business. This I denied, and gave my reasons for my opinion—reasons which it is unnecessary to inform those who have read both articles, Mr. R. has not even attempted to confute.—J. F. P., Lancaster Sept. 8, 1882.
The Lancaster Farmer.

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It is only at the first obstacles on the rivers Yare and Bure—the flowing mills on the upper reaches—that the eels are ever noticed; and here they appear in large numbers. In the "New Mills" in the city of Norwich is a building which completely spans the stream. There are brick walls on each side of the river, and no means of access save through the sluices, and by the herring that have, by local fishers, come to the river and its tributaries. Here the tiny eels force their way in countless thousands, wriggling through every crevice, on their upward march. But it is positively stated that not all adults ever ascend, yet between "haly harvest" and November the eels descend in thousands, and of all sizes. Now, although the silver-bellied eel is undoubtedly a fast grower, yet eels of the size caught in the nets at the New Mills must be several years old, and must have passed all their days, since hatching, above the mills. Can it then be reasonably supposed that these eels have passed so much of their lives without procreation of their species? This can scarcely be; and it is therefore a fair conclusion that the procreation of a large number of eels takes place in fresh water. This leads then to the question, What is the object of the yearly migration of the silver-bellied eel? If the above suggestions are correct, it cannot be for breeding purposes alone; and it is more than probable that, as eels multiply as fast as other fish and probably grow faster, and as they bring forth their young alive, and are not subject to so many chances of destruction as the spawn of other fish; their migration is not only a large that the rivers must get over-crowded. Therefore each year a certain portion "swarms" off and is lost in the sea.

It will have been noticed that the eel has been alluded to as being viviparous. Naturalists affirm that the eel deposits in spawn as other fish do, and state that the microscope reveals the presence of spawn and milt in the eel. This is so much opposed to all the statements and experience of eel-fishers and eelsetters that it cannot be accepted as a fact, and after listening to so many eel-fishers who have constantly opened eels in February, we have been full of minute living eels (not parasites), and that in a tub of eels young ones have been found in the morning that were not there over night, we strongly lean to the theory that eels are viviparous.

The young fry are contained in a membranous sae, as long and thick as one's finger, and eyes and back-bones of the fry are distinguishable. When the sae is cut open, the fry unbend themselves and wriggle about. Pals are found in this State during February, March, and April.

Selections.

A grand harvest.

From all parts of the country we have continuous reports of the abundance of nearly or quite all the staple crops produced by our agriculture. Not only is the prospect good, but the receipts at the leading commercial centres of the seaboard and the West far exceed those of last year at the corresponding periods. What is still more remarkable is the fact that the European harvests are rather short, especially those in the British Isles; while the troubles in Ireland interfere very sadly with the harvest there, and the Egyptian war threatens that country with famine. Thus financiers and speculators appear at the present time to agree in regarding the condition of things commercially as highly favorable to another large increase of the balance of trade. It is evident to the public in her commerce with the world at large, that nominally this balance has still been in our favor during the whole of the year, notwithstanding the shortness of the crops of last season; but nevertheless, the current of gold turned towards Europe and has caused as a net loss of at least $229,000,000 of our stock of gold; while at the time our foreign debt has again been increasing in consequence of the enormous railway building movement in this country, and the excessive demand for large loans of money for that purpose abroad and at home.

But it is now considered quite probable that the American harvest will be so vast as to stimulate a tremendous export trade in all our food-products and agricultural staples, and thus to compel the European bankers to make exchange either by shipment of gold hither or by the return of masses of American stocks and bonds. These alternative would be quite acceptable to the country, for although the gold would of course be preferred, as under all circumstances the best and most substantial consideration, yet the liquidation of the foreign debt is the greatest possible deterrent known to American finance.

It will be perceived that the prospect is wholly due to the blessings of Providence upon the labors of our husbandmen in those arts which some political economists have foolishly discouraged as fit only for barbarians. We have several times spoken of last year's crops as having been unusually short, but we must beg our readers to bear in mind that those crops supplied all the wants of our own people with a large margin for export and a considerable surplus to carry us safely through the year until the new harvest of the present season could be garnered. We consider this as a remarkable illustration of the safety of this country from the dangers of famine, since it was precisely a similar state of affairs which in 1850 forced France to ship to the United States $100,000,000 in gold to buy food to supply the deficiencies of her own crops. — Germantown Telegraph.

Occupation and Longevity.

"Woe to them that are at ease!" says Carlyle, but his anathema does not prevent the English village parson from outriving every other class of his countrymen, not excepting the British farmer, whose peace of mind cannot always be reconciled with high rents and the high price of American wheat. Where agriculture is what it would be—a contract between man and nature, in the United States, in Australia, and in some parts of Switzerland—the plow follow is the straightforward road to longevity; in Canada where nature is rather a hard taskmaster, the probabilities are in favor of such half-indoors trades as carpentering and certain branches of horticulture—summer farming as the Germans call it. Cold is an antiseptic, and the best habitation,
but by no means a panacea, and the warmest climate on earth is out and out preferable even to the border lands of the polar zone. The average Arab outlives the average Englishman in full five years.

The hygienic benefit of sea voyages, too, has been amazingly exaggerated. Seafaring is not conducive to longevity; the advantage of the exercise in the rigging is more than outweighed by the illuvia of the cockpit, by the pickle diet, the unnatural motion and the foul weather, and, from a sanitary standpoint, the sea air itself is hardly preferable to mountain and woodland air. The coozon may have been a marine product, but our Pilgrime ancestor was probably a forest creature.

"For what length of time would you undertake to warrant the health of a seaman?" Vanhagen asked a Dutch marine doctor.

"That depends on the length of his furleigh," replied the frank Hollander, and it will require centuries of reform to redeem our cities from the odium of a similar reproach. In victuals and vitality towns consume the hoarded stores of the country, and only the garden suburbs of a few North American cities are hygienically self-supporting. Perman-ent in-door work is slow suicide, and between the various shop-trades and sedentary occupations the difference in this respect is only of degree. Factories stand at the bottom of the scale, and the dust and vapor generating ones below zero; the weaver's chances to reach the average age of his species have to be expressed by a negative quantity. In France, where the tabulation of comparative statistics is carried further than anywhere else, the healthfulness of the principal town trades has been ascertained to decrease in the following order: Housebuilding, huck-"stering, hot-bed gardening (dorists), carpenter and brick mason trades, street paving, street cleaning, sewer-cleaning, blacksmiths, arti-sansmiths (silver, copper and tin concerns), shoemaking, glass-blowing, tailor, butcher, housepainter, baker, cook, stonemasons and lapidaries, operatives of paint and lead trades, weavers, steel grinders—the wide difference between brick and stonemasons being due to the lung-investing dust of lapidary work, which, though an outdoor occupation, is nearly as unhealthy as steel grinding. Lead paint makers have to alternate their work with jobs in the tin shop, and after all can rarely stand it for more than fifteen years. Needle-grinders generally succumb after twelve or fourteen years.—Popular Science Monthly.

THE WAR IN EGYPT.

The prospect of a speedy termination of the Egyptian difficulty does not improve. Indeed, it looks now as though England has on hand a serious war which is not likely to be brief, even if no general European complication arises from it.

Meantime the industries of Egypt are grievously deranged; trade is at a stand-still, and all manufacturing operations are suspended, and agriculture is largely interrupted. The geographical and the social characteristics of Egypt are peculiar, and of such a nature that war affects the country far more disastrously than would be possible in any other land.

The Europeans who have been driven out furnished most of the capital for all commercial and industrial enterprises, filled most of the positions requiring scientific knowledge or mechanical skill, and controlled the majority of the means for making productive and profitable the labor of the native masses. In their absence a speedy revival of prosperity is impossible, even if the war should end at once.

Within the past twenty years the agricultural products of Egypt have been nearly trebled by means of the capital and machinery introduced from Europe. The irrigation and consequent cultivation of vast areas of sugar and cotton and corn land have been made possible by the introduction of steam pumps and other modern irrigation machinery. Were the natives able to operate such machinery they cannot now do so for lack of coal, and so to a serious extent they cannot produce the crops on which their prosperity depends.

The cotton-ginning factories and steam-presses, by means or which the cotton crop of Egypt has been made fit for profitable exportation, were introduced by Europeans and largely operated by them. The same is true of the sugar mills and the railways and other means of rapid and economical transportation. The natives themselves are incapable of operating the railways or of conducting an export trade, were such trade possible in Egypt, in time of war. As a consequence the gathered crops are lying in the interior unsold; cultivation is largely suspended and thousands of native workpeople are threatened with starvation.

The commercial and industrial arrangements incident to the war are not confined to Egypt. Even if no harm befals the Suez Canal, and there is no suspension of traffic through it, England cannot but suffer severely, though indirectly, in her commercial and manufacturing interests.

Fully two-thirds of the cotton crop of Egypt, averaging 290,000,000 pounds, has hitherto gone to England. In the Bolton district alone 5,000,000 spindles are employed on Egyptian cotton; and in the whole of England some 23,000 work people are employed upon this staple. The stoppage of the supply cannot but affect them disastrously.

The large dependence of English industry upon Egyptian products is further illustrated in the case of cotton-seed, about 9,000,000 worth of which is imported annually. Last year Hull alone took 120,000 tons, and in its crushing 2,500 barks were employed for years. Still more serious will be the effect of the stoppage of the supply of Egyptian cotton seed upon English agriculturists, who depend very largely upon cotton-seed oil for feeding their cattle. The English soap boilers use about 50,000 tons of Egyptian cotton-seed oil a year, and must likewise severely feel a cutting off of the supply from that region. England also draws from Egypt annually $6,000,000 or $7,000,000 worth of wheat and beans, $3,000,000 worth of sugar, and more than $2,000,000 worth of wool, ivory, guns, and other native products.

In return for all these, Egypt has taken manufactured goods, machinery, coal, and cotton fabrics, the producers of which cannot but lose heavily by the ruin which has fallen upon Egypt.

How far these English losses will react upon American trade it is impossible to foresee. The deficiency in cotton and cotton goods can be made good from this side, but it is doubtful if any marked advantage will accrue to American producers unless the war should involve other powers than Egypt and Great Britain.

The first effect anticipated by our shipping merchants is an advance on ocean freight and in marine insurance, through the withdrawal of first-class steamers for transport service to the seat of war, and the substitution for them of second and third-class freighters in the regular carrying trade.—Scientific American.

THE CLIMATE IN DIFFERENT PARTS OF THE UNION.

Figures gleaned from the observation points of forty-nine States and Territories show that the hottest places in the Union are Florida, Louisiana and Arizona, the mean annual temperature of which is 69. Texas ranks next at 67, Alabama 66, Mississippi 64, Arkansas 65, South Carolina 62, Indian Territory 60, North Carolina 59, Georgia and Tennessee stand on a par at 58, Virginia 57, Kentucky 56. The mean temperature of 56 prevails in California, Missouri and the district of Columbia; 54 in Maryland and Pennsylvania, 53 in Delaware, Ohio and Vermont; 52 in Idaho, Utah and West Virginia. 51 in Indiana, Kansas, New Mexico and Washington Territory; 50 in Connecticut, Illinois Nevada and New Jersey; 49 in Iowa and Nebraska; Massachusetts ranks with Rhode Island, New York and Colorado at 48; Michigan and Dakota are equal at 47. Alaska is not the coldest part of the Union, as is commonly supposed, but stands with New Hampshire at 46; colder than these are Maine and Wisconsin at 45, Montana and Vermont at 43, Minnesota at 42, and coldest of all Wyoming at 41.

PURE AND WHOLESALE.

Nearly all the American cotton seed oil shipped to Europe is christened "olive" oil, and re-exported to this country, where we consume it with the greatest gusto, as "real extra Lucern." This suggests to our mills the importance of securing a market here at home, where they can sell their oil to much greater advantage, since they will not have to pay double freight to Marseilles and back. Our people have been putting cotton seed oil into the market for many years; and it is time we took advantage of this practice any longer? Why not confess what is well known—that cotton seed oil is not like olive oil and no nearer a genuine olive-oil than is a man with a heart in his right hand—another matter—because as good and as pure as the product of Italy in every respect? It is true that when we first began to manufacture it many persons pretended to find about it a somewhat bitter taste. But this taste has latterly been completely eradicated, and now our factories turn out as fine a salad oil, and chemically and gastronomically exactly the same as the best farms of Tuscany and Lucca. This oil should supplant lard in the Southern household; it is clearer, better, cheaper and in every way superior to lard. Its use instead of lard has be-
chased artificial manures than the sum which the tenant, under the above system of cultivation, pays for them in rent, and indeed, as far as regards the production of the crop, the landowner sells his fertilizer cheaper than the manufacturer of manure could supply it.

The principle that underlies this statement, starting as it may appear, applies with twofold force to successful farm practice in this country.

On the average American farm, with its cheaper land, and soils that have been under cultivation for a comparatively short time, the natural stores of fertility that have been accumulated in past ages must be the leading element in determining the profits of grain production at low prices; and when this natural source of profitable cultivation is properly reinforced with the barn-yard manure that can readily be made, under a fairly good system of management, to retard and diminish the exhaustion that is unavoidable in a paying system of husbandry, the commercial fertilizers, which are too often urged upon farmers as the essential basis of good farming will find their true place as supplemental manures that are desirable for special purposes.

Aside from the fact that barn-yard manure is a complete fertilizer, supplying, as it does, the potash, phosphoric acid, and nitrogen, which are considered the only valuable constituents of purchased manures, it seems to have a specific action on the soil that cannot be obtained with any combination of chemical fertilizers.

In the Rothstein experiments with drainage waters, from the plots which had been under continuous cultivation with the same crop for more than thirty years, it was observed that "whilst the pipe-drains from every one of the other plots in the experimental wheat-field run freely, perhaps four or five times or more annually, the drain from the dunged plot seldom runs at all more than once a year, and in some seasons not at all."

Dr. Voeler remarks that "this result is interesting and important, for it illustrates in a striking manner the beneficial effects of barn-yard manure on the soil in ameliorating its texture, and, generally speaking, its mechanical or physical condition, in consequence of which the growing crops will suffer less during seasons of drought."

After a careful investigation as to the causes of the small discharge of water by the drain of the dunged plot, Drs. Lawes and Gilbert concluded that "the result was due to the greater power of absorption and retention of moisture by the dunged soil near the surface."

The power of retaining a large amount of moisture, in an available form, and without making the soil wet, seems, therefore, to be increased by the application of barn-yard manure, and this, with the increased porosity which renders the water of the lower strata of soil available for plant growth, explains the greater immunity of manured land from the effects of excessively dry or wet seasons.

The advantages of the barn-yard manure, under the unfavorable conditions of a wet, backward spring, followed by a severe drought, were decidedly marked in the crop of 1881 throughout the entire season.

From the first appearance of the plants above the surface to the time of harvest, the barn-yard manure plots could be distinctly distinguished, even at a distance, by the vigorous and rapid growth of the crop, and when the tassels and ears were forming, the stalks were not only much larger, but they gave indication of a nature development that was not observed in the other plots.—Mainly Miles, Houghton Farm.

PREPARING FENCE POSTS.

Several plans have been tried for increasing the natural durability of the poplar, elms, etc., when used for posts.

Of these, the most effective has been immersing them in hot coal tar, where they are kept at a boiling temperature for thirty or forty minutes. Vats are used for the work built on the principle of the old sorghum evaporators. The posts are put in and taken out of the hot tar with large nippers made for the purpose.

Pots of willow, cottonwood, white elm, etc., thus treated have proven more durable than white oak posts set green. With the cottonwood it has been found that the tar would penetrate into the pores of the wood better when green than after they become dry.

It has been also found that elm boards were very strong, durable and free from warping when treated to a bath of the boiling gas-tar.—Western Farmer.

SOME WHEAT STATISTICS.

It is to be regretted that a journal of such good standing as Bradstreet's should fall into such errors regarding wheat statistics as are to be found in its last issue. Commenting on wheat, Bradstreet's says:

"Two years ago, on August 1, 1880, it was estimated that there were 50,000,000 bales of wheat left out of the crop of 1879; add to this the large crop of 1880, which was stated by the Agricultural department at 130,000,000 bushels, and the crop of 1881, which may be estimated at not over 400,000,000 bushels—giving a total supply of 940,000,000 bushels of wheat for two years to the meager consumption of 1880 and 1881, and yet it was recorded in the form of wheat and wheat flour in the year to July 1, 1881, 105,828,351 bushels of wheat, and in the year to July 1, 1882, 121,923,346 bushels of wheat, making a total of 329,351,876 bushels."

On August 1, 1882, there was practically no wheat of the old crop left in the country; consequently the balance over what was exported was consumed, say, 619,486,173 bushels, or at the rate of, say, 320,000,000, which, with an increasing population both by immigration and natural increase, would probably require 340,000,000 for the year ending August 1, 1883.

The estimate of 50,000,000 old stock on hand August 1, 1880, is too much high, as it was a noticeable fact that stocks of old wheat were at that date unusually small. Instead of the crop of 1880 being 400,000,000 bushels it was 80,000,000 bushels large, while the crop of 1881 was 350,000,000 bushels, or 20,000,000 bushels less than Bradstreet's figures. For the year ending July 1, 1881, we exported of wheat and flour 181,321,494 bushels, or 12,000,000 bushels less than what Bradstreet's gives. In speaking of the stock on hand in 1880 and 1882, Bradstreet takes August 1 as the date, but when giving the exports it uses the fiscal year ending July 1 or rather June.
There are so very many plans given for catching the queen that the operation has become so simplified that it can easily be accomplished... is necessary to look all over the combs in every corner of the hive to find the queen, but you can easily locate her upon a comb, in any part of the hive. This is not done by inserting combs of honey from the cells but is fed by the bees—but by giving her an opportunity to deposit eggs without disturbance, especially drone eggs, which occupation best pleases her majesty. For this purpose choose empty brood-combs, or such as are partially filled, for the queen will be in haste to occupy all space and fill these cells with eggs in order to avoid the colony becoming starved. If the hive in twenty-four hours, without the creating disturbance, you will, in nearly every instance, find the queen on this comb.

To get a queen out of a box hive, about the only way is to drum the bees out and allow the queen to pass out with them. There will be no difficulty in discovering an Italian queen from her golden color, for she excels the worker bees in brightness. The astronomer does not have to search the heavens when seeking Venus, Jupiter, or Mars, for they so far surpass the surrounding planets in brilliancy that they catch the eye at a glance. No one would have a trouble in finding an Italian queen, and in queen-carrying this is quite an object. After the queen is captured and the colony becomes fully aware of its loss, the bees will build queen cells and rear a successor. We may also expect some "after swarms," and the first one will probably appear in about fourteen days, the time being varied by the strength of the colony.

But to those bee-keepers who are not seeking an increase of colonies but rather depend upon the honey harvested for their profits, the method we have given would be of no value. Such bee-keepers must immediately place a young queen in the colony from which the queen has been removed, in order to prevent after swarming and cause as little disturbance among the honey gatherers as possible. The new queen must be caged at least 24 hours, when introduced; some prefer placing a queen cell in the hive that is nearly developed, but this requires skill and patience. I have recently tried—and with much better success—hanging the entire comb containing the queen-cell in the hive which contains no queen. Queen cells are not scarce in the swarming season; every colony which has produced anearly swarm will contain several. These can be removed when the proper time—that is, when nine or ten days old, for if delayed longer, some may have fully matured, and if the bees are not inclined to swarm these new queens may destroy those remaining undeveloped, by biting through the cells. The bees usually place the queen cells upon one or two combs; attention is necessary to distribute them sufficiently, that every queenless colony may be supplied with comb containing one or more queen cells. This method of superseding queens is certainly very simple and practical, as well as expedient. Very little disturbance is created among the bees by any means be lost or destroyed during the welding flight, a new queen cell should be immediately inserted, and care should be taken to select one nearly matured, that the bees may not become too much excited.

Draining of Land.

Notwithstanding all that has been said and written upon the subject of underground drainage, it has not yet become a popular operation on our farming lands. There are various obvious reasons for this. Many persons have doubts regarding its value. The expense of thorough drainage is considerable, although the labor of digging and cost of materials is often exaggerated, yet the difficulty of procuring either is, in most localities, sufficient to prevent it. No one can have had experience in the execution of the work, and who cannot avail themselves of intelligent supervision, for in this, as in all other practical operations, very much depends upon the economic application and direction of labor.

The experience of practical drainers, both in this and other countries, proves beyond all controversy the great advantages which accrue from the thorough drainage of all soils. Even in lands not particularly retentive of water the effect of underground ventilation or aeration is evidenced by the increased capacity for producing fruit. With a drained soil the cultivator is prepared either for a wet or dry season, for it is well established that drainage increases the capacity of the soil for retaining moisture or moist air, which is precisely what the roots of plants require. It is a mistake to suppose that draining actually has the effect of drying land to the extent of depriving it of all available moisture. The reverse is nearer the truth, that there is more available moisture for plants in drained than there is in undrained land. Every description of soil has its relative degree of porosity or power for retaining moisture. Peaty or mossy soils, mainly composed of partially decayed organic matter, are the most porous, and under dry season, are the greatest absorbers of water; while compact clayey soils have this capacity in a very limited degree. Draining a peaty soil will not deprive it of porosity; it may be likened to a sponge which will retain all the water that may be poured on it until its pores are filled, but no more; so draining relieves the soil of superfluous moisture that cannot be retained or held in suspension by air, and which, if not removed by percolation can only be removed by the slow process of surface evaporation.

The series of tests produced to the full extent of their ability unless underdrained. The ordinary routine operation of plowing has a tendency to form a compacted strata immediately below the cultivated or plowed portion, which acts as a basin in the retention of water. Such soils are cold and late, because the water prevents the heat of the sun from warming the soil until the water has been removed by evaporation, which produces cold; so that in addition to the impracticability of early spring cropping of such soils, every summer shower cools the earth surrounding the roots of the growing plants, which thus undergo a series of checks in their progress to maturity. These evils are removed by draining. Even the strongest clays are more or less permeated...
knowledge of agriculture is the accumulation of fixed facts, suggested perhaps by accident, discovered perhaps by science; but, however obtained, proved or confirmed by the practical farmer on the land. A theory which bears this test may become a law at once for the farming community, and until it has borne such test, even if it be the law in every matter what the orign may have been, whether college or farm yard. While, therefore, an agricultural school may be devoted to science as a guide to agriculture, and may be engaged in cultivating a single farm according to the best known principle, it must depend upon a widespread community of farmers for the last grand process of proving and diffusing its theories. And when we remember that agriculture is not an exact science, and cannot be until the skies and the seasons are subdued by man, and that the facts discovered in the field by the different cultivators are oftentimes of more practical value than those laid down by the student in his closet, we shall not be surprised at the success which associated farmers have met with in the work of advancing agricultural education. In fact the most substantial and useful literatures of agriculture goes to prove this.

The books to which the farmer turns most eagerly for knowledge are those which contain the facts which now constitute the treasury of his library: Arthur Young, traversing all England for the materials out of which to write his admirable volumes, John Thistlethwaite dealing with his own hands to extract from the soil itself the doctrines of horse-keeping and drill husbandry with which to enrich his native island; Mr. Cully, devoted to the improvement of cattle as the best college in which to learn how to discuss their breeding and feeding; Fitzherbert, who, although justice of common pleas, was as he tells us "an experienced farmer of more than forty years," and wrote the "Books of Husbandries;" and so the admirable writers of modern days all write from the great standpoint of experience. What richer fountains of agricultural knowledge can be found than the schoolhouse of our agricultural societies? Where can a better lesson be read than is contained in those modest volumes issued annually and containing the recorded experience of successful farmers? We turn to this fountain of knowledge with confidence, and we turn it with new light and courage for the pursuit of farming. What a treatise on sheep-husbandry might be written by sitting at the firesides or roaming over the pastures of our great wool-growing States and taking notes of the experiences and labors of the farmers there? What fund of information could the farmer gain from the management of orchards, the use of manures, the conduct of the dairy, lie concealed in the farm-house everywhere? It is a combination of this practice and economic science which should be the desire and moito of every farmer's association, and is the foundation of the farmer's best knowledge.

Let the example thus set be followed always and everywhere. Let our scientific teachers learn to respect the practical knowledge of the farmer, and let the farmer lay aside his jealousy of the learning of the schools. To this end the proper recognition of mutual forces would how the earth unfold her secrets: how would the fields rejoice under well-directed cultivation; how would the whole animal economy of the farm be developed and improved; how would the whole business of agriculture be brought into subjection to system. Without this combination, derived of this accumulation of facts, science in agriculture becomes powerless; with it, it becomes a most important ally to the farmer; in fact, it is reduced to one mode of practice itself, and meets with the highest success. For in whatever the farmer does is he obliged to recognize an influence which the hand of man cannot reach, which no investigation can fathom, no human power guide. Agriculture obeys the laws of nature; science endeavors to ascertain and explain them. Science may attend upon agriculture as a guide and stimulus to the best exertion; but is the patient and prudent and experienced farmer who knows what he needs, what crops he can raise, what fertilizers he requires, and what labor he can best apply. It is the union of practice and science which makes farming perfect. — Hon. Geo. B. Loring.

Our Local Organizations.

Lancaster County Agricultural and Horticultural Society.

The Lancaster County Agricultural and Horticultural Association held a stated meeting on Monday afternoon, September 4, 1852, in their room in City Hall. The following named members were present: John C. Livilite, Salisbury; S. P. Eby, Esq, city; James Wood, Little Britain; W. B. Paxson, Cole- rain; Daniel Smeych, Esq., F. R. Diffenderfer, city; C. H. Hatt, Esq.; Peter Hershey, city; J. M. Johnson, city; J. F. Landis, East Lampeter; John son Miller, Linwe; Levi S. Reist, Oregon; Phares Buckwalter, East Lampeter; Eph S. Hoovers, Manheim; W. H. Brosius, Drumore.

The president being absent James Wood was called to the chair.

John C. Livilite stated that he had been a member of the association for many years. He had been a subscriber to the "Eagle," and had always been a great advocate of its views.

The association was called to order, and the minutes of the last meeting were read and approved.

Mr. H. H. Keim, of East Lampeter, presented a memorial from the residents of the East Lampeter District, requesting the establishment of a school for the education of children in the district.

Mr. J. F. Landis, of East Lampeter, presented a petition to the legislature, praying for the establishment of a hospital in the county, and for the creation of a board of health.

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The Lancaster Farmer.

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Clover looking better than he has seen it look within the past four years. Apples are diseased and partially a necessary one is to be found on the trees.

W. E. Paxson, of Colerain, had never seen the prospect of the corn crop better; the clover and pasture fields also look well and the late rains have greatly increased the yield. A few apples, with the exception of the nutlets, are drop- ping off.

Johnson Miller, of Lititz, said the late rains have greatly improved the corn and tobacco, and the latter now looks very vigorous. The boys of the cellar are rapidly dropping off; the peaches are being attacked on the tree by bees and wasps; the grapes are rotting on the vines in some places; the young clover looks better than he has ever seen it at this time of the year; some farmers are afraid of a frost, which looks as if it would be about a average crop.

Peter Hershey said he thought the tobacco in Salisbury was better than that nearer Lancaster, though everywhere there has been wonderful improvement, in the development of the crop. The tobacco buds are the same, the weather is dry, but the ears are short; grass, timothy and clover look very well; apples are scarce and falling off, except the Baldwin, Smith's Older and a few others, which contain some fine fruit; wheat turned out very well and oats poorly.

James B. Smith, of Colerain, said the wheat was excellent; and believes the corn will be equally good; of oats there was not more than half a crop; his own yielded 21 bushels to the acre; not many apples are grown in his neighborhood, and no peaches; he don't grow tobacco, but sees some very good crops in the one and all this is one of the very best seasons the farmer has ever had.

Selecting and Breeding Dairy Stock.

Mr. W. E. Paxson, of Colerain, read the following essay:

In respectful obedience to your request I will present as brief a summary of the subject of selecting and breeding, as the title of my essay will indicate; and first of all, the subject of selecting and breeding dairy and stock. The milking qualities of our domestic cows are to some extent parallel to many of the qualities of the plants and breeding. In the natural or wild state the cow yields only enough to nourish her offspring for a few weeks after her young dry for several months or during the greater part of the year. There is therefore a constant tendency to revert to that condition which is the natural or wild state. This is accomplished by the selection and breeding of the individuals capable of transmission; and instead of being exceptional or peculiar to an individual they become the common qualities. It is possible to get at the edge of the history of the different breeds, and especially of the dairy breeds, is of manifest importance and will aid all the farmer perhaps is making an intimate ligent selection with reference to the specific object of pursuit. In selecting any breed, therefore, the farmer should be guided by the rules which have been adapted to that branch of dairying which he pursues. An intimate acquaintance with the various breeds, and in this case, known among us has led us to the striking the most prominent breeds—especially those applicable to the different climates. Many famous breeds have been so frequent and extensive in the United States within the last few years that they have been but little observed, and the mixture of country with the reach of the farmer. If the dairyman is selling his milk, the cow that will yield the highest proportion of milk will be the profitable one. If he is making butter then he must have a large yield of cream of the best quality, no matter what the flow of the milk may be. The cream of the best quality, according to Mr. Smith, is the best kind. How careful should he be in his selection, and to whom from that stock with the hope of improvement.

With the dairyman the cow is the machine that makes the profit. There should therefore be as careful in selecting his herd of cows as the manufacturer would be in selecting machinery to work. Butchers give greater attention to his machinery than the dairyman to his herd of cows. Nearly one third of all the cows kept by dairymen in the country produce less milk than will pay their keep. They are simply a cog upon the business, and the sooner they are disposed of the better. Does not this important man- 

The Question Discussed.

J. C. Litviville thought the essay much to the point and furnished much information that would be of value to the farmer as well as to the dairyman. We don't pay enough attention to our dairy stock; the common mode of raising our dairy cows is to raise them from sheep and early maturity, will bring a much higher price at the same age than a calf sired by a she.

In closing, let me make one remark in regard to the treatment of our cows. There is an old adage among the Germans that the cow milks only once in four years. This is not by any means true; many of our farmers are guilty of this, and instead of giving them the treatment they deserve and cannot do without.

The productiveness of the cow does not depend on her breed so much as on her treatment, and the treatment that is put on our cows is insufficient. The question is how much nourishment should be given in the way of milk, and the different kinds, or how much nourishment should be given in the way of milk, and the different kinds, and how many of us forget this, and instead of giving them the treatment they deserve we treat them as we please. The productiveness of the cow does not depend on her breed so much as on her treatment, and the treatment that is put on our cows is insufficient. The question is how much nourishment should be given in the way of milk, and the different kinds, or how much nourishment should be given in the way of milk, and the different kinds, and how many of us forget this, and instead of giving them the treatment they deserve we treat them as we please.

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Levi B. Retst said the farmers in his neighborhood were also giving up the Fultz wheat. In Mount Joy they are introducing a new variety, the name of which he had forgotten. Samuel Hosler has the seed and it is said to be very prolific. There would be very little change of seed in his neighborhood. The farmers were about ready to give up the Fultz, but it has done so well this year that they are going to grow it another trial. There is a new variety being introduced by some farmers called the Russian wheat, for which $3 per bushel is asked. It was introduced into Lancaster county by New York seedmen who were so well pleased with it that they bought up for seed all the crops that were sown.

J. C. Linnell said the shunnaker wheat, being introduced by some farmers, has red chalk and red grain, and is better for milling purposes than the Claude or Fultz; it stands the winter better than either, but is more liable to be attacked by the Redan fly; the straw is tall and liable to lodge.

Frank Wood said the Claude did not do well on heavy soil; it ripened too late and the seeds did not mature as well as other varieties.

Following Corn with Wheat.

"What is the best method of preparing corn ground for wheat?"

Levi B. Retst answered, cut the corn stubbles off close to the ground and drill in the wheat without plowing.

J. A. Lindsor endorsed this plan: he cultivated his corn as late as August, kept the ground as level as possible and after the corn is off drill in the wheat without plowing.

J. C. Linnell said that no answer will apply to all cases; in some instances corn should not be followed by wheat or corn on corn ground without plowing. His soil is too heavy. He would plow the ground, roll it, harrow it and roll it again. If the soil is loamy it is not necessary to plow it, but in heavy soils inside plow by all means.

James Wood bowers in the seed without plowing, but his known both plans to succeed and both to fail. Much no doubt depends on the soil and fall.

Forestry.

Levi B. Retst announced that he had received from the Lieutenent Governor of Canada an invitation to visit the Forestry Convention, and in connection read from a paper some startling statistics showing the wonderful consumption of wood in the construc-

Fruits on Exhibition.

F. E. Diffenderfer, Levi B. Retst and J. Frank Lansil were appointed a committee to test and report on the fruit brought to the meeting. Their report was as follows:

The fruit on exhibition consisted of one plate of seven peaches, large in size and fully ripe; three plates of seedling peaches of the Suiuer variety, all resembling the pure seedling and having appearance, although not quite so large; the one marked No. 2 was rather better flavored than the Seiler itself. All are worth cultivating, and are very handsome in appearance.

These were all exhibited by Daniel Smeach of this city.

Mr. Smeach also exhibited a plate of Telegraph and Champion grapes, very fine in appearance and well flavored. Also, a large foreign plum of a fine yellow color and handsome appearance.

S. F. Rhy Exhibited one of Rogers grapes, but notably superior. The variety is unknown. Also, some Bartlett pears from a tree planted in 1879; a Benoni apple from a tree planted in the fall of 1875; also, a pear of the Braundwine variety, and some early Crawford pears of large size; also, some Bartlett pears from a tree planted in 1879; also some very handsome trumpet flowers of reddish color and growing abundant clusters.

Mr. Retst had two seedling apples for name, but your committee are unable to pronounce definitely upon this. They are of medium size, reddish in color, and of a pleasant taste. They are very juicy and would make fine cider apples.

Burks County Fair.

Joseph P. Witter, Eph. S. Hoover and Calvin Cooper were appointed delegates to attend the Burks county fair, commencing on the 24th of September.

POULTRY ASSOCIATION.

The Lancaster County Poultry Association met statedly in their room, in the City Hall, at half past ten o'clock on Monday morning, September 4, 1882, with the following members present: George A. Geyer, Spring Garden; J. R. Litchfield, city; Charles E. Shumaker, city; B. L. Hartley; J. N. Johnson, city; J. E. Schum, city; C. A. Gist, city; and F. D. Dif-

FULTON FARMERS’ CLUB.

In accordance with their established custom, the Farmers’ Club, of Fulton township, held their annual fair and picnic on September 2, at Black Barren Spring, in Fulton township, one of the prettiest places to the lower end of the county. Though it threatened rain all morning the sturdy farmers with their wives and daughters began to come in at an early hour and by noon fully four hundred persons were on the grounds, which were prepared for the occasion. A grand stand had been erected, which was handsomely decorated with flowers and greens and in front of it were placed rows of benches for the accommodation of the audience. Near the stand were long tables, which had been placed under the trees, and these were soon made attractive by the large variety of articles brought by the farmers as they came in. In another part of the grounds were the fencing implements and the live stock. Though no premiums are offered, those who attend these gatherings take enough interest in them to make a very creditable display as the following list of

Articles Exhibited

with the names of the exhibitors.

William King, of Kirk’s Mills, exhibited three va-

May H. Stubb, Wakefield.—Three varieties of berries, pears, double square, box of honey and a cup of crab apple jelly.

Joshua Brown, Lyle.—Corn, cucumbers, Jerusalem cucumber and tomatoes.

Lyman C. Blackburn, Pleasant Grove.—Water- melons.

[September, 1882] May Morgan, Goshen.—German wax beans and corn.

Grace A. King, Lyle.—Two varieties of grapes, tomatoes, cabbage, apples, peas, beets and canned peaches.

J. R. Blackburn, Pleasant Grove.—Peach, sweet potatoes and wheat.

Rebecca D. King, of Kirk’s Mills. Jelly, canned plums, and canned gooseberries.

F. H. Gibson, Little Britain.—Preserved toma-

Jacob Moore, Lyle.—Pears and beets.

Delora Jackson, Waseca.—Can of apples.

Lindsey King, Wakefield.—Two varieties of apples and one of sweet potatoes.

W. F. King, Wakefield.—Lima beans, acme tomatoes, Kirk & King, Wakefield.—Canned tomatoes and canned corn.

Lauretta A. Kirk, Waseca.—Large beef.

Thos. F. King, Waseca.—Corn.

Gilpin Reynolds, Wakefield.—Watermelon, citrus and beet.

Philea Reynolds, Wakefield.—Canned and pre-

Joseph Brown, Wakefield.—Early Roa potatoes.

George Balderson, Colora, Cecil county, Md.—

Forty two varieties of apples, cut flowers, and potted flowering plants.

S. L. Gregg, Greene.—Four varieties of apples, five varieties of pears and grapes.

Haines, Brown & Bros., Lyle.—Green fox grapes, potatoes, short-boiled bull and four short-boiled corn, both on which the ears grew fully eight feet from the ground.

Neal Hamilton, Goshen.—Buckeye cultivator, Davis swing chum, four varieties of cora egg plant, three varieties of tomatoes, lima beans, nasturtiums, and Hartford prolific grapes.

Sarah Hamilton, Goshen.—Cabbage and hard soap.

Wm. Ingram, Pleasant Grove.—Barlett pears and sweet potatoes.

Wille M. Hamilton, Goshen.—Oddities in potatoes.

Jonathan Pickering, Little Brittain.—Seven varie-

S. S. Herr, Pleasant Grove.—Potatoes.

J. W. Thompson, Pleasant Grove.—Odesa or Russian white wheat and Root’s corn planter.

Melissa Tecker, Harford county, Md.—Leaves of Egyptian corn and twenty varieties of cut flowers.

Irvin Kirk, Fulton county.—Five varieties of potatoes, apples and tomatoes.

Jos. C. Stubs, Peters Creek.—Two varieties of wheat and pea of Southdown sheep.

Avis Hamilton, Goshen.—Corn buck doll and tea.

J. W. Tecker, Harford county, Maryland.—Concord grapes.


Wm. A. Johnson Oxford.—Easty Organ.

Isabella Read, Pleasant Grove.—Two coops Ply-

Emmor Smelley, Waseca.—Short-horned bull.

A. C. Jenkins, Rock Springs, Cecil county, Mary-

—Missouri grain and fertilizer drill.

Jas. C. Bird, Rising Sun, Maryland.—Spangler fertilizer attachment for grain drills and the Success puncher.

A. M. Brown, Pleasant Grove.—Wheat and oats.

Watson Reeder, Rising Sun, Md.—Penn Revolving harrow.

Howard Coates, Little Britain.—Acme barrow two varieties of potatoes, lima beans, and Livingston cucumbers.

Jos. A. Roman, Colora, Cecil county, Md.—Mangel wurzel beets.

R. L. Flaherty, Pleasant Grove.—Peelers potatoes.

Harry Reed, son of George K. Reed, of this city, who is now boarding with J. Wesley Thompson, the lease of the farm, had on exhibition two of Mr. Black’s Alderney cows, “Bel” and “Maggie,” which were cared for by him and are in good condi-

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The morning passed very quickly, all present seeming to enjoy themselves as only farmers and their families can when thrown together. They examined each other's exhibits and compared notes, each being benefited by the experience of the other, and the improvement was wonderfully noticed by small crowds of men eagerly listening to the explanations made by the owners.

Address of Welcome.

After dinner an hour or more was spent in social converse, when the president, William King, called the meeting to order and introduced James Black, Esq., of this city, who on behalf of the Fulton Farmers and Mechanics Association, presented a number of exhibits from a trip they had recently made to the great agricultural show at Buffalo. The president then called on various members of the club to speak of the advantages of agricultural improvement, and the little society is held in high regard. This club and like associations are of value to the public as well as socially, and the country is better in every way for them. They will be found to exist only where a wise and educated agriculturalist is resident, and in the beginning be spoken of the purpose for which this assemblage was held as being most worthy and commendable; not a meeting to further political schemes but one where there exists only a genuine desire to improve agriculture. Its foundation is in the condition, quality, and perfection of the agricultural produce and a general desire to pass a day of social enjoyment, instruction, and instruction. How great is the delusion of those persons who suppose that farm life is rule and uncultured, and attended only with toil and weariness. Who can look on this assembly, on the evidences of civilization and advancement we see about us in the fertile fields the grazing herds, the handsome yet substantial and useful buildings and remembering the wonderful art and skill there represented yet say that farm life is just such a life? We see here for greater and more wonderful and beautiful than all, the works of Nature surround us, offering us ideas, teaching us lessons, and leading us into paths that lead ever to our moral, intellectual and spiritual advancement. There are two ways of farming, as perhaps of doing everything else—right and a wrong way. The first leads to abundant success, and the second to discouragement and ultimate failure. Farming is not as many appear to suppose, merely a laborer's occupation, in which are included the care of a few acres of land, while the man who makes farming a success has as good a right to be proud of what he has done as the most worthy and eminent of our merchants or professional men. It is not for us now to attempt to suggest how farming is to be made a success, but this much is very certain—different soils need different kinds of fertilizers to enable them to produce satisfactory yields, except in the case of manures, which are applied to all soils, and upon which too much value cannot be placed or too much care exercised to collet at least a large quantity as possible. They may be justly regarded as the farmer's savings banks, while chemical fertilizers, which we cannot do without at present, we must endeavor to bring into use as much as the market will bear, and as a consequence, as many of the profits of farming. The man who expects to succeed at farming must not only work, but also study and observe, and here comes in the advantage of establishing farmers' clubs in order that the knowledge gained by individuals may be imparted to each other. Farmer societies, such as the Farmers' Institutes, etc., etc., much good must inevitably result. The speaker had read with pleasure and profit the reports of the meetings of the club as published, and by no means the least interesting parts of these reports is the description of theenery and the wonderful and successful at these meetings and aid in their success by their literary offerings. Woman's presence in this and interest must always add to the interest and success of every enterprise where business and social life can be combined. In farming communities the wives and mothers of the community, and the idea of them to their daughters, should be worked. Women and should consider a competent knowledge of housekeeping as one of the essential parts of their education, will be given them knowledge that of more value than gold, as it will insure to them such happiness and freedom from anxiety and misery as is the result of those subjects, but knowing are able to fill the positions of wife and mother. The speaker closed by congratulating the management on the success of their meeting and with many wishes for the welfare and success of the club and success of its members.

Manual Labor and How It May Be Enforced.

This was the subject chosen by the next speaker, Wash- ington B. Paxson, of Colrain, and he said he knew of no subject that was of greater interest and importance to the agriculturist. Labor is the bone and sinew of every nation. It was labor that laid the foundations of this country, and he believed it was that labor which cleared the forest and cultivated the soil and caused it to bring forth the golden harvest; that has built our towns and cities; that has constructed our railroads; in short, it feeds, clothes and defends us. All that man possesses or may expect to possess is acquired by incessant toil. Every path that leads from the great highway of labor is cut by human invention to shrink labor and is leading to the rising generation to dislike labor, instilling into their minds that it is a disgrace to work. Such a training for manhood must be eradicated before the laboring class is appreciable benefits. Labor would become more honorable if we could do away with those absurd class distinctions which make the occupation of a man the standard of his worth. The man who spends his life in clearing and cultivating the land... Think of his exalted position, his unripped industry and frailty, discharging his duties to his family serving his country and honoring his God and tell me that such an occupation is disgusting. We ex- tend too highly the man that comes from through trickery, and moves through the making a grand display in society. How little the world admires yet how heros the resolution which prompts the young man to clear land and make a home for his family. How manual labor be respected, and we see men who are successful in much to take a higher rank? In the first place honest la- bor should receive more attention in our domestic circles, and, secondly, it should be introduced into our schools. It is evident that there is something wrong in the system of education, for to educate a young man one must teach him to obey the laws to wear it, and should lower down the standard, educate a young man, now is sending him forever from the farm. Education and manual labor are not working harmoniously together and the speaker feared they never will until that avarice and prejudice, which are the enemy of the system, will be overcome. Only by a proper system of training. In some leading countries of Europe, industrial schools have been established, where agricultural and the industrial arts are taught, not only in the higher but in the primary schools, and these have proved highly suc- cessful.

It is now a recognized truth that the successful cultivation of the soil is both a science and an art. The methods of all vocation in life filling the soil require that the farmer's skill to be able and our work must be admired and the success of his children. This high degree of knowledge is requisite to determine what kinds of crops are adapted to different kinds of soil and to improve the fertility of that soil. The farmer, who is required in planting, culti- vating and securing the crop, must be a professional and intelligent agriculturist; there is a great demand for skilled farm help. If our farmers' sons could be taught to believe that laboring on the farm is a honorable as any other employment for them, and that this lack of skilled labor on the farm would in some degree.

In conclusion the speaker advocated the formation of an agricultural society in every community where farmers and their families can mingle together and discuss the various modes of farming and exchange ideas. Such societies are instructive and those who belong look forward with bright anticipations to the meetings. Farmers as a rule have too little acquaintance with each other, know too little of what others are doing, and the neighborhood. Absorbed each in his own affairs, they do not consider the ways in which they might be mutually helpful to each other. The above are but short abstracts of the addresses which were delivered several hours in their delivery. Mr. Dickey, of Oxford, spoke at length on the position of the organ, and the audience again dispersed through the ground to pass the rest of the day as suited their fancy.

Agriculture.

Pasture Grasses

Pastures should not consist of one kind of grass only, because (1) the quantity of hay, going from one to the other thus keeping their appetite always satisfied; (2) because the grasses have different periods at which they mature, one kind having passed its best stage, another comes to its best, and takes its place, and (3) because grasses vary in the degree of stand- ing, the different kinds being better suited to the vicissitudes of the weather, another may be to an equal degree benefited. It should be more the prac- tice to stimulate pastures with special manures. This is as necessary a thing to do as to feed a particular animal. To keep the grass growing on the farm, among the best stimulants to tardy growth is the addition of soda; and this may be used freely on pastures without great outcry, and with prompt and benefi- cial results.—National Live Stock Journal.

Experiments with Green Manuring.

Mr. J. C. Chadbourne, of Vassalboro, has been experimenting with green manuring on a small scale, and has had several favorable results. He had a piece of land containing about two acres which had been neither ploughed nor dressed for fifteen or twenty years, and was producing not more than five hundred pounds hay to the acre. A year ago last spring he ploughed it, and after thoroughly pulverizing the soil, he sewed upon it at the rate of four bushels of western corn to the acre. The corn grew well and when it was at maturity of growth, he ploughed it under. It was estimated that there was forty to fifty tons of green fodder per acre.

In April last he sowed the field to clover and Timothy, and harrowed it in; and the last of July he made from the two acres, three tons of excellent hay. When ploughed, on a portion of the field, the plough turned up white sand; on another, black mould, and on the balance coarse gravel. On a part of the field Timothy was in full bloom the last of July and very handsome. Mr. Chadbourne says it was the finest hay he ever cut upon his farm. He
proposes to continue his experiments with green manuring and is very much encouraged in his past success. Other parties in Venables are moving in the same direction, and are making anxious inquiries for the best methods of fertilization by green manuring.

**Wheat Raising.**

A great stride towards successful wheat-raising was made when the drill was brought into use, and a much greater stride could be made if the drills were twice as far apart and were sown not more than thirty to forty pounds to the acre.

In the season of 1882, the greatest possible advantage may be taken of a given area, the wheat plant (or any other plant) must have room to carry out its habit and develop according to its nature. One grain of wheat cannot do this on less than sixteen square inches. One kernel should make on an average all over the field, with at least twenty good heads, and every head should produce at least forty grains, every pound should be made to produce its bushel all over the world. One pound has been made to produce from sixty to one thousand fold. These facts are from thin-sowing. No instance is on record where thick-sowing ever produced more than seventy bushels per acre.

Sowing much wheat "to get a good stand" is the worst kind of economy. The farmer loses his seed, and never, in any instance, can make as large a yield as by thin sowing.

The best money farmers have to contend with is wheat. Instead of giving each kernel about an inch square, as most farmers do, they should in every case reduce the quantity per acre and sow thin enough to give it sixteen. Thousands of instances are on record where one grain has produced from ten to one hundred and eighty good stalks and as many heads without dividing. Last year from seventy-six kernels ten and one fourth pounds of good, plump grain was raised. On fifty-one square rods this year I sowed just twenty-eight ounces of pickled corn. The corn did in all respects, and what I have now to show as the product is 19 1-2 bushels of as nice grain as the sample enclosed.

To thin-sowing in every state and locality I can offer many objections, but to thin sowing and culti- vation there is not one that can be made tenable.—As E. Blount in Germaner Telegraph.

**What of the Future as Regards Grain.**

As the decline in wheat has attracted so much attention, and farmers are reported to be holding back for better prices, it may be well to examine a few statistics upon which the decline seems only natural, though from its suddenness there may possibly be a temporary reaction. We have a yield of wheat of not less than 560,000,000 bushels and the very superior quality of it will increase its bread-making properties much above the average. For a population of 54,000,000 we need at the outside for bread 243,000,000 bushels and for seed not over 57,000,000 bushels, or a total for all of our home wants of 300,000,000 bushels. Leaving a surplus of 260,000,000 bushels, which is available for export, as the stock of old wheat, and the country is fully 40,000,000 bushels—and this is ample for reserve.

Now, with 300,000,000 bushels surplus, what are we to do with it? The highest amount of wheat ever exported was 180,000,000 bushels (four included) for the year ended June 30, 1881, and the average export value for the whole year was $1.11 a bushel while for the year ended June 30, 1879, the average value was $1.06 a bushel. During the year ending June 30, 1881 there were 552,000,000 bushels. We must deal with our customers. Nearly every European country receives large imports, both France and England having smaller crops than they promised this year. The requirements of Europe were greater than they had anticipated for the next two months, and then we had but little competition. Nearly every European country received large imports, both France and England having smaller crops than they promised this year.

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**What Manure Losses by Burning.**

It is not always true that a pile of manure steaming with heat and smelling strongly is losing ammonia. Ammonia is a very volatile and pungent gas and might be known by its peculiar scent, which is freely given off by close, ill-ventilated horse manure, and not by that for well-cleaned horses. But it is not often that this peculiar scent escapes from manure heaps; on the contrary it is a more disagreeable odor, similar to that of rotten eggs. This is phospho-nurized nitrogen, and not ammonia, and occasions no loss to manure except the sulphur. If, in making a manure heap, the horse manure does not get into the leaf-hose and fire "fog" or slowly burn to a white, dry, light stuff, then the ammonia is lost and the manure seriously injured.

**Good Crops in Alabama.**

Never in years did we have better crops than this year, and we may reasonably calculate a brisk business with the men. All kinds of crops are a certainty, except cotton, and cotton is fast forming and growing, and all the fields on up to the 20th of September will make good cotton before frost; and a strong case can be made this year for an excellent acreage for the next 50 days, and, notwithstanding the small acreage, the yield will be larger at Selma by 20,000 bales than it was this year. Farmers have very generally produced their own substances, and by next Christmas we predict the farmers of south Alabama will be in a condition they have been so long without, and their cribs and smoke-houses full, and of substances the result of their own labor and economy.—Mobile, Ala., Gazette.

**Magnesia for Wheat.**

The author of this article (with nitrogen, phosphoric acid, lime, and potash) the proportion of nitrogen and of phosphoric acid increases in wheat from time of blossoming to maturity. Lime, on the contrary, decreases, and, hence, seems not to play a very important part in the production of the grain, but, along with phosphoric acid, it improves the composition of the straw. Magnesia is more important than lime in the formation of grain. The mean requirements of wheat in order to produce 40 hectoliters per hectare are: Nitrogen, 9.56 kilos; phosphoric acid, 3.7; lime, 26.2; magnesia, 12.3, and potash, 116.2. The lowering of wheat and other corn is not due to deficiency of silica in the stalks, but to a diseased condition, consequent on excessive moisture and deficient sunlight.—H. Joule.

**HORTICULTURE.**

Keeping Grapes Fresh. Particularly at this season, when grapes are ripe- ing, the discussion is generally started as to the best method of preserving them through the winter. Some of these methods involve a great deal of labor and after all are seldom successful and rather worthless the vine-grower, who cares about keeping grapes all winter? Every grape has its season, and when that comes to an end the desire for it passes. Apples can be kept until July in a very good condition and with very little labor; but who cares for them after April? It is so with pears—their popularity is not suited to that end. Still there are some which we will save "anyhow," and it may be as well to say a few words as to the proper way to go about it.

Of course the leading difficulty is that the plants are at this time in a delicate stage, and die away after taking up and potting, and we have therefore to direct our energies to prevent this very thing. The kind of

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**THE LANCASTER FARMER.**

**[September]**
Save the Peaches.

Now is the time to be putting these away under ground, so as to have them in good condition to be plaited out in beds of rows in the spring. Nor is it well to put it off until next season, thinking to do it then, as it may find you without any to put away. So, now, when they are to be had in abundance, it is better to attend to it at once. If some of the seed of the best varieties are left to crow without being budded there will be a fair chance of their producing fruit of so good, and perhaps better, quality than that now appearing before you. As you are in possession of the younger and softer leaves should be picked off, for it is these which are the most reckless in drawing on the plant's liquid supplies. Of course the plants must be put into their pots or tubs at the time of lifting, after the first frosts, and the whole thoroughly soaked with water on completion. Then the pots should be set into shade and shelter, where neither sun nor wind can get at them, and where air without the loss of moisture can be given to them. Some plants will not much "miss their leaves," as the gardeners say, and may be put in the full light after a day or so, while some may need this sort of protection for a week. The rule is to put them into the full light as soon as they show no disposition to wither under a moderate sun.

HOUSEHOLD RECIPES.

FIG PUDDING.—An excellent pudding can be made of figs, and I think it will be generally liked if well made, as every thing ought to be. Let the figs be cut up and mixed with eggs, flour, enet, milk, etc., in the usual current method, and that is all.

TO WRITEN ORCHID LINEN.—If a stork's beak or a wooden spoon has been used to write on it where bright sunshine will fall directly upon it, it will remove entirely.

TO COOK TURNIPS.—Pure and slice and boil in as little water as possible. When almost done and al almost transparent, add an even teaspoonful of a jet to each quart of turnips, and serve to make palatable.

ALMOND CAKE.—One and one-half cups sugar, half cup butter, four eggs, half cup milk, two cups flour, two teaspoons baking powder; bake in sheets. Icing: White of three eggs beaten stiff, three tablespoonfuls white sugar, one cup chopped almonds, and enough to taste and put between these and on top of layers.

PAN DOUDY.—Fill a pudding pan with apples—pared, quartered and cored; cover the top with a crust rolled out of light bread dough; make a hole in the lid and set the pan in a brick oven. After it has cooked lift the crust and add molasses or brown sugar, half a cupful; pour over the gravy and let it stick to the crust. Boil it down to a thick, rich gravy, and strain it off. Dilute with milk, if any left, and serve. It may be boiled in milk, in which case the apples had better be stewed and the crust baked separately, then mix altogether and bake two hours.

SMOTHERED CHICKEN.—Cut a good sized chicken open on the back and spring the breast bone back so that it will lie flat; wash it well in salt and water; lay it in the baking pan with the outside of the bird uppermost; cover with well browned flour; cross the legs and tie them and cramp the wings; pour over it a quart of water and set it into the oven to bake, dripping the gravy over it occasionally. When well browned turn it over and serve with hot brown gravy and let it stick back in the oven. About ten minutes before it is needed for the table turn it over again, so as to have the outside of the chicken a bright yellow brown when placed on the platter. It is very delicious cooked in this style.

PUMPKIN PIE.—Cut the pumpkin into thin slices as soups, and stew them in four quart of water; add six or eight rich sugar pears, one dessertspoonful of sugar, one pound of rice, pepper and salt, a few cloves, a little pastery and thyme; stew until nearly tender, strain, and when cold remove the fat; when used thickened with flour and butter.

PICKLED OXOONS.—Peel the onions and let them lie in a dry place several days, changing the water each day; then put them into jars and pour fresh salt and water on them, this time boiling hot; when it is cold take them out and put them on a hair sieve to drain; after which put them in wide-mouthed bottles and pour over them vinegar prepared in the following manner: Take two quarts of vinegar and boil it with a blade of mace, some salt and cinnamon in it; when cool pour over the onions.

LEMON PUDDING.—Put in a basin one-quarter pound of flour, same of sugar, same of bread crumbs and chopped suet, the juice of one good sized lemon, two eggs, quartered, two eggs, and enough milk to make it the consistency of porridge; boil it in a basin for one hour; serve without sauce.

READY-MADE GLUE.—A good glue ready for use is made without the application of heat by dissolv- ing the glue in common whisky instead of water. Both are put together in a bottle, which is then sealed and kept tight for one or five days. If prepared in this way, it will keep for years and always be ready for use, except in extremely cold weather, when it will be necessary to set it in warm water before using. A strong solution of lin- gia made in the same manner is an excellent ce ment for leather.

APPLE JELLY.—Put three quarts of water into your stew-kettle and pare one dozen large apples and slice them into the water; when all are cut, boil until soft, then pour into a jelly-bag. Let drain and press out all you can. To one pint of juice add one pound sugar, and simmer moderately for half an hour, stirring occasionally.

A REMEDY FOR DUTHERIA.—Dr. Settichor for children of one year or less gives, for internal use, one teaspoonful of a syrup prepared from seven to eight grammes for 100 grammes of distilled water with same syrup; for children from three to seven years old prescribed ten to fifteen grammes and for grown persons from fifteen to twenty-five grammes of the same syrup. This syrup may be used also with great success the instillation on the diaphragm membrane through a glass tube, in serious cases, every three hours, in light three times a day of the nature. Sluzuol pulverize. For grown people he recommends fifteen to twenty grammes of this powder for 200 grammes of water. In the effect of the remedy is rapid. After twenty-four or thirty six hours the feverish symptoms disappear completely and the temperature and pulse become normal. This remedy was used also with the same success by Bishop. Klesner, Dr. Profe, Dr. Senator Cassel, and several others in Russia and Germany.

HINTS TO GARDENERS.—To determine the quality of silk, take ten fibres of the filling in any silk, and if you find that they separate when put one by one in the lustre condition, dissolving the fibers in handling, you may at once be sure of the presence of dye and artificial coloring. Put each of the ten fibres in a glass with the fibers between the thumb and forefinger, and very gently rub between your fingers. The artificial coloring will be seen in the case where the fibres are real, and the plain coloring in the case where they are artificial. In the one case you cannot break the ten strands, and they are of a natural lustre and brilliancy, and in the other case you can break the whole of the fibres together; you may well be assured that you have a pure silk that is honest in its make and durable in its wear.

HEALTHY HINTS.—Flaxseed tea, which is good for cough and sore throat, is made as follows: Put two tablespoonsful of flaxseed in a quart of boiling water, boil fifteen minutes. Cut up one lemon and put in a pitcher, with two tablespoonfuls of sugar, Ginger or cinnamon may be added to suit the taste. Strain into the pitcher and stir together. Medical men claim that a pound and a quarter of oatmeal will supply a man for the entire day. Women and almost as much fat as the body to a one pound of uncooked meat of ordinary quality. A man needs 1000 times as much as a child at the same cost in oatmeal as he does in meats. One pound and a half of Indian meal is equal to one pound of uncooked meat in nitrogen, and surpasses it in all respects. One who has tried it communicates the following benefits: Clears the mouth and teeth, and makes the readers buy at any drug store one ounce of cam- phorated oil, and five cents' worth of chlorate of potas- sium. When any soreness appears in the throat, put the potash in a half tablespoon of water, and with it gargle the throat thoroughly; then rub the neck thoroughly, and the pains will be relieved by a good night's going to bed, and also pull around the throat a strip of woven flannel. This is a simple, cheap and sure remedy.

DRIED CURING PORK AND BEER.—Mr. Gillette in- formed us that he had for a number of years prac- tised the curing of pork, and the beer that is made from the same process. He uses a mixture of dry curing method of dry curing, which supplied far better and swifter blood and ham than the usual brining with vinegar after killing. He keeps his pork through- oughly cool 24 hours or so. The sides and hams are put on racks or beds of straw, not in the usual way, but kept in the sun for a week, and then used the Porto Rico. Salt is heated in an iron vessel to a dry and powdery, and almost "red hot," when it is poured over the sprinkled meat, and when cool enough is thoroughly mixed with the hand. After three days the same process is repeated. They are then hung up in the sleeping quarters for five weeks, when they are ready for smoking. No brine is used to thicken the pork or hams or affect the flavor. The smoking is continued at intervals, with care not to get up a heat by a continuous fire. Two fires a day are made with corn cobs, or dry oak or hickory, and the meat is hung up from a height of 8 feet. The meat is totally surrounded with smoke, 100 to 120 hours in all. After smoking enough, the bacon of
hams are packed in barrels, and covered over with salt. The seller's sign, "The Very Best of Ham," is a statement of fact. He says he has never lost a pound, and never failed to have hams to sell when they were wanted. He has found the salted hams commanding the highest price in the market. We should add, that in curing very large hams by the present process, there is no loss by drying, and the spaces are opened down to the bone joints, and they fill them with the hot salt.

BOLTED SWEET CORN.—Remove the husk, except the inner one, and cut the corn into small pieces. Take a scant spoonful of salt, a pinch of pepper, and a saltspoonful of salt, and a quarter of a saltspoonful of pepper, let it stand for a day.

LIVE STOCK

Improved Sheep.

The Alabamians have given but little attention to grazing lands. They do not possess the idea that the negroes must have a hog for every negro child, and the dog's appetite is very injurious to the health of young children, and it is too commonly allowed to exist. There is no reason why the farmers of this state should not improve their breed of sheep until they hear us and follow our advice. The new breed of sheep which came in from California, and the New Hampshires from New England, are being crossed, and the farmers of our state to improve their breed of sheep until they hear us and follow our advice. The new breed of sheep which came in from California, and the New Hampshires from New England, are being crossed, and the farmers of our state to improve their breed of sheep until they hear us and follow our advice.

Management of Pigs.

The greatest danger to which young pigs are subject is overfeeding. A pig at weaning has a very small appetite, and a little care in feeding will prevent its being overfed. As the pigs grow, the appetite increases, and yet these young animals are permitted to gorge themselves with sour milk and meal slops as soon as they are weaned. This is injurious to the health and develops a condition of the digestive organs which overfeeding produces indigestion, with disorder of the bowels, and so-called stingers, nervous disorders, with grunting and bellowing. The mouth is rough, the breath is fetid, the teeth become black, and some perfectly healthy looking animals are going through the process of digestion.

A New Cattle Disease.

People who have read my report from 18 to 12 miles through North Hillsbrook and Jefferson townships bring me most alarming reports regarding the deaths of cattle in new and mysterious disease. These hogs have been killed by what the villagers call "a New Cattle Disease."
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We append a few sworn testimonials showing the estimation in which it is held by well known millers in the State of New York.

Prices, including bags: $1.50 per Peck. $5.50 per Bushel. $10.00 2 Bushels.

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August 17, 1892.

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COUNTY OF ONTARIO,

Richard H. White, in the county of Ontario, state of New York, do hereby publish, that in the county of Ontario, in the state of New York, I have ground trial samples of the New White Wheat called “Landreth,” and find it equal to the Clasnow also the very varieties of which we have ever seen. The berry large, white, with this skin and light bran. The flour makes unusually white bread. M. MAXWELL, Miller.

STATE OF NEW YORK,

COUNTY OF ONTARIO,

George A. Hibbard, and Nancy Hibbard, his wife, of the town of Phelps, in the said county, being duly sworn deposes and says: We have used in our family flour made from the “Landreth white Wheat,” grown by H. S. Bonnell, and we can say that it makes the sweetest and best bread and pastry that we have ever had or used. E. A. HIBBARD.

FANNY HIBBARD.

Subscribed and sworn to before us.

August 5th, 1892.

LYSANDER REDFIELD, Justice of the Peace in and for Ontario Co., N. Y.

A JUSTICE OF THE PEACE IN AND FOR THE COUNTY OF ONTARIO, N. Y.

A HOME ORGAN FOR FARMERS.

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We Twaire.

Pacific Express.......
Way Express...........
Sierra Express....... 11:00 a. m.

Hanover Accommodation, 10:10 p. m.
No. 3 via Columbia..... 11:55 a. m.
Sandy Mall,............ 1:55 p. m.
Fast Line,.............. 3:30 p. m.
Frederick Accommodation, 3:45 p. m.
Columbia Accommodation, 7:20 p. m.
Harrisburg Express, 7:30 p. m.
Pittsburgh Express........ 9:30 a. m.
Oriental Express....... 11:30 p. m.

Eastward:

Lancaster,.............. 3:35 a. m.
Cincinnati Express.... 5:00 a. m.
Fast Line,.............. 6:00 a. m.
Harrisburg Express.... 8:00 a. m.
Columbus Accommodation, 10:00 a. m.
Pacific Express........ 10 p. m.
Sunday Mail,........... 7:30 p. m.
Johnstown Express..... 7:45 p. m.
Bay Express,........... 8:00 p. m.
Harrisburg Express....... 8:55 p. m.

The Hanover Accommodation, west, connects at Lancaster with Niagara Express, west, at 9:25 a. m. and will run through to Hanover.

The Frederick Accommodation, west, connects at Lancaster with Fast Line, west, at 10:45 a.m., and runs to Frederick. The Finger Express, east, on Sunday, when flagged, will stop at Middletown, Elizabethtown, Mount Joy and Landsdale.

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[July 3, 18]

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JOHN A. HIESTAND, Proprietor, No. 9 North Queen St., LANCASTER, PA.
The Lancaster Farmer.

Dr. S. G. BATHON, Editor.

LANCASTER, PA., OCTOBER, 1882.

Vol. XIV. No. 10.

EDITORIAL.

THE STANWICH NECTARINE.

Mr. Samuel W. Taylor, of North Mulberry street, Lancaster, Pa., has placed us under obligations for a small but handsome donation of this luscious fruit, and what increases its value is the fact that it was of his own cultivation, an achievement in which he stands alone in Lancaster county, if not in the State of Pennsylvania; for it was not professed, even by the nurseryman from whom he obtained it, that it could be successfully raised in the open air. Such a contingency might occur, but it was by no means an assured quality of the fruit. Mr. Taylor has, however, successfully accomplished it for the last two or three years. The present season was the most successful one, the tree yielding a fair crop, and some of the fruit measuring 7 inches in circumference, of a greenish tinge, with a bright vermilion check, and finely flavored. The tree is very healthy looking, being deep green in the color of its foliage; stands near the middle of his lot; has a southern exposure, and a western and northern protection, but not entirely sheltered from the winter breeze. Of course, our fruit-growing patriots will be aware that the nectarine (Prunus persica de Candolle) is nearly allied to the peach; indeed, in flavor and in form, it is essentially a peach, with the smooth skin of a plum. When fully ripe, the skin of the fruit is thin and tender, and need not be removed in eating it. It, however, lacks the color and the peculiar flavor of the best varieties of the peach; but for canning there is less waste, because the skin need not be removed, and its presence does not impair the quality of the fruit.

Mr. Taylor has, in another season, he can improve the size and quality of the fruit, by judicious thinning. The present season when this work should have been attended to, he was ill, and confined to his room, and did not recover until it became too late. It is much more of a peach than the Apricot is, and the seed differs very little from the appearance of a peach-stone. On the whole, we think the result is very much in favor of its general cultivation.

LUSCIOUS GRAPES.

We gratefully acknowledge the receipt of nine very fine clusters of grapes, from our esteemed friend and clever fruit-grower, H. M. Eogle, of the Marietta nurseries. If these fairly represent the quantity and quality of his crop the present season they most certainly indicate an unequalled success—at least as far as quality is concerned. The clusters, according to the respective varieties, were large, full, and the berries remarkably perfect and uniform in size. The Merlotin (Rogers No. 19,) large berry and color black. Wilder (Rogers, No. 4), of the same color, but less in the berry. Rogers No. 33, nearly the same size and color as the Wilder.

The Isabella and the Emocha are medium and small in size and dark in color, and the clusters of a fair size. The Lindley (Rogers, No. 9), a large red grape; and the Jona, similar in color, but small in berry and fair cluster. The Marboro and the Orton, both green in color, but differing much in size of berry. This is by no means intended as a technical description of the above-named fruit, but only an external glance at it. As to flavor, or edible qualities, of course the respective varieties more or less differ, but we don't know that we are able just now to make that difference plain in its details. Moreover, tastes also differ. Let any novice take a dozen varieties of grapes, in order to test their qualities, and by the time he gets to the bottom of the list his taste will be so much demoralized that he can hardly tell "tother from which." It may be different with an expert, but we confess we are like the unphilistined Hibernian, who, when asked which of his dozen children he liked the best, very promptly replied, "Faith, then, I like them all the best." Our gratitude, however, is not based up on the quality or external appearance of the fruit. In its donation is manifested a recognition of our humble and long continued labors as editor of the Farmer; and, although we have not in any sense demanded such recognition, yet on all occasions when it has been volunteered, it has been bestowed as a green spot in the desert of our editorial days, and we have felt duly grateful.

SOMETHING ABOUT "HAIR-WORMS" AND EELS.

In the article of our esteemed contributor, W. S. Robinson, on the Origin of Gases and the Generation of Gases, published in the August number of the Farmer (p. 117), he makes use of the following unqualified declarations on the first-named topic. "Anything of this kind" (that is, the down of young chickens), "or hairs from anything, placed in a warm wet place, and receiving air, will become living animals. They are very common at this time of the year, where stock go to drink, in the foot-prints, containing water. They differ in size and length, depending upon the part of the body from which the hair has fallen. I took the other day from the ditch, below my pond, a kind of hair that was alive; it was just as it had been taken from the comb and wrapped around the finger, and a hair-pin attacked through it. I removed the pin, shook them out in a basin of warm water; they appeared to enjoy their liberty very much."

We don't dispute the facts of our contributor's observations in regard to his "knot of hairs"; for hair-worms are usually found in such knots, and, from that very circumstance, the generic name—Gordisia—which has been given to them is derived, in allusion to the "Gordian knot" cut by Alexander the Great. But we can't believe that that knot of hairs ever belonged to a human head (even if it had a "hair-pin stuck through it"). And we would suggest that before he comes to an unqualified conclusion on the subject, he should try the experiment of animating human hairs, or the "hairs from anything." Forty years ago we devoted six months to the experiment, and signal failure; but we experimented with horse-hair, for we were assured that our living Gordisias were only animated horse-hairs. We have before us an old illustrated work on natural history, published one hundred and twenty-five years ago, in which the author gambles the idea that horse-hairs become animated, very successfully. Although the light of science seems to have exploded the theory over and over again, it has still its followers, and probably always will have, simply because mankind is disposed to judge from appearance only. Finding a saddle and bridle under a patient's bed, is no evidence that he has eaten a horse.

We have found these Gordisias or Hair-worms in roadside pools; in enclosures where such domestic animals were allowed to intrude, in the bodies of beetles and grasshoppers; in the seed cavities of apples; in the centre of cabbage-heads; and, they, or species allied to them, have been found in the eyes of horses, in the brain of birds, in the bodies of calves, pigs and sheep, and in the tracheae of fowls; and they have generally been found knotted or tangled, except when found very small. Nor is that all. In the museum of the Linnean Society we have a female Hair-worm that has a string of eggs externally attached to her, and another specimen in which the eggs can be seen within her body. Still, we do not consider that our observations are final, but we think that our contributor has taken a too narrow and lusty view of the subject.

We are not now, and never have been, a Galliniculturist, and pretend to no special knowledge on the subject of the diseases that are common to the feathered tribes. We are always willing to accord all the merit we possibly can to the theories and opinions of those who profess an experimental knowledge of the life, habits, qualities and diseases of the "poultry world," but we confess we are not prepared to receive the doctrine that heat and moisture will transmute the down of little chickens into Annelid, or "gape-worms." We are compelled to doubt it, even if such doubt should consign us to the company of those who in another instance were wont to ask, "Have any of the doctors believed on him?" We mean no disrespect, but we think the doctrine needs revision and further confirmation. No doubt our contributor is sincere, and the appearances may be quite satisfactory to him, for we observe in an explanatory paper on the same subject, published in the September number of the Farmer (p. 123), he reiterates some views of his, and adds, "If the chick did not take cold there would be no gape-worm." A view, which, instead of simplifying only complicates the
question. We supposed that those who were practically connected with poultry culture, and who ought to have some knowledge of the diseases that are contiguous to that business, would have given their views upon the subject.

As to the question of the breeding of eels, we are confident, from personal observation, that the young ascend the streams in the spring and descend them in the fall in very large numbers; but, at the same time, we do not deny that there are individuals, it not species, that become local in their habits. Indeed, some thirty years ago, we visited in Lancaster county, in which our eels had been long previously introduced, and in which they became very large, weighing as much as ten pounds, and out of which they could not have migrated without going some distance over land; nor could there have been any migration into it, for it was at least thirty miles distant from the river, and the discharge of water from the lake was small and precarious, and as their presence was continuous and the fish very large, the inference is that they must have inhabited the lake for many years. In former numbers of the Farmer we have given our observations on the migration of eels in the Susquehanna, and these have been corroborated by intelligent authority.

It seems a little singular that the most experienced pisciculturists and naturalists have never placed on record the easy and certain mode of eel generation that our contributor does. In the September number of the Farmer, commencing on page 133, is an article, abridged from a larger article published in Blackwood's Magazine, in which the writer puts a different face on the matter. He reiterates the doctrine that eels are other than serpentes, but on the contrary viviparous, or perhaps ovo-viviparous. As some other fishes, and also some snakes possess these different characteristics, it is not impossible they may be extended to some species of eels. Under any circumstances, it shows that the simple process of eel-generation is not a definitely settled question, however confident different observers may be in the finality of their theories.

We speak that which we do know on the subject, and it is, that eels ascend the Susquehanna river in the spring, and descend in the fall; whether the habit is universal or not, it at least exists.

KITCHEN GARDEN FOR OCTOBER.

In the Middle States, the labors of the gardener are varied, as during the preceding month; but he who then neglected duties necessary to be done, has lost time not to be regained—the autumn is upon him. Seeds of a few varieties may still be sown. The principal labors are, however, the protection of crops, already grown, training, pruning, and setting out trees and shrubs. Asparagus—beds. Cabbage plant out in light land for next season's use. Beets and carrots store now, or early next month. Lettuce plant out for next spring. Potatoes dig. Spinach sow at once, if not sown last month. Vacant ground, trench. (Landreth's Rural Register.)

And when you sow spinach, don't forget the extra curled Blomdale, an improvement on the best former stock. This edible plant was introduced and named by Landreth's many years ago, and is conceded by all gardeners to be the very best nut under cultivation in this country. Very productive in leaf, thick foliage, and deeply corrugated, very like a Savoy cabbage.

How not to Apply Stable Manure.

"The worst method of applying manure is to place it in small piles all over the field, and allow it to remain to be leached by every rain storm. The spots thus covered soon become saturated, and, in loose, open soil, the soluble soak into the subsoil, or is carried away in drains (if any exist), thus forcing an overgrowth on these spots, and a baldness in other places. Manure when carried to the field, should be at once spread and ploughed in, if not intended as a top dressing."

Good wholesome advice, but one would hardly suppose that any intelligent farmer of the present period needed it; and yet, now and then, these neglected piles of manure may be seen for weeks after they have been hauled on the land. Some other work has been considered of more importance, and the manure-spraying has been compelled to await a more convenient season. Like a good many other manual operations of the household, that which is last ought absolutely to be the first.

NECROPHORE.

The Burying Beetle, Alias Clarion Beetle.

The word Necrophore is derived two Greek words signifying a dead body and a carrier; and is applied to a genus of beetles named Necrophorus, of which there are about twenty species in the United States, that have been described, named and catalogued. They belong to the family Silphidae, called after Silphia, the typical genus of the family group, an arbitrary term, perhaps, of which the derivation is not clear. In plain English the different genera of the family are usually denominated "scavenger beetles," and they perform an important function in the economy of nature. This mid October weather revives them and brings them abroad; and to-day (6th) one was captured by the senior reporter of the Intelligence and placed in our possession. This is Necrophorus macer, about an inch in length, in color black, with transverse orange marks on the wing covers. The individual of this genus are commonly called "sexton beetles," or "burying beetles," from a singular habit they have of burying the substances in which they deposit their eggs. Perhaps I ought also to state that the name of "carrion beetle" has been very generally applied to the family, and wherever there is a putrid carrion exposed there you may find them, their eogens and their more remote offspring relatives. But Necrophorus has a peculiar habit that do not perlude the whole family. If the carcass is large, for instance that of a horse, ox, sheep, swine, dog, &c., these beetles will make no attempt to bury it; except, perhaps, a small detached portion of it. But when it finds the dead carcass of a toad, a rat, a mouse, or a small bird, it forwih commences to bury it, in which habit the sexes unite. They dig out the earth from under it, and when the carcass sinks down a little below the surrounding level, they cover it with the earth removed in making the excavation. Into this nidus the eggs are deposited, the larvae are hatched and matured. Exposed to the hot sun and the rapid decomposition, assisted by the various species of "Blow-flies," their larvae could not become fully developed, and hence would perish. There are districts in Mexico and South America, where carrion-beetles are not known; the air is so pure and dry that carcasses become "jerked" or dried, before decomposition takes place. Our domestic culture is too short to prolong decomposition. The name of "Buzzard-beetle" suggested by the aforesaid reporter, would be appropriate; because as a scavenger and for its size it will compare with the "Buz."

SEEDLING PEACH.

EPHRATA, Pa., October 12th, 1882.

PROF. S. R. HAYS: Hereewith we send you a late seedling peach. It is a small sized peach. Having noticed it two years ago we then thought it merited further notice. This year the tree is full again of very fine peaches. We do not think that there is a finer peach out. We want your opinion whether you think it is worth propagating; or if anything is out at all to let us know what it is. You may report in the Farmer or by mail, as you think proper.

Respectfully,

S. R. HAYS & SON.

Your peach was duly received, and almost immediately submitted to the practical test of Messrs. H. M. Engie, J. C. Linville and W. L. Hershey—three members of the Lancaster Agricultural Society—and they unhesitatingly concluded that it is worthy of propagation and distribution, in which we heartily coincide. Good late peaches are very desirable, and this seems to fill the bill. There seems to be some indecision as to the variety, but the preponderance of opinion is that it is a "Salway," or a cross between that variety and "Kieffer's Smock." Mr. Engle happened to have a Smock with him, so that we were able to compare. In external appearance it closely resembles the Smock, but is more acid—not so sweet. The Smock is a foreign peach, and was originated by the celebrated Mr. Hicknel, of England. We had not a Salway to compare it with, but if it differs from that variety in appearance flavor, texture and habit, of course, you will have the privilege of naming it as a new variety. Therefore, we would say, "go ahead," give it a wide circulation, and you will be doing a good work for the late peach crop of Lancaster county. There is, however, a later peach cultivated in the county. Mr. Windolph, of Marietta, we think, has a variety that will not ripen before the 20th of October. Probably some of yours may continue until that date.

One writer on seedling truly says: "It will assist enormously in making mankind independent of the weather, for the constant use of the plow and the cultivator, and the raising of strong, growing crops will greatly obviate the difficulties from drought while the serious loss and expense of harvesting crops in wet seasons will be greatly diminished by this method of preserving food."
CONTRIBUTIONS.

FOR THE LANCASTER FARMER.

THE VALUE OF CLOVER ON LAND.

The grass crop is said to be one of the three greatest crops of the country, and we may safely say that clover is the most valuable of all the grass crops.

After our land has lost its virgin soil from the cultivation of crops we must use some means to renovate it again, to bring it back to its virgin soil, which to accomplish we must necessarily use some artificial means.

I presume the object of the question was to discuss the value and benefits of clover, and its effect on our lands over grasses. No grass and no hay, no manure; no manure, no hay.

One among many other ways to bring our worn out lands to their virgin soil again is to let it rest with a crop of grass, and I could recommend no better than clover. It may make an inferior hay to some others, such as timothy and blue or meadow grass, but it comes up quicker and endures more pasturing, keeps the soil covered more, draws more from the atmosphere than other grasses, makes more milk, and lastly, keeps a better mulch or top dressing, which we all know to be so essential to keep up the soil. This mulch serves the same as the foliage of trees, which serves to feed the soil.

Another good effect we must not forget, namely; the turning down of this grass, which keeps the soil loose and mellow to retain the rain.

I think about the latter end of March or the beginning of April a good time to sow clover seed, providing the weather is favorable; about six quarts to the acre or one bushel on five acres, on wheat or rye. After harvest good judgment and discretion ought to be used to treat it to its best advantage.

If dry weather, do not pasture too close, not-withstanding turning cattle on to tramp it solid has a good effect. The draught can not search it so severely. Keep it covered all the time. It is decidedly the best crop of grass for the land. Timothy may be more valuable, at least in my judgment may bring more from the acres, but will exhaust the land more, and is admitted to leave the soil more compact and hard than clover. Now, I would say, if you try clover and it has not the effect you think it ought to have, sow more.

In another thing, which will be adopted in the near future, clover will have the advantage over all other grass-soiling. A farmer can cut his grass and begin again at the beginning when he is through, and so repeat a number of times; more so than any other grass.—P. S. R.

FOR THE LANCASTER FARMER.

THE LEAVES.

It is said that the leaves are the lungs of trees, through which the sap passes before it is taken up by the growing fruit, and that by this process it (the sap) gets its supply of vitality from the air, as the lungs do in passing through the lungs of the body. That leaves are essential to the growth of the fruit is evident to my mind from the condition I find my grapes in this season. Early in the summer I observed that the leaves were attacked on the underside by a little fly, whose depredations gave the leaf a speckled appearance, and many of them withered and died. I once had a mind to use a nbeck, and down the vines from underneath, with an abundance of water from the hydrant, but I neglected to do it. Now (Sept. 8) nearly all the leaves are half dead, and many of the grapes are wilting and failing off; and, although the vines are full, I fear there will be but a scant crop of grapes fit for use. Some remedy ought to be provided to prevent these "what-do-you-call-them" from destroying the grape fruit.

Please call and see my vines, and then say in your excellent Farmer what you think. — J. F. W., Lancaster, Pa.

FOR THE LANCASTER FARMER.

SAVE THE PEECH STONES.

Mr. Rothum, Ed. : In this month's issue of your Journal, an article (Save the Peach Stones) is timely, and to show the importance of it I will give a few instances of success, without even trying.

From an orchard not far from here La Grange Peaches grew, and a party taking some with him home, there came up a tree somewhat resembling the parent, but larger, better and later, and which I named Steadly, that is now flourishing from New Jersey to the middle of Texas, and giving general satisfaction. But for my discovering it, it would never have been known outside of the immediate neighborhood. A few years after I got it the original tree was carried down the Missouri river, and now steamboats pass where it stood. Another instance is, a Miss Ellen Fauner took some fine late yellow clingkins to one of my daughters, in Hermann, Texas, some years ago, who, being a horticulturist, told me they were so fine that I ought to procure buds. It was then too late for that season; but the year following I sent for buds, but the tree was diseased, and nothing but a few feeble twigs were got. Thinking it would possibly recover, the buds were set, and, to my surprise, in the following season they made fine trees, apparently healthy and quite vigorous. In the same year the old tree died, and would have been gone irretrievably had I not saved it.

Now there are three trees here bearing fruit, and fruit it is. About as late as a peach can ripen. The largest size specimens measuring 12 inches in circumference, and weighing 14 ounces. Some on the trees yet, which may still be Christmas if you're wise.

Form near round, deep yellow, with a red check. Flesh yellow next the skin; but nearly blood red at the stone, which red extends fully half way out, and grows paler as it recedes from the stone. Highly aromatic, but not so sweet as the heath cling, a cling stone, named Ellen Fauner. But my own experience with early ones is what was intended more particularly in this article. About six years ago about 200 stones of Hale's Early were planted in nursery beds for the purpose of budding early varieties upon, and perseverance something new in case some were left un budded. This season about fifty of them bear fruit. Some identical with the Hale, and roated just as had; some very inferior, while about twelve were really valuable. But only three were noticed particularly, and the trees numbered as they were discovered, Nos. 2 and 3. They came in within a few days of August, and lasted until that variety was gone. Nos. 2 and 4 are larger, hand some and better than the Hale, and No. 3 not quite as large as the others, but as handsome as anything could be. An extensive nurseryman told me that he could sell trees of them at fifty cents apiece if his agents had a painting of them and my recommendation of them. But I only bade for my own use, not wishing to add to the already numerous list of peaches, although I added some twenty more varieties to my collection this season.

In planting the stones of choice varieties I think one can count upon at least one-half not worth growing. I have always such content on, and if they don't suit me, lead them, frequently building on limbs two inches in diameter, and which will grow large enough to bear half a bushel on one limb. We fruited about forty varieties this season; and in all my time of observation, fifty years, never saw them so fine, nor ever expect to see such again.—Samuel Miller, Bluffton, Missouri, Sept. 25, 1882.

SELECTIONS.

FIGHTING THE PHYLLLOXERA IN EUROPE.

The destruction to which the grape crop of France and Germany is subjected on the appearance of the phylloxera in the vineyards has been the cause of much study and investigation by wine-producers and scientific men, to find out the most practical and economical means of preventing these pestilential insects from pursuing their course of devastation.

In order to form an idea as to what extent the grape crop of France suffered by the phylloxera of 1881, it is only necessary to refer to a report made to the Department of State by our able consuls at Bordeaux. He reports that the vineyards were destroyed; there were 100,000 hectares of vineyards destroyed in 1881, against 37,000 hectares in 1889.

But of the various remedies recommended for destroying the phylloxera, the results obtained from the use of bisulphide of carbon and potassium sulpho-carbonate have been most satisfactory. By comparing the condition of the vines treated respectively with bisulphide of carbon and potassium sulpho-carbonate, it was found that in the former case they grew stronger and remained green for a longer period than those under the influence of the latter; or the potassium sulpho-carbonate treatment, but the yield of grapes was not so good.

It appears that the use of bisulphide of carbon in the vineyards of France in 1881 did not have the desired effect which Pasteur, from personal observations made, was attributed to the extreme amount of moisture contained in the soil during that season. The same authority, having obtained good results from its use in his vineyards, makes the following suggestions as his experience:

1. Only those vines should be treated whose diseased condition has not been of long standing.

2. The treatment to be continued during...
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October.

The winter only by normal temperatures, and discontinued as soon as the temperature begins to fall too low.

3. The soil must be good and dry.

4. If the vines are in a compact soil and the phylloxera is old, the number of holes in the soil should be increased and only small doses of the bismuth of carbon administered.

5. The manuring must be strong, and potash salts applied in conjunction with stable manure.

6. The condition of the vines, must be watched closely, and if, after one or two years, the insects have been entirely destroyed, the treatment is to be discontinued; but if there are a few still remaining unkillled the bismuth of carbon should be resumed only in very moderate doses.

As a preventive against the plague, Avignon recommends the use of common tar. Gayon has carried on investigations with the view of finding out such organisms that could live as parasites on the phylloxera, but as yet his efforts have not been very successful. Thurnher writes concerning the proposed method of Goulion Depret in the use of bromine against the phylloxera that, besides its being an expensive one, the injurious effects it produces on the health of the workmen renders it quite dangerous.

With reference to the treatment of phylloxera-attacked vines with potassium sulphon-carbante, P. Mouille, who has had eight years' experience with its use, makes the following observations:

1. The application of sulphon-carbante before or in the beginning of the phylloxera invasion will prevent its increase in the vineyards and allow to the vines the power of producing their normal yield of grapes.

2. From its use the destruction of the vines will be lessened and the sickest ones restored under all climatic influence.

3. Sulphon-carbante is a matter of the first quality.

Mouillfort claims that by the judicious use of sulphon-carbante it is a complete means of fighting against this terrible enemy to the grape crop.

In conclusion, I would say that the prospects of this year's grape crop in Germany are most favorable, and an abundant crop is predicted. The season thus far has been extraordinarily propitious for all other crops.—

Wm. D. Wampler, Commercial Agent of Duschold.

Protecting Plants during Winter.

The utility of protecting plants during winter is not sufficiently appreciated; even those of reputed hardiness in any given climate will well pay the expense of partial protection from the severity of low temperatures. It is sometimes remarked that a plant to be fitted for general cultivation must have, amongst its good qualities, the faculty of taking care of itself at all seasons; but it must be remembered that the majority of plants, grown for the sake of their products, have been removed from their natural conditions, by change of climate, selection, crossing, hybridizing, &c., to such conditions as are found most conducing towards realizing the peculiar fruit; so each person, though in the closest communion and intercourse with others, and surrounded by similar influences, must be himself, and must do his own duties, confide his own struggles, resist his own temptations, and suffer his own penalties.

The preservative placed upon co-operation for security from evil, and too little reliance upon personal watchfulness and exertion. There are some who seem to feel in a great measure relieved from obligations if they do not receive such aid, and some will plead the shortcomings of others as an excuse for their own.

We would by no means disparage the effect of influence or discouragement in the slightest the generous assistance which we all owe to one another, or undervalue the important effect of a worthy example. These are vital ele-

ments of growth, and their results can never be fully estimated. But they should not usurp the place of a proper self-reliance; nor diminish the exercise of individual powers. Moral force must be a personal possession. It can never be transferred; and while we gladly welcome whatever is good from all sources, it can only be food that must be digested before it can truly nourish us. Material benefits may be conferred by simple gift, but mental and moral activities can only be sustained by their own exercise. Thoughts may be changed but thought powers; moral help and encouragement may be given, but virtue cannot be transferred; responsibility cannot be shifted.

The most permanent good we can do to others is to nourish their individual strength. To aid the physically destitute most effectively, food, fuel and clothing are not nearly so valuable as steady remunerative employment. To educate a child is not half so important as to instill large amounts of information as to set his mind to work, to bring out his mental powers, to stimulate his thought and quicken his faculties. And in moral life, especially in cities, where masses together, and men inclined to be independent, the best lesson to enforce is, that virtue, to exist at all, must be strictly individual. That which cannot stand alone, but depends on props and supports, which needs the constant spur of fear and the bribe of reward, to insure its activity, is but the semblance of virtue and will crumble before temptation. A well developed body ever excites admiration, but a well-developed and self-reliant spirit is a nobler thing. It is calm, modest and unsuspecting, yet firm in conscious integrity of purpose and steadiness of aim. Inflated by no vanity it is at once humble yet courageous; helpful to the tempted, and yet resolute in assailing evil.

The Preservation of Forests from Wanton Destruction, and Tree Planting.

The greater part of the North American continent was covered with forests when first invaded by Europeans. These forests had stood for many years undisturbed, except by the slow decay of one generation of trees, if we may so speak, and the slow growth of another. These operations had been going on simultaneously since the creation, or since the last great convulsion of nature, and the annual falling of leaves and the gradual decay of branches and trunks had covered he
A Universal Mine of Wealth.

This would, possessing all the elements of fertility, was an immense treasure, everywhere abounding, and tempting the settler to clear away the trees and reap the benefit of the virgin soil. When trees were cut down, a crop, which in many instances required several hundred years to grow, was reaped in a few weeks or years, thereby leaving the earth bare, and the vegetable mould used up in a few years by continued cropping in wheat, corn and potatoes. The writer knew an excellent bush lot which produced great crops at first to be reduced in less than ten years to mere rocks and stones. And this process of exhausting the vegetable soil went on everywhere as fast as settlements advanced. Of course where the subsoil was good and was turned up in part to mix with the vegetable mould, fertility continued much longer, but, in course of time, all, that was due to previous usage, were reduced so much in fertility as to require the application of fertilizers at great expense. Had the soil at first required these fertilizers the progress of settlement would have been exceedingly slow or more probably there would have been no progress at all.

War Against Trees and Its Effects.

The labor of cutting down great trees, cutting them into short logs and piling them up in log heaps to barn, was, however, so great, that a feeling of dislike to trees as the settler's natural enemy began general, and the ven-geance against them was so great that in extensive regions the land was completely bored, and rendered thus not only unsightly but un-sheltered. Bleak winds had full play and droughts parched the earth. What was even worse, the clearing away of trees on the hills and mountains by the settlers, the lumbermen and forest fires, left the snow of winter exposed to the spring sun; and the sudden melting and running off of this accumulation of frozen water made dangerous floods in the streams in early summer and left those streams nearly dry in the hot season.

Calling a Hallo.

At length the evil results of the indiscriminate cutting down of trees began to be perceived. The improvidence of previous generations was lamented, and efforts to conserve what forests were left and to plant trees, gradually became popular. The first class of efforts was directed to preserving a few acres of the original forest in each farm where still could be done, and merely thinning the trees for firewood, fencing, &c, thus leaving the smaller trees room to grow more rapidly. The grove thus preserved became one of the most necessary and valuable portions of the farm, and that without any labor of plowing, sowing or cultivating. It also afforded a delightful shade in hot weather for man and beast.

Forests in the Territories.

The preservation of the vast forests in the Territories belonging to the nation attracted attention also, and laws were enacted to protect them from wanton waste. Secretary of the Interior Schurz distinguished himself for endeavoring to enforce these laws, which are very difficult of execution on account of the perpetually lumbermen have in an almost uninhabited region for cutting trees on Government land, and the frequency of forest fires kindled by careless Indians, hunters, trappers and lumbermen settlers. These fires often do more damage to forests in a few days than lumbermen could do in as many years, and how to prevent them is yet an unsolved problem.

Forestry Laws.

The only remedy, and that only a partial one, that can be suggested, for the wanton destruction of forests, is a national system of forestry laws somewhat similar to those of France, Germany, Austria, Norway and other European countries, which prohibit, under severe penalties, the injury or destruction of trees by unauthorized persons; and also the kindling of fires, or even smoking in the woods. A forest police was created to see to the execution of these laws, and at the same time providing for the utilizing of forests by gradual thinning out and selling the largest trees, and allowing set up of smaller ones. In this way the public forests are an annual source of revenue, and after centuries of such management they are in as good condition as they were at first.

Judicious Thinning.

In passing through Pittsburg, N. Y., on the writer saw the Saranac thickly covered with sawed lumber, and he asked an old gentleman if that river was not yet lumbered out. The reply was, "I have known it for 60 years, and the quantity of lumber coming down has been pretty much the same all the time. There is as much now as there was 60 years ago." This shows the result of a judicious system of thinning forests.

A Commissioner of Woods and Forest.

If the United States, and each State had a department of woods and forests, with a suitable head and the necessary subordinates, much could be done, not only for the preservation of forests belonging to the public, but to persuade settlers to leave a suitable portion of their farms in wood, and to counsel from time to time in public documents, not only care in building present forests, but some general system of tree planting by States, corporations, and individuals, so as to provide a supply of timber for the future.

Tree Planting.

The second branch of this great subject is tree planting, and here credit must be given to the United States Government for its encouragement of this necessary work in the sparsely. The law giving 100 acres to anyone who will plant and maintain for a few years 40 acres in trees, has had a great effect already in providing for a future supply of timber in the prairie States; those groves will also break the terrible prairie "blizzards," and, probably, to some extent, attract rain-clouds to mitigate prairie droughts. A fine spirit of tree-planting has also been manifested in many cities and villages; and "Arbor Day," or a day set apart in spring for tree planting, has become, in some parts of the country, an institution for the purpose of beautifying streets and public and private grounds.

Planting Trees on Public Roadsides.

The public roads should be lined on each side with trees, which, when grown, would do something toward sheltering and beautifying the country everywhere; but along railroads there should be something more than isolated trees. There should be a rather broad belt on the windy side, thickly planted with the various kinds of trees needed for repairing the roads. This belt would shelter the railway from storms, catch and retain the winter's snows which gives us so much trouble, and, before many years, supply much useful timber when the supply from other sources might be exhausted.

Tree Planting on Farms.

Every farm should have a belt of timber planted all along its windy side; this belt, not less than fifty feet wide, should be planted thickly with the various kinds of trees that grow best and fastest in the neighborhood, the thinnings of which for useful purposes would soon be valuable, whilst the shelter it would give from prevailing winds would be invaluable. All swamps not covered with trees should be planted with white and red cedar and tamarack, all of which grow best in damp ground, and produce the most excellent timber for various purposes. The leaves also of these trees would absorb the unhealthy air which swamps generate.

Stony Ground.

There is on many farms more or less of ground so rocky that it will not repay the expense of cultivation, and all of such spots should be planted with trees. These may be got out of the woods or farm nurseries, or what would be easier, cheaper and probably much more effectual, the seeds of various kinds of trees could be sown, imitating as nearly as possible the natural processes which have produced all the forests of the country. The seeds of the different trees should be gathered in the woods just at the time that they fall naturally, and they should be immediately planted in little shallow holes among the stones and covered with a little earth. There the rains of autumn, the snows of winter, and the sunshine of spring would bring up quite a crop of young trees, which should be fenced in from cattle and left to themselves. They would require no labor after the first sowing and fencing except subsequent thinning out from year to year of those that were too crowded or most valuable for economic purposes. If hickory nuts, black walnuts, butternuts, chestnuts and the seeds of sugar maples, plumes and spruces were any of them or all of them sown everywhere and thereover the place intended for a grove the most valuable kinds and those that thrive best could be ultimately left to become great trees. After ten years the annual thinnings of this grove for firewood, fencing, hop-poles, railroad ties, &c, would probably make it as valuable a part of the farm as any other, and when the black walnut and butternut trees became large enough to be sold to cabinet-makers the value of the grove would be very great. The present race of farmers may say that they would not live to see the trees become fit for the cabinets, &c, but, none the less would the growth of that grove increase the value of the farm every year, and that whether the owner sold it or left it to his children.

A Forestry Commissioner.

What is very much needed as a preliminary to a covering of a considerable portion of the
THE LANCASTER FARMER.

land with these groves is the advice of scien-
tists and experts as to the kind of trees suitable
for different soils, the rapidity of their growth
and the relative value of their wood.
This information should be collected and
scattered by a judicial commissioner of woods and
forests in each State, just as the 3rd com-
missoners now give information about fishes.
To plant or sow millions of trees is just as
necessary as to hatch and distribute millions of
foolish.

The Dominion.

With respect to the Dominion of Canada
there is great need first of all in planting in the
fertile valley of St. Lawrence for a con-
siderable distance around Montreal, and still
more need in the prairies of the northwest.
In the latter region of vast capabilities, to which
much attention is now turned, a system of
granting land on condition of planting trees
might be most advantageously introduced
now, as every year will render such an
arrangement more difficult.
The other provin-
ces of the Dominion are still well supplied
with timber, and the system of selling "lim-
ber limits" to lumbermen is conservative of the
forests, but there is need for great pro-
cation of the forest's waste and useless
valuable timber.
A capable commissioner of
woods and forests for the Dominion would
therefore prove a valuable functionary, if he
were not only an expert, but an enthusiast in
forestry, as otherwise his appointment would
merely add another salary to the expenses of
Government.

CULTIVATION OF PEPPERS.

Black and white pepper grow on the same
vine; and green pepper-berries, just before
maturity, after gathering, turn black and
make "black pepper," while "white pepper"
is obtained by gathering the berries—fire-red
in color—when fully ripe, and, through long
soaking in water and subsequent stirring and
shaking, relieve the berries of the outer skin;
whereafter the latter, on being dry, become
white.

In what country the pepper-vine originated
I am unable to say; but Eastern history shows that
the northern half of Sumatra, the once mighty
old spice-route of Acheen (pro-
nounced Atjeh, by the Malays), when the
Portuguese, Dutch, and British (in rotation)
came to that country, was far-famed for that
spice, which, when it arrived in Acheen Busir in
North Sumatra (near the entrance of the Straits
of Malacca), the native traders from many Eastern
countries and islands, who there ex-
changed the products of their countries or
purchased for cash. And during the reign of
Queen Elizabeth and her successor, King
James, a British naval squadron visited
Acheen and met with a hearty reception from
the Sultan; succeeded in making a treaty of
peace and commerce with him, and, as a re-
sult, in establishing factories for and of the
British East India Company.

After the British East India Company, during
the late century, acquired the island of
Penang from the Rajah of Kedah, a Siamese
sovereign (much interesting history is attached
to this acquisition,) so favorably situated for
commercial purposes, and made it a very im-
portant factory and place of residence for a

subgovernor (the famous Sir Stanford Raffles
resided there for a long time) the great
Acheen trade gradually drifted to Pulai-
Penang (Prince of Wales Island,) and with it the
pepper trade, principally. At that time
Singapore had not been acquired by the Brit-
ish, and not before 1819, when the island
was covered with a dense jungle.

After the acquisition of the British by the
natives on the west province of Malacca, especially
in the Province of Penang, a Siamese sover-
eign, commenced to plant pepper, and
with excellent success; and now it is exten-
sively planted by Malays and Chinese
in many places on the peninsulas of Mal-
aca, also in Siam, Cochlin China, and in Sara-
walk, Borneo. That grown in the southern
part of the peninsula and on the island of
Singapore, known in the market as "Singa-
pore pepper," is by far the best, commanding
a higher price than Acheen pepper.

Penang maintained the Acheen pepper trade
until the Dutch commenced their war of
conquest in Acheen in 1874, blocking the coast
and preventing the exports of all Acheen-
ese products. At that time, owing to the spread
of wild rumors about the destruction of the
pepper gardens in Acheen, etc., pepper
reached the figure of $4 for a short time. It
was feared the supplies from Acheen being
cut off, that the spice would become scarce,
and as a consequence many Chinese planters
increased its cultivation; in fact, to such ex-
tent that the Acheen war was no longer look-
ed upon as the cause of influence in prices.
Lancashire is the principal consumer of certain
Acheenese provinces, having submitted to Dutch rule,
were allowed to send pepper to Penang on
vessels having a permit from the Dutch consul
in Penang to supply them with rice and other
needed goods. Then it happened that some
of the jahors who had submitted to the Dutch,
after having been pretty well supplied with the
necessities of life, turned truant again,
and, as a consequence, their coasts were again
blocked, or it was discovered that some of
them had received contraband of war, and
were, therefore, put under close restrictions.
At any rate, the "old Acheen trade at Penang
has been seriously crippled since that war
commenced, but contractors in Penang profit-
ed heavily by supplying the Dutch army in
Acheen, owing to the proximity, with beef
and many other necessities of life.
The Dutch are now making efforts to make
"Ole-Sch," the old port of Acheen Buzar, in
fact well protected by a fort and man-of-war,
trafficking port, and to export "Acheen pepper
from Acheen" themselves; at least, so the
Java and Singapore papers inform, and I pre-
sume they will. As I shall in a future report
write about Sumatra and her provinces again,
I will not now enter upon any further details
about "Atjeh.

As to the pepper vine, it presents a very
handsome appearance; a pepper garden at a
distance looks like a "hop-yard." Some plant-
ers, however, trellis the vine, and I think
myself that it is the best plan. It grows every-
where round about here very easily and luxu-
riantly on fair upland soil, and, like the grape-
vine, needs occasional pruning, weeding and
fertilizing.
With a little care and attention it
yields abundantly and proves a good source
of income. The quantity of pepper exported
annually from the Malay peninsula and ports
in Dutch India is simply immense, and is al-
most exclusively planted, gathered and
brought to market by natives, Malays and
Chinamen chiefly.

HOW TO BOTTLE WINE.

Every wine-owner, wishing to bottle his
wine, should analyze it to ascertain what
proportion of alcohol, sugar and neutral con-
stituents it contains, for the production of
effervescence, which is a very important op-
eration; and the breakage which might arise
from an excess of saccharine matter would
lead to very serious losses.

To help the formation of effervescence, if
the wine has not enough sugar in it, more
is given to it by means of a preparation called
"liqueur," or sirup, which is nothing but
pure wine containing candied sugar in solu-
tion, and is composed of 100 kilos of candied
sugar to 100 liters of wine.
The analysis
of the wine having been made beforehand, it is
easy to calculate the amount of sirup to be
inserted. An almost exact measure can be
taken with the help of a winometer.

At this time much care must be taken in
the choice of bottles, to the regularity of
shape, to their color, and especially to their
superior strength. It is worse than useless to
use poor bottles. The bottles are thoroughly
rinsed, perfectly dried, and before being filled
are carefully inspected, both inside and out-
side.

When the wine and bottles are ready the
workmen proceed to drawing or bottling, an
operation which is effected by means of taps
with six, eight, or ten spouts.

The bottles when filled pass into the hands
of the corker. The methods of corking most
in use are done with a mullet.

When the bottle is corked the cork must be
secured. This third operation is the "wiring,"
to effect which short pieces of wire are looped
in the middle and fitted under the ring at the
top of the neck of the bottle, and for which
a wiring machine is used.

The bottles are then stored in the wine-
vaults, or left in the cellars, as the case may
be, where they are stacked with regular
lattices. In hot years fermentation sets in
sooner; the sugar is decomposed by the acids
in the wine; carbonic acid is set free; alcohol
is produced, and a deposit; effervescence
takes place, and the weaker bottles break.
They are then removed as soon as possible to
the vaults, after being marked on the upper
sides, so that they may be placed in the same
position as before, the marking being made
with white chalk. These are piled in the
vaults in stacks, as in the cellars.

Often when this effervescence occurs the
deposit mentioned is of a more or less tenacious
character. As a rule it presents dark traces,
and on the side a thin, white substance, which
appears to adhere to the bottle, and which
sometimes cannot be removed by shaking the
bottle.

In the month of July, when the bottling is
over, the workmen fall in employment in
hooping, removing the defective hoops, replacing
them by new ones, &c. These are the opera-
tions included in the word "hooping," and
they, with the vintage, lead us to the time of
early frost.
At this time some houses bring what they have bottled up again to the upper cellar. This is a good plan, as the cold helps the deposit to dry. Others content themselves with changing their position, removing the leacy and broken bottles, and making new piles of bottles. It is at this time also that attention is paid to the unknown, the name given to the deposit on the side of the bottle, and which must be removed. This deposit is removed by means of a machine which consists of a box, into which are placed two bottles having this deposit in them; by means of a handle a rotary motion is imparted to the bottles, which are further subjected to continual blows from two little hammers. These continued shocks produce a shaking which is sufficient to detach the adhesive deposit. The removal by hand requires much more attention. The workman is supplied with an iron implement, and has to take care to hit only just hard enough to detach the crust. If he were to hit too hard it might give rise to accident.

When the bottles are entirely cleared of deposit they are placed neck downward, either on tables or on racks. The latter having certainly the advantage of taking up less room than rows of tables.

After being kept for some time in this position, the wine should be shaken, so as to make all the deposits fall on the cork. This is an important operation, and great care is taken in the selection of workmen to do it. It is done by very slightly lifting the bottle, and giving it a shake or two in that position. To be successful this issue requires a month or six weeks, or even more, the bottle being moved every day. When the deposit has altogether settled on the cork, the good bottles are placed in stacks, with necks down, at a sharp angle, to await the time when they are again uncorked. The rest are replaced and “worked” a second time on the racks.

The uncorking is also a difficult and delicate operation. It is necessary to remove the cork and wiring with the least possible loss of wine, the bottle being all the time kept neck downward. To do this the workmen watches the bubble of air which is in the bottle, and so removes the cork that only the deposit is effaced by the rush of gas. When the froth comes he uses a part of it to wash the neck of the bottle, and then inserts a small cork prepared for the purpose, which prevents too great a loss of gas.

The bottle then passes into the hands of a man who takes out enough wine to admit the necessary amount of sirup. The wine is now very “dry” and would not be very drinkable, although some countries, especially England, will have nothing but dry wines. This dryness is corrected by the addition of what is called the “export sirup,” which differs from what is put in at the time of the bottling. It is composed of 10 kilos of candied sugar to 100 liters of wine, and three quarters of alcohol, which is added to increase the strength. As the sugar dissolves, the wine becomes thick, and must be filtered to make the liquid perfectly clear.

The bottles, when opened and emptied to a certain depth, are taken to the “mixer.” The mixing consists in putting into each a certain equal quantity of sirup, the precise portion differing for each country. When a bottle is not full enough it is filled with a little wine. The bottle is then placed on a revolving table, and as it revolves all the bottles in turn come to the corker.

This second and final corking requires more care than the first. The corks used are of Spanish cork, soft and strong, hard and full, or red corks, according to the country the wine is to be sent to; they are soaked for a few days before in cold water to soften them, and they bear the name of the manufacturing firm branded on the end which enters the bottle.

For the final corking before dispatch, the corking machine is often a roller machine, but others are also used. The cork is put into the tube, pressed and made to come level with the lower end of the tube, and with a clean sponge the few drops of water which have resulted from the compression of the cork are wiped off, and then the bottle is filled as much as is wanted and is corked, the cork being driven in to a greater or less extent, according to the destination of the wine.

The tying up is then proceeded with, oiled string being used, this being prepared for exportation, and which lasts longer in cool vaults. A new stringing machine has been invented which has been of much use. Before the invention of this machine the working of a “stringer” could only be performed for a few hours at a time, it being so hard and tiresome, but now a young man from 16 to 18 years of age can easily string bottles all day.

After the string is put on the wire is added; the kind most in use now is galvanized wire. It is at this time that the bottle is often shaken once or twice to mix the “sirup” thoroughly with the wine. Then the bottles are arranged in piles, always on ends and are left still for a month or two, being examined then to see if the cork is in order, or if it shows marks of leaking.

Then comes the packing. This is done in boxes or hampers. The bottles are in straw, or wrapped up in straw covers, which are manufactured beforehand in different manners; tin or golden leaves; caskets of wax of different colors; leaden covers, labels with the name of the house, &c.

The baskets are closed with flexible twigs or willow. Besides these fastenings some houses use a wire all around the basket; its ends sealed together with a leaden seal, so that if the receiver finds any loss when it is delivered to him, he cannot claim anything from the carrier unless the seal or fastening has been broken. The cases are closed by means of nails. They are bound with wooden or metallic bands, and some are also sealed.

When the time comes to send the wines away, the senders should take care that the wines are in their right positions, i.e., recumbent. When the wine has reached its destination it should be taken into a cool place and laid down horizontally. It should not be used for a full fortnight, or even for a longer time, as the traveling injures it, and it would be unfair to judge of the wine on immediate arrival.—John L. Frisbie.

PRACICAL FORESTRY ILLUSTRATED.

A quartette of our Lancaster disciples of Blackstone, composed of W. R. Wilson, Simon P. Kly, A. F. Hostetter and Andrew M. Frantz, Esqs., visited our well-known rural friend of Warwick, Mr. Levi S. Reist, who is more than any other man in Lancaster the self-constituted chief of the planting of new forests. Mr. Reist was honored lately with a personal invitation to attend the American Forest Convention, sitting at Montreal, in the British dominion. The new forest, comprising about twenty-five acres, has been named as above in commemoration of an aboriginal settlement of American Indians occupying the same spot in the early history of the country, called the “Lo Hoy” settlement. The ground occupied by the new forest was under the plough as common farms, and as late as twenty years ago. It is situated about one mile from the residence of Mr. Reist, on a high point of Gravel Hill, presenting a view for extent and variety of scenery unsurpassed. Mr. Reist owns most, if not all, the land along the roads from his residence to the forest. These roads are continuous avenues planted with trees on either side, making the passage one of great interest and pleasure to the pedestrian as well as the carriage goer.

Before reaching the new forest you pass a place devoted by Mr. Reist to horticultural and vegetable culture, where now are in full ripeness a large quantity of rare grapes and the popular Hartford in perfection. An order was left with the Superintendent to pick a basket for the party and hand it over upon the return.

The forest cannot be described in detail. Its tree growth is rank and healthy-looking, most of which was planted and reared from the seed, consisting of oak, chestnut, locust, poplar, maple, &c. There is a circuitous drive in, around and through the forest, along which the green foliage is constantly brushing the horses and carriages, up and down hill, over ravines and past sparkling springs. Aside from the utilitarian view, it is one of the most romantic and pleasurable spots in the county, which must be seen and its inspiration felt to be properly appreciated.

The order with reference to the Harrods was well executed. The superintendent handled over a basket of rich fruit, not by strick measure, but heaped full. It is needless to say that the party, under the sharpening influences of a free mountain air, pitched in pretty freely.

In view of the reckless destruction of the old forests, too much credit cannot be given to the few leading men who devote themselves to the matter of raising new forests for the use of future generations. The party was highly pleased with the visit, and would suggest that others follow their example.

Few men have more to show to interest the visitor than our friend Mr. Reist, and still fewer are so heartily disposed to make a visit instructive as well as pleasant. The party of visitors feel that it is due to their host that they should make this public acknowledgment of their satisfaction with their visit personally to Mr. Reist as well as in recognition of the noble enterprise which he has undertaken. The forest now could furnish fencing material, telegraph poles, etc., in considerable quantities. The home of Mr. Reist and its surroundings illustrate the
character of the owner for planting and re- 
newing original forest productions, the beau-
tiful Golden rod, trees loaded with the poppy 
fruit, etc., adorning the lawn.—New Era.

SUMMER.

Summer, astronomically, includes the period 
between the vernal and autumnal equinoxes, 
or from June 21, 8:08 a.m., lasting 93 days, 
14 hours and 22 minutes.

In the United States we call June, July 
and August the summer months. In Eng-
land, May, June and July are known as the 
summer months. Between the tropics there 
is, properly speaking, no summer, the hottest 
periods being when the sun passes to the 
zenith at noon, corresponding at the equator 
to our equinoxes.

Automation.

In the northern temperate zone it begins 
when the sun, in its apparent descent to the 
south, crosses the equator September 22, 10.30 
p.m., ends at the time of the sun’s greatest 
southern declination December 21st, 10.75 
a.m., lasting 89 days, 18 hours and 15 minutes.

In the United States, September, October 
and November are known as the autumn or 
fall months; in England, August, September 
and October are so called. In the Southern 
Hemisphere they have their autumn when we 
have our spring.

Winter.

Winter begins, astronomically, on the short-
est day, December 21, at 10.52 a.m., and lasts 
89 days, 1 hour and 4 minutes (March 21). In 
the U. S. winter months are commonly reck-
oned December, January and February; in 
England, November, December and January.
In the Southern Hemisphere, by the Ameri-
can style, the winter months are June, July 
and August; by the English style, May, 
June and July.

Spring.

The passage of the sun across the equator, 
when the days begin to be longer than the 
nights, is the vernal equinox. In the North-
ern Hemisphere this occurs March 20, at 
11.50 a.m., when spring begins. Spring lasts 
92 days, 29 hours and 12 minutes. In the 
United States, March, April and May are 
popularly known as the spring months; in 
England, February, March and April.

HOW TO KEEP HOUSES HEALTHY.

The custom of working or exercising horses 
directly after eating; or feeding after hard 
work, and before they are thoroughly rest-
entially at noon when both these violations of 
a natural law are committed; these are the pre-
disposing causes of pinkeye, and of most dis-
tases that effect our horses. Keep the horse 
quiet, dry, warm, and in a pure atmosphere, 
the nearer outdoor air the better, and stop 
his feed entirely at the first sign of dis-
cease, and he will recover. However, it has 
been demonstrated in tens of thousands of cases in 
family life that two meals are not only ample 
for the hardest and most exhausting labors, 
physical or mental, but altogether best. 
The same thing has been fully proved in hundreds 
of instances with horses, and has never in a 
single instance failed, after a fair trial, to 
work the best results. An hour’s rest at noon 
is vastly more restoring to a tired animal, 
whether horse or man, than a meal of any 
sort, although the latter may prove more 
stimulating.

The morning meal, given, if possible, early 
enough for partial stomach digestion before 
the muscular and nervous systems are called 
into active play; the night meal offered long 
enough after work to insure a rested condition 
of the body; a diet liberal enough, but never 
excessive; this is the law and gospel of hygi-
ene; diet for either man or beast. I have 
ever tried to fatten my horses, for I long 
ago learned that fat is disease; but I have 
always found that if a horse does solid work 
enough he will be fairly plump if he has two 
sufficient meals. Muscle is the product of 
work and food; fat may be held on by food 
alone. We see, however, plenty of horses that 
are generously—too generously—fed, that still 
remain thin, and show every indication of 
being under-nourished; dyspepsia is a disease 
not confined exclusively to creatures who 
own or drive horses. But for perfect health 
and muscular development, the horse must 
be fed by restriction in diet. Horses require 
more food in cold than in warm weather, 
if performing the same labor. In case of 
a warm spell in winter I reduce their 
feed, more or less, according to circumstances, 
as surely as I do the amount of fuel consumed, 
I also adopt the same principle in my own 
diet. The result is, that neither my animals 
nor myself are ever for one moment sick.— 
Medical and Surgical Journal.

THE COMING FENCE.

Farm-fencing has been discussed year after 
year with increased interest ever since fencing 
was used to divide fields and farms and to 
keep out of fields and crops the roving cattle 
which formerly filled the highways and did 
immensely damage to the honest, hard working 
farmer. The original "worm fence" is still 
in existence, and so is the "stump-fence" in 
the wilds of the South where fences are 
used at all. Then came the "pale and rail," 
which in most improved sections continues to 
be the most popular and we may say the most 
efficient fence; but lumber is getting scarce, 
and some other material than wood must be 
substituted. The "lodge fence" in the 
Western States has, within the last ten years, 
been most extensively introduced, and many 
believe that is the fence. Next came the iron 
fence, the common wire fence, followed by 
the "barbed wire fence," which just now 
seems to claim the most popularity. But there 
is still another just tried in the West, which 
will certainly become popular if cared for. 
This is simply a wire fence without barbs 
barred, woven together similar to a fishing 
seine, with a large heavy top and bottom 
wire. This fence, it is said, will completely withstand all 
kinds of cattle, with no possibility of injury, 
while it is "no more expensive than the ordi-

dinary board fence." As to the real truth of 
this statement we cannot say, but we should 
 safest from the lightness of the wire, unless 
galvanized, it would succumb to the 
effects of the weather. One thing, however, 
which may be said of this iron, in some 
form, must eventually be this—"coming 
fence" to stay. Wool has become too 
expensive, but we cannot bring our mind to believe 
that the live-fence, however it may be 
estimated by some, will ever be a fixture in this 
country.

THE TRADE IN NUTS.

In the past few years, says The World, the 
trade in foreign and domestic nuts has 
developed largely, and in New York, with its 
wholesale facilities for distribution, and its 
local wants, has become an important factor in 
trade. The old traditions as to the indescri-

able nature of nuts has evidently lost its 
terrors. Wholesale fruit dealers now regard 
this stock as a steadily selling commodity, and 
count surely upon an increased demand at 
the winter holiday season. For peanuts, the 
South has become famous; and Africa, which 
used to send whole ship cargoes of peanuts 
here, is almost swept out of the market by 
their cultivation in Virginia, North Carolina 
and Tennessee. The crop for those States 
this season was 1,110,000 bushels for Virginia, 
550,000 bushels for Tennessee, and 120,000 
bushels for North Carolina. The pecan is 
well known to be of a mild nature, which 
permits its sale the year round. It is esti-
mated that this city handles nearly one-half 
of the Virginia crop.

The pecan of Texas is increasing in favor 
at the North, and especially in the Eastern 
States. A few barrels or boxes made up the 
consignments a few years ago; now car-loads 
and invoices of one to two hundred barrels 
are not uncommon. This nut is of the family 
of hickory nuts, but has a much softer shell 
and a richer flavor. The local crop of hickory 
nuts, or shell-barks, is scanty this year. The 
West, however, meets the deficiency—half 
a dozen car-loads a week, if they are needed. 
Wild chestnuts are another seasonal article 
that is scarce in the Northern States, and 
there is difficulty in obtaining sound lots. 
They will not disappear, though, for they 
can be successfully cultivated, and, in 
a few years more, there will be a full supply 
of larger and better quality that will compete 
with the expensive Italian chestnuts. Black 
walnuts are mainly used by the confectioner; 
they and butternuts are apt to be found too 
rich and oily for table use. West Virginia 
and Pennsylvania furnish the chief supply. 
The hazelnuts of this country are too insigni-
ificant for commerce, especially as their noble 
cousin, filbert, is always to be had in plenty. 
A few samples of English hazel-nuts, in 
their outside "shuck," occasionally arrive here 
for show. California grows promise, in a few 
years, to make additions to the list of domes-
tic nuts of sorts that come from Italy or 
Spain, and of what is known as Mediterranean 
stock. An immense trade is done in foreign 
uts. A trustworthy dealer assured The 
World reporter that the demand is fully three 
times as great as it was five years ago. 
Almonds have always a steady sale, since large 
quantities are used in fine baking. What 
are called English walnuts come mainly from 
France and Spain, and those called "black 
walnuts," or English crop is used at 
home. The best received here are the 
Greige and Marbeque. English walnuts are 
successfully raised in the Pacific Coast States. 
Brazil nuts never sell largely. They are 
peculiarly fat, and a few go a long way. For 
coconuts there is a steady and large demand. 
The process of desecrating them has widened 
their family tree. One purveyor in this city 
buys by the hundred thousand. The season 
for the delivery of foreign nuts here begins 

(October,
THE LANCASTER FARMER.

1822.

WORK AND LEISURE.

Old-fashioned, routine farmers are afraid sometimes that they will get out of work, and look upon such an occurrence as a sort of calamity. We have known farmers to refuse to buy threshing machines for the avowed reason that to thresh out all their grain all at once would leave them nothing to do in the winter except to feed stock, and to pound the rye out with flails, and the oats, wheat and corn by horses over it would furnish them and the boys with the employment desired, and keep all hands so employed that earning need not be apprehended. That was not a word used, but that was what was meant.

Employment is good, excellent indeed, but there can be too much of it sometimes, and particularly of certain kinds. If one wants a son to hate farming and to determine to leave it at first chance, it is only necessary, at least if he is a bright, busy thinker, to make a drudge of him in this way. Give him no rest. Make it appear that you think work, chiefly for its own sake, is the chief end of life, and if he don't leave at the first opening he isn't much of a boy. Work is good, so much to be desired in this world, but too much of it is a burden, and usually the end itself. Work is honorable and necessary, but people who work merely because leisure makes them lonely, and who cannot find entertainment in reading, or visiting other farms to learn new methods, or in some of the thousand ways by which intellectual progress may be promoted, tells a poor story of himself. He is carrying to excess a thing which is good in its place, and is as much off the track in this respect as if he were intemperate in some other form.

On the other hand there is no virtue in idleness. The farmer can justly be busy all the year, in my judgment; the idea of a long winter is bad enough, and the true principle in farming that the sagacious and clear-headed thinker shall be at the head of the farming operations, and those who cannot plan shall be in subordinate positions to carry out orders. The general in the ranks is out of place, because any good or strong soldier can do just as well as he can, but at the head of a great army his abilities are worth more than many thousands of soldiers. So of the first-class farmer; the real farmer is more than a laborer, and should not be classed in the same category.

Leisure is valuable for review, rest and recuperation. The man who has none is badly off. But usually this is a matter of habit; de-

STABLE CLEANING.

Forty to fifty years ago, and we are sorry to say that the evil still exists at the present time at points far away from towns and cities and dense populations, there was nothing so much neglected as the keeping of cow stables clean. As a common rule they were cleaned out once a week—on Saturday—and then it was not so much on account of the comfort and health of the animal and the convenience and tidiness of the milker, as simply because the pile of manure must be gotten out of the way to allow of the putting up and letting loose of the cattle mornings and evenings. We have seen the manure in the cattle stalls two feet deep of alluvial dew dung, with the hinder stalls more and the head and foot stalls less, than the front stall, and the cattle being driven out the pasture field with quantities of fresh dung hanging to their flanks, which from day to day received layor upon layor until it was one disgusting mass, and was left there until it became dry and hard and fell off in flakes of its own action. The litter—about a fourth of the quantity cattle now receive—consisted of the stalks of corn fodder which could not be eaten, the weeds left in the hay, the rakings of dirty straw lying about the outbuildings, and sometimes mixed with a few leaves from the orchard. The floor of the stall was covered of nutgrass, corn-foxtail, second crop clover and orchard-grass, badly cured, chaff from the winnowings of the threshed grain, grass straw, &c. The cows were of co-ros: as thin almost as skeletons, and their product of poor milk was about one-half of what would have been obtained from properly-fed cattle. The fact is that the farmer took no pride in his live stock. The idea of giving them clean stalls, good ventilation and nourishing food, never entered his thoughts, and if it did would have been regarded as an utter waste of money, without any return.

The best start for children is to bring them up properly with well-balanced minds and the capacity to judge of things by their real merits, and thus be well equipped to start themselves quite as well as they should. The lesson has been taught too often that the child "started" with abundance of money at his command is, on the average, even more likely to fail wretchedly than the one who has the discipline of adverse circumstances to encounter.
that we are induced to refer on the present occasion to some of the facts which it presents, and to add a few further suggestions. Mr. Ragan thinks the black walnut the most valuable of all trees for artificial plantations and timber belts. He states that a man in Wisconsin planted "a piece of land" twenty-three years ago with this tree. We are not informed the extent of the land covered with it, but that the trees, sixteen to eighteen inches in diameter, were sold for $27,600. He adds that walnut lumber now commands from $75 to $100 per thousand feet in the cities, for parlor decoration and other purposes. The trees are out of age and annually thereafter, which have an important commercial value.

In raising the trees, it is of utmost importance to do so with entire attention. Those who carelessly plant the nuts, especially after they have died for a long time, will probably fail to get trees; or if any grow, and the owner expects the young trees to takecare of themselves, he will be greatly disappointed.

Mr. Ragan's directions are, therefore, to the point, when he says the ground should be prepared in the best manner in the autumn. Farrow the ground off each way as for corn, except that the rows should be seven feet apart. Take the nuts, fresh from the tree, and plant two at each crossing. They are to be two or three feet shallow, just enough to hold them. So much for planting. Then next spring, thin the row seven-feet spaces intermediate between the rows, and plant with corn or potatoes.

The corn and young trees will be all cultivated alike, and young trees must be kept clean. The second spring thin out the trees to one in a hill. The thinning will fill all any vacant spaces where needed. Corn or potatoes may be planted the second, or even the third, and after that the trees must be cultivated and kept clean until they occupy the whole ground so fully as to keep down by their shade all weeds and grass. Standing so much better than wheat, corn will not require thinning, but will thus trim themselves additional ground when they begin to suffer from crowding. Take out every alternate tree in each row, and in a few years another thinning may be made by taking out every alternate tree in the rows at right angles to the first, leaving them fourteen feet each way.

If the trees are to stand until they become quite large, additional thinning may be necessary. But they should always be thick enough to obviate the side trimming of branches. The thinning will always possess considerable value.

At fourteen feet apart there would be over 200 trees to the acre, and these should sell for five dollars each in a quarter of a century, or at $1,000 an acre. It is not likely these young trees will become cheaper in future years. If the good cultivation and management here described are given, there will be little or no failure of a full, even growth. If the work is carefully performed, and the trees neglected, they will be poor and scattered. The regular planting in rows, and the continued cultivation until they wholly shade down all other growth, are indispensable to success, and they are equally necessary in raising plantations of any other trees, as chestnuts, locusts, or catalpas.
Mr. Brosius thought that there were two things to consider: the expense of fencing and the value of land. He mentioned that if the farmer would use all his farm land, it could be cultivated more by pasturing than by plowing.

Mr. Paxson inquired whether it would be advisable to cut and haul grass from meadow land rather than pasture.

Mr. Brosius replied that he had referred to upland land to agricultural land.

Peter S. Reist found there was a great deal of difference between the theory and practice on the fence question. It was very nice to talk about, but some farmers do not have the money to pay for the fence. He had seen many try to abolish them, and he had seen them rebuild their fences. He, however, denounced the barred wire fence and said that some day a law would be enacted forbidding its use. In fine, he thought that no farm should be divided into fewer than four fields.

Hay as a Fertilizer.

W. B. Paxson answered the question: "Can the farmer sell his hay and maintain the fertility of the soil?" He said that the most prominent question with every tiller of the soil is, how can the farmer preserve and increase the fertility of his land, or how can the farmer return to the soil, and if possible increase its productive power? This is a question of vast importance. Experience has demonstrated the fact that barnyard manure does return to the soil all the fertility that the crop takes from it. If the farmer sells his hay, then he will have no less barnyard manure, otherwise, and in order to restore the exhausted soil he must apply artificial fertilizers, which, in my opinion, should not be used as a substitute for, but to supplement barnyard manure. Therefore I answer the question in the negative.

Going to the York Fair.

The following were appointed to attend the York fair: Wm. B. Brosius, M. D. Koshay, C. L. Hunsicker.

The Next Meeting.

At the next meeting Wm. B. Brosius will speak on agriculture.

Fruit Report.

There was a fine display of grapes on hand, and the following committee, L. S. Reist, Robert Patterson and S. P. Eby, reports as follows concerning all the fruit exhibited:

Cherry, No. 1, very nice; Devog Rodgers, No. 15, very good; Wilder Rodgers, No. 4, large and fine; Massaud Rodgers, No. 5, very good; Linley Rodgers, No. 6, very good; Montrou Brosius, No. 5A, very good; Rodgers No. 32, large; Emilie Rodgers, small and very fine; Clinton, a good grape; Martha, a good grape; Reamer, a good grape; Rebecca, a very nice; Montrou, a good grape; Isabel, very fine; Cotten, small but good; Telegraph, very fine; Massee, white and good; Franklin, small and thick; Harford, over ripe; Ives' Seedling, small and luscious; loma, beautiful and sweet.

Mr. Smeby exhibited the following: Four plate seedling peaches, very fine. Grapes: One plate Black Hamburg, large and fine; one plate Bonheur, fine; one plate Diana, very sweet; one plate Rodgers No. 1, good; one plate Rodgers No. 25, fine; one plate Rodgers No. 26, fine; two big plates, very fine and sweet.

Mr. Levi L. Richt exhibited some very fine York Imperial apples.

POULTRY ASSOCIATION.

The meeting of the Poultry Association met on Monday morning, October 25, 1882, and was attended by the following persons: President, G. A. Geyer, Secretary, J. J. Hafner, Treasurer, Theodore, John E. Schum, City; Dr. E. H. Witmer, Newville; Harry Stein, city; W. W. Grist, city; Dr. H. B. Longaker, city; J. Brooks, West Willow; Joseph Trissler, city; J. M. Johnston, city; Wash. Herzog, City.

Mr. Libby, as chairman of the Executive Committee, reported that the premium list had been arranged in part as follows:

For poultry $2 for first, $1 for second, highly commended to second; for pigeons, $1 for first, fifty cents to second, highly commended to third; entrance fee, seventy-five cents for single bird for poultry and thirty-five cents per pair for pigeons. Of the cash premium, not more than $200 shall be paid out, and that the society will charge ten per cent. The premium for breeding pens is $3.00 each, and entrance fee $2.00.

A breeder's stake will be made up, and every bird is charged one dollar; the prize will be divided by the number of entries. Sixty days' notice, and in to third: the birds must be ruled by the breeder.

The offer of T. B. Dorsey, of Delaware, of a $50 cup for the best bantam on exhibition—he to contribute $10 and the society $10 of the required $25—was accepted. The entrance fee $5. A Polish cup with the conditions was also accepted.

Mr. W. A. Jeffrey, of Ashland, Ohio, editor of the National Poultry Journal, offered a twenty-five dollar silver cup for the best collection of white erected black Polish by any one exhibitor, and his offer was accepted.

The above report of the Executive Committee was unanimously adopted.

Charles E. Long, by reason of his inability to attend to the duties of a member of the Executive Committee, tendered his resignation, which was accepted.

Upon this motion the meeting adjourned.

FULTON FARMERS' CLUB.

The regular monthly meeting of the club was held at the residence of Day Wood, on Saturday, October 7th, Longaker.

The following members were present: Day Wood, Jonah Brown, J. K. Brieburn, Linley King, Montgommery Brown, S. L. Gregg, Wm. King, John Cauffman, Joel King and E. H. Hauns.

Visitors: Dr. S. T. Ruman, J. C. Harmon, Harvey Reamer. Neal Hamilton, Isaac Brusich and Clifford Cook, all of whom are accompanied by portions of their families, making a company that filled to overflowing the capacious and elegant parlor of the host.

The members all having exhibited specimens of the farm, the fruits, vegetables and other crops, the members then adjourned to the table to partake of a most sumptuous repast, and it was decided to be a King of Tompkins county.

Questions and Answers.

Day Wood—I have heard it said that it pays best to eat feed when corn is high in price. Is this the case? This was a question that most of those present cut seemed to have thought but little about, but all seemed to agree that as corn is the material out of which winter beef is made, a scarcity, and consequently high price of the former must of necessity be followed by a scarcity and high price of the latter. I think the housewife did not consider the matter of profit on its unvaried cost, whether the price be low or high, but the production of beef or pork is more profitable to the farmer in times of high prices than in times of low prices, just upon the same principle that a miller who grinds the grain the grossest would not have to pay him a certain per cent. of profit on its unvaried cost, whether the price be low or high, but the production of beef or pork is more profitable to the farmer in times of high prices than in times of low prices, just upon the same principle that a miller who grinds the grain the grossest would not have to pay him a certain per cent. of profit on its unvaried cost, whether the price be low or high, but the production of beef or pork is more profitable to the farmer in times of high prices than in times of low prices, just upon the same principle that a miller who grinds the grain the grossest would not have to pay him a certain per cent. of profit on its unvaried cost, whether the price be low or high, but the production of beef or pork is more profitable to the farmer in times of high prices than in times of low prices.

Joshua Brown—in this neighborhood does it pay better to feed sheep and cattle on corn, and grain in oats? Several were in favor of sowing the wheat and the potatoes of the land was rich, but on thin land past experience did not recommend the plan much. Some object to putting in wheat after corn on account of the labor required to remove the stalks, and then to plant wheat on the same plot, but this is not an obstacle if the right plan was pursued, which is to cut two rows of corn where you wish the shocks to stand and lay one on each side, then cultivate and drill in these two rows, after which cut and shoot the corn on the ground thus planted. In this way the corn need not be carried more than the usual distance, and the shocks will not kill the wheat if not sufficient rain fall.

Montgomery Brown—Has any one present a variety of grape that does better for him than the Concord? Some of the members were cultivating as many as eight or ten varieties, but no one had found any of the Concord grapes. It was thought that if the Concord, William King—Is it better to put apples in the cellar immediately after picking or barrell them and leave them out until cold weather? J. J. Carter was in favor of leaving them out of doors in a dry, cool place. Day Wood preferred to put them in the cellar. Dr. Ruman said to put barrels that were perfectly tight or make them so by pasting muslin over the joints, put the apples in these, head them up and leave the barrels under the trees, but on something to keep them off the ground, until freezing weather.

Joshua Brown said if you leave the apples out until cold weather, they should be put in barrels, but if put in the cellar, they should be put on shelves.

Martha Brown—When is the best time for storing away a supply for winter? Answered—Just before Hallow'en.

Joshua Brown cuts the stalks off the cabbage and packs the heads in a barrel planted in the ground; they keep well and are easily got when wanted.

I. M. Longaker said that he has a very nice farm and stock was made. The condition of the farm, the crops and stock were all consider good.

The host made the following report of his farming operations for 1881:

Crops.

20 acres of wheat produced...... 1075 bushels
25 acres of corn............. 12 ears
10 ears oaks.................. 205 acres
10 tobacco.................... 6,341 pounds
5 acres of hay.................. 1,000 pounds
18 acres of seed............ 2 acres of potatoes......... 125 pounds
100 acres of corn........... 21
6 cows and heifers........... 200
26 hogs (500).................. 134
12 hogs and 6 dozen chickens.. 27
28 head old sheep $4.00 each... 112
1,700 pounds butter......... 572
1,500 pounds lard........... 197
191 dozen eggs.............. 82
poultry, calves, pork and lard.. 198
Total sales.................... $7,419 80

Literary Exercies.

Montgomery Brown read from THE LANCASER FARMER an article on "The Practical and Scientific in Agriculture," of which the following is an extract:

"The promotion of all knowledge of agriculture is the accomplishment of fixed facts, suggested by accidents discovered perhaps by science, but, however, observed, proved or confirmed by the practical farmer on the land. A theory which bears this test may become a law at once for the farming community, and may be engaged in culturing and teaching as a principle, according to the best known principle, it must depend upon a widespread community of farmers for the last grand process of proving and diffusing its theories. And when we remember that agriculture is not an exact science and cannot be until the skies and seasons are subdued by man, and that the fact discovered in the field is often of more practical value than those laid down by the student in his closet, we shall not be surprised at the success which associated farmers have met with in the work of advancing agricultural education.

While Brown read from the Lancaster Examiner an editorial on "Farmers' Societies and Festivals."

Rebecca D. King read a temperance story, "A Strong Temptation."

Neal Hamilton delivered an amusing stump speech he had learned when he was a boy.
THE LANCASTER FARMER.

(Otober,)

Dry Wood read an article on "Ants," by Mark Twain.

Resolution for discussion at the next meeting: 
Resolved, That the experience of a farmer is of more benefit to him than the writings of others. 

Mr. M. S. Stahr, in his address to Messrs. John King and Edie Brown, were appointed to have some literary exercises for the next meeting, which will be held at the residence of C. C. Gafford on the first Saturday in next month.

LINNÉAN SOCIETY. 

The Society met in the ante-room of the Museum on Saturday afternoon, September 30th, at 2 o'clock. P. M. Prof. J. S. Stahr in the chair, and S. M. Sener, Esq., secretary pro tempore.

The donations, contributions, and addenda were the following: The next two specimens of parrots were donated by Mr. B. H. Fonkermith, bird fancier of East Orange street, and staffed and mounted by Mr. George O. Hemso, taxidermist and florist. One of these birds was a ash-colored, or gray parrot, and the other green and red, and both had died in their cages, a fate to which foreign birds are excessively liable in our northern climate. The farmer is Peltastes erythraeus, and the latter seems to be an immemorial specimen of Peltastes festivus, of South America. An numbered spoon of a "Horn-wort" of New Jersey, donated by hundreds of insect parasites, a description of which had been published in the New Era and the Lancaster Farmer during the month of September. Also a specimen of the jarra of Dorycampa, donated by Mr. J. R. Waldolph of the Cornwall farms.

Also a score of the "oil-beetle," Meloe angusticcollis, captured about a mile north of Lancaster, about a week ago. If this cannot be regarded as a rare insect, on the other hand it is never found very abundantly in this vicinity. When captured, it exudes a liquid resinous substance which odors the fact that all the other insects in the bottle die, and the oil-beetle alone survived, it may be inferred that it was poisonous to them. Mr. Milton Wilke, of Columbus, donated a very extraordinary cranium of the "round hog," Arctonimus mous—found in Maric township, near McColl's Ferry, also called the "Pimmsel." One of the front teeth (incisors) in the upper jaw grew round in a circle and entered the jaw again near the base of the first molar; and the other in a similar form, grew out of the side of the jaw. This specimen, which the farmer had brought its molars together within an inch, and as this animal is a rodent, and lives exclusively on vegetal food, it must certainly have starved to death. The incisor teeth of rodents are mainly used for cutting, and the question is, how could these teeth possibly have grown so rapidly, as to prevent the animal from bringing its teeth together, and wearing them down as is usually the case? for there is hardly room for the inference that they grew in that condition after the death of the animal. If it starved, it would not have retained its teeth, when it had survived in that condition before death ensued. The fossil two double peach stones, from double peaches, in both cases growing from one stem, and inferentially from one blossom; donated by Messrs. Thomas and Fon- damental, who believe it occurred quite frequently the present season and is one of the most marvelous trees that grow, as their fruit has been rarely found growing from one stem. A specimen of bituminous coal from Vainsaur's Island, British America, donated by Mr. Washington L. Hershey, Chiques farm, specimen of coffee, and a piece of the bark of the "buckthorn" tree, I. P. Pliny, which was wrecked in May last, on the coast of New Jersey, between Deal Beach and Elber- nator, N. J., donated by Messrs. C. A. Heiman and Joseph Steinacker. A prepared specimen of Ery- theyra composita, var. pulchella; on it is some times called, E. unicoloris; it was added to the Herbarium of the society by Prof. J. S. Stahr. This plant is new to the flora of Lancaster county, and was found by Prof. Stahr in a small ravine in the western part of Lancaster city in July since then it has also been found at Medla Illinois, by Mr. Vatcher, a student of Mr. M. L. Herr, of the gradu- ate's of Franklin and Marshall College. It belongs to the family Gentianaceae, and is nearly related to the "Erythra composita," a native plant, a favorite bitters among the Pennsylvania Germans. A collection of prepared plants and flowers was exhibited by Mrs. P. E. Gibbons, also specimens of the water chestnut, used as a food in France. The plants were collected in Huntingdon- shire, England, by Mrs. Gibbons on her last visit there.

To the library, first series of the official records of the Union and Rebel armies, in the war of the rebellion; from the Department of the Interior. Nos. 6 to 12 of the "Official United States Patent Office Proceedings," Vol. XXIII, from the first Lancaster Farmer for August and September. Part 2, Vol. III, Proceedings of the Davenport Academy of Natural Science, from January, 1879, to December, 1881, 192 pp. Royal 8 vo. and 4 plates; from the Quarterly Journal of microscopical researches, a large amount of interesting Western mould-louse, and announces the death of its late president, Joseph Duncan Pittman, in the prime of life, an industrious and progressive scientist, and one who had already made his mark in the scientific world. Three enuh- leves containing thirty-three historical and biographical selections. A number of book catalogues and circulars.

Prof. Stahr read a paper entitled "Botanical Notes," in which he referred specifically to the plant life of the vicinity. This paper was remarkably, found by Mr. J. C. Foltz. In Drumtown township, also, to some peculiarities in several specimens of the night-blooming cacti of Lancaster city.

Prof. Buehrle, City Superintendent of the public schools, was proposed for active membership by Prof. Overholt. Resolution was adopted, under the rules, lies over until the next meeting.

S. M. Sener was unanimously elected assistant secretary.

After a short session of science gossip, the society adjourned to meet at the office of Dr. Knight, North side of York street, in October, at which time notice will be given by the secretary.

AGRICULTURE.

Wheat Growing.

The success in growing wheat in Pennsylvania the last few years should stimulate us to raise a greater average per acre than has been the case in many of our fields of this kind. The last crop of wheat, an average of thirty bushels has been obtained this year in some of the Western States; and we are well aware that the yield has been increased this year in Pennsylvania—in some special instances, over forty bushels have been obtained. Of course there are various causes influencing success. That which might be an aid at one point might be an injury at another. But there are one or two mat- ters that wheat growers are apt to forget. The first how in general, and in the second general thing it is well understood that manure must be liberally applied to induce a good crop; but many persons plow it under, hence, it is not until the plant has set its roots deep down into the soil that it derives much benefit from the manure. But if the manure is so placed that the young root- roots cannot penetrate into it, and the manure is very deep, it will grow early on its vital course, which will establish it firmly against any future draw- backs.

In the second place few persons have any idea how manure operates in making roots. If we bury a small shovel of manure some distance from a thirsty tree in early spring, and examine it again the ensuing fall, we find the lump of dung a complete mass of roots, while the earth in other parts containing has but a few struggling ones. Some people think that the roots are attracted to the spot by the manure; but it is not so. They are actually created by the manure. A leading root sinks into the rich manure, and increases in number and length, and increases in number and length, and increases in number and length, and increases in number and length, and increases in number and length. And the principle in successful wheat culture should produce the grain and the food as close together as possible, if we would encourage it to root out well and get a good start. We can very well adopt it on a great scale. Manuring in the hill is quite a universal practice; but where it is not, the result is well known. We repeat, therefore, give the crops an early start. It has a wonderful influence in its efforts in after life to come out.

An Excellent Fertilizer.

A German farmer once told the writer that every year he prepared a heap of manure which, when applied to his soil, made it produce marvelous yields. His mode of preparing it was as follows, to use his own language: "I have brought home horse waste and about two dozen owls. I save every particle of their droppings and place them under a shed which has a cemented floor; upon this I spread a layer of forest mould, and in order to preserve the ammonia in 1 I spread upon the bed of horse waste another layer of mould, taken from the woods close to my house. Then a layer of earth is put over this system of layering each time the stable, cow and hen houses are cleaned out. I also save the urine of the animals and that from my house, and pour it upon the heap; sometimes I also add a small quantity of cattle from the stable, and, when not too dry, to collect them, a lot of leaves. By attending to the heap in person, and seeing that all the manure is rigidly saved, I find on hand by the early spring a large quantity of the richest fertilizer I have ever used. During the few winter months it has thoroughly rotted, and when needed to spread upon my gar- den it resembles a heap of ashes, so completely it is pulverized. My garden consists of five acres of ground, which receives this valuable manure. On a farm where twenty or thirty houses, men and cattle are kept, and a flock of sheep and a fair number of fruit trees is placed, a manure as above, enough of this excellent fertilizer could be saved each year to thoroughly manure fifteen or twenty acres of land, and no farmer should be at a loss to what manure he requires, for this is the foundation of successful farming."

How to Remove Stumps.

The Scientific American gives the following receipt for getting rid of stumps: "In the autumn of every winter bore a hole one or two inches in diameter, according to the girth of the stump, and about eighteen inches deep. Put into it one or two oes of salt- peter, fill the hole with water and plug it close. In the ensuing spring take out the plug and ignite it. The stump will moulder away without blazing, to the very extremity of the roots, leaving nothing but the ashes."

The Telephone on the Farm.

A French farmer uses a portable telephone to carry on the work of his farm without going away from his house. His plan is simply to have a tripod carried a movable roller, on which is wound a coupling cable, connected with the usual telephone wires. Below this on a movable board is a small box, in which is placed a telephone and bell. The system allows the current to pass from the bell to the telephone without using a commutator. Thus, the telephone bell is not in connection with the line, and when the telephone is in use the bell is cut out of the circuit. Another telephone and bell are fixed in the house of the farmer, with a common commutator. Octagonal Barns. If a barn is wanted to accommodate a certain number of animals, the proper space is better and more cheaply obtained in the octagonal form, for this
Horticultural.J"ure.

York Imperial Apple.
If every a fruit did better in Eastern Pennsylvania than the York Imperial apple in the few years it has been tested, then it must be as near perfect as we can expect. It is as regular in bearing as the returns of the ages; as large as the favorite old Pendock, and as bountiful as the old good times - of our fathers; has no imperfections to speak of nor glosdy red surface; and in quality just that nice commanding of acid and sugar sure to please the majority of judges of good fruit. It is not so rich as the Robinson, and yet it is by no means deficient in flavor; nor is it so spicily as the Newtown Pippin, although it possesses a fragrance peculiarly its own. In the orchard the outline of the tree is not too commended, and yet it is a remarkably healthy and vigorous growth, with rich dark green foliage. It will not produce so many apples as Smith's骨架, and the fruit will be much larger per tree; and as regards value, the York Imperial is immeasurably its superior, and always commands much better prices.

Keeping Apples.
As the time is at hand when the work of picking and packing the fruit is to be done, and in preparation for the spring will have to be attended to, it is well that the methods of preserving this valuable fruit should be considered. We have written on frequent occasions discussed them, and pointed out what we conceived to be the best method to pursue. In brief, we would, therefore, repeat in substance, as follows: 1st. The apples must be good keepers, free from bruises or blemish. 2d. They must be spread out on shelves or packed in barrels, and kept in an atmosphere of from forty to fifty degrees, better from forty to forty-five, and at a season when the apple is to be kept as possible. Some cellars are just the thing and preserve them beautifully. Others are too moist. Where this is the case a few boxes of stone lime should be used. Sibling shelves, six inches apart, lattice bottomed with a single layer of fruit, are extremely convenient, as they allow of constant examination without disturbing the fruit. A farmer informed us some years ago that with a large stand of these shelves in his cellar, with a few inches of lime on the bottom of the cellar, he kept his apples into May in perfect condition.

Root Pruning.
A ramnit in the cellar, kept closed, but with some ventilation, frequently answers admirably, as we know from previous experience. If carefully packed in clean, naked barrels, the heat forced down in order that the fruit may be quite solid, and the barrels placed under an open shed until late in November, but before hard freezing comes on, and then be removed to a dry cellar, where the temperature will range about what is stated above, there will be little danger of the fruit not keeping through the winter and late into the spring. Indeed, we have known it to keep until June.

Apple Notes.
Apples exhibited at the Southern Illinois fair report the Hickoklay as worthless for this latitude and the Lawyer as a very shy bearer. There were some monstrously specimens of the Buckingham show, and all growers united in declaring this variety to be one of the very best for Southern Illinois, as a large quantity of fruit was falling off, and some growers already have begun to harvest them. The St. Lawrence was reported as one of the very best table and market summer apples. It is a great bearer of beautiful red striped, good flavored fruit. Growers united in recommending the Benon as the best and first good apple in the market. It is of fine color and flavor, an enormous bearer, early in coming into bearing, and brings more money than any other early apple. It is said to be a far better variety every way than the red June. The Lord knows, as to the June, that the Benon is uniformly perfect in form and increases in size as the crop is thinned. Its one fault is that of occasionally being water cored.

Chow-Chow.
Two quarts of tomatoes, two white onions, half dozen green peppers, one dozen red peppers, one large head of cabbage, one tablespoonful of celery seed, one ounce of turmeric, half teaspoonful of cayenne pepper, one ounce of sugar, one ounce of salt, one tablespoonful of butter, one ounce of allspice, one ounce of black pepper, one quarter ounce cloves, vinegar enough to cover, and to the taste.

Stuffed Tomatoes.
Take six large, well-shaped tomatoes; cut a slice off the stem end and take out the seeds and pulp; then fill the tomatoes, then sprinkle them inside with a little salt and pepper; have a pound of cold cooked veal, and after removing the slice from the top of the tomato, chop fine, and add the pulp and juice of the tomato; chop fine and try to a light brown, half an ounce of butter; season it well with a few heads of garlic, a hundred crumbs, a teaspoonful of salt, a tablespoonful of butter; chop the tomato with it, and put into it a good lump of dripping or butter; when it is hot pour in a cupful of batter, and let it run all over the equal thickness of the tomato, and when the batter is not stuck, and when you think it is a sufficiently thick sauce, put it into the oven and turn it with a slice, and when both are of a nice light brown, lay it on a dish before the fire; stew sugar and meat, and burn the remainder of the salt, and take up directly, or they will become heavy.

Radish Soup.
Take the fat from the top of your cold stock. Pick out some of the best pieces of meat—a cutlet and set aside. Add a pint of boiling water to the stock, and boil slowly, with the rest of the meat, for nearly an hour. Chop the meat reserved from the stock; make into forcemeat with fine crumbs, seasoning with onion, parsley, pepper, mustard, and little bit of beaten egg. Fry your hands and make this into round balls. Roll them in flour; set in a floury plin-fish, not too much flour, and leave in a quick oven until crust over. Let them cool. Strain your soup; add such seasoning as you desire; add a quarter beef broth; season with the radish meat rissole, and heat without boiling three minutes.

Lamb Chops.
Trim off fat and skin it, leaving a half inch, set aside. Pound at least two pounds of lamb over a clear fire; butter, salt, and pepper each, and stand them on the larger end, just touching each other, not over an hour.

Potato Mound.
 Mash smooth, with butter, milk, salt, and pepper; make into a smooth mound upon a hot dish, and arrange the chops around it.
hot; then brown. If your dish has been well-but- tered, turn the cabbage upon a hot dish, and pour over:

**DAMSON TART—** Fill a pie dish, lined with good paste, with ripe, sound damsons: sweeten very plentifully; cover with crust and roll; bake a good golden crust, and return to the oven one moment, to glaze.

**Potato Porridge—** Twelve potatoes, peeled and sliced very thin; a pint of milk; half a pound of sugar, dissolved in boiling water; 1 cup of hot milk; 3 beaten eggs; 5 tablespoonsful of butter rolled in flour; salt, pepper and nutmeg. Fry potatoes and onions light brown in a little butter. Put into a pot with water, and cover with a tight lid, and stew through a colander to a smooth puree. Add the water in which they were boiled, and season to taste. The mixture begins to thicken, stir in the buttered flour, pepper, salt, and chopped parsley, and simmer five minutes. Heat the sauce, and then add to the potatoes. Cook one minute, and pour into the tureen. Add the puree; stir in the celery essence, and it is done.

**Roasted Sweetbreads—** Three fine sweetbreads; 1 cup of gravy; a cup of your soup will do; 1 beaten egg; cracker-dust; 1 teaspoonful of melted butter; rock salt. Cook a small-sized gravy; fry your very little minced onion put into the gravy; 2 tablespoonsful melted butter; fried bread.

**Bolland and Blanch Sweetbreads—** Wipe perfectly clean, cover with water, and let simmer in the pounded cracked pepper. Lay in a baking-pot; pour in the melted butter slowly over them, that it may completely surround each. Let it stand 45 minutes, baste freely, from the time they begin to brown, with the gravy as you pour it in. Strain the gravy; add catsup and wine; boil up, and pour over the sweetbreads.

**Potato Croquettes—** Mash the potatoes, and beat in a raw egg, butter, milk, nutmeg, grated lemon-peel, with pepper and salt. Heat in a saucepan, stirring constantly, for three minutes. The sauce is then ready. Filtered first. When cool enough to handle with comfort, make into croquettes, roll in flour, or dip in milk, and flour, and then roll in crumbs, or put them too many into the pan at once—browning hard, or dripping. Drain in a hot colander, and serve.

**Rice Pudding Cold—** Two quarts of milk; one gill of very fine tea-cup brown sugar, one stick of cinnamon about three inches long; wash the rice in a colander, put into a saucepan with about half as much loose starch and Powell the pudding; put it in the baking dish, scatter in a quarter of a pound of powdered sugar, then cover with the rice and sugar. Cover over the dish until the last half hour, when the upper skin may be allowed to brown; do not stir it. You can see the colour of the rice turn like rich yellow cream when done. A large piece of thick paper or a large plate can be used to cover up the pudding.

**Breakfast Cakes—** To make warm weather breakfast cakes take one cup of brown sugar, nearly one and a half pint of milk, the yolks of two eggs, a pound of oriental molasses, a pint of sour milk; four cups of flour, four teaspoonfuls of soda (not leaping, but even); one teaspoonful each of salt, pepper, caraway and mustard seeds; three tablespoonfuls of brown sugar; one teaspoonful of nutmeg.

**Potatoes au Mathe d'Hotel—** Slice cold boiled potatoes, about half an inch thick; put these in a saucepan; add four or five tablespoonfuls of milk, a good lump of butter, with salt, pepper and mustard paste. Heat quietly to the boil, and let it simmer a good half hour. Drain, stir in a thick flour sauce; season to taste and serve. Put well up this sauce in a saucepan and let it simmer, stirring well. Stir in a little flour, with cold milk; cook a moment to thicken it; add the juice of half a lemon, or as much as you like, and pour out.

**Steamed Tomatoes and Onions—** Peel, slice and stew a dozen tomatoes ten minutes. Then add a small quantity of seasoning; add salt, pepper and a large and small spoonful of sugar and a cup of claret—or if you prefer, clear water. Skew slowly until burgundy and clear. Take out the peels and boil the syrup on one half, flavoring with wine, then, with essence of bitter almond. Have ready two cupsful of boiled rice, cooked in milk and sweetened. Spread out upon a flat dish; lay the pear upon it, and pour on the syrup as cold.

**Ox-Cheek Soup—** Two ox-cheeks, three onions, two celery stalks, three carrots, three large mushrooms, six cloves, salt, five quarts of water, one half cup of German sage. Boil the bones of the ox-school; add cold water; bring to a boil, and throw off the water. Fry the sliced onions, and mushrooms in salt, pepper, salt, and spice. Cover with a gallon and a quarter of water. Bring this to a boil, and simmer two hours. Strain off the liquid; pick out the meat and bones, salt lightly, put into your soup pot, and add your beef bone for to-morrow. Pulp the vegetables into that mean for to-day; let it cool; take off the fat, and put these vegetables into beef stock, and add your sage, which should have been soaking for two hours in a little water, and simmer until well boiled.

**Savory Apple Sauce—** Wash two fresh calf's hearts; stuff with a forcemeat of crumbs, chopped salt pork, a little thyme, sage, and onion. To one and a half pints of gravy, add a strong gravy stock, a half tispoonful of black pepper, and a few crumbles of nutmeg. Strain it all and serve. Make a thick gravy with a little cold cream and a clean bawd on top; put over a buttered pudding dish, and bake, covered, forty minutes. Then brown the top well with custard sauce, or cold, with cream and sugar.

**Live Stock.**

**Raising a Colt—** A colt is regarded as an incumbrance, because he is useless until he arrives at a suitable age for work, but it really costs very little to keep him, and gives much satisfaction. When the period arrives at which the colt can do service, the balance sheet will show its profit and loss. You will be able to realize your investment if they are sound and well broken. One of the difficulties in the way is the inacquaintance placed on the dam, which has had her usefulness on the farm, especially if this colt is foaled during the early part of the spring. Some farmers have their colts foaled in the fall, and this is open to objections. In the first place, spring is the natural time, for then the grass is beginning to grow, and colts are born at this time. Most hens should bring forth their young in a season or two, instead of the people who wait and offer the colt to be raised for them. Colts should be raised with the dam. A colt needs but very little feeding if the pasture is good, as it will get its grain. If grain is necessary, needs then only a small feed of oats at night—no corn—and if he is given hay it is not necessary to give him corn. Colts flourish in the spring and summer, the barn will not be one-third his value when he is three years old, and if he is well bred the gain is great.

When a farmer raises his horses he knows their disposition, knows when to feed, and when to get good, sound, serviceable horses on the farm. It should not be overlooked that a colt that is raised in the barn will not be as fine as one that is foaled and handled as much as possible. He should never hear a harsh word, but should be taught of all the things that he should know. This is an easy matter if his training begins from the time he is a day old. The object is to make him a gentleman, and will never be troublesome. No such thing as a whinny should be allowed. If the colt shows his want of condition, he should not be worked until three years old, and then lightly at first, as they do not fully mature until they are four years old. There are many good horses even. Mares with foals at side should be fed on the richest and most nourishing food.

**Hints on Raising Stock.**

Every farmer who raises his own cows knows full well the advantage of delaying the separation of their first year's growth when calves. If the calf is starved, half-starved and ill-used there is no chance for the animal becoming a good cow or reaching the proper size. The calf must be supplied with proper food for securing the best conditions of growth and health. Extra attention is necessary with yearlings and two-year-olds.

Among the most desirable foods are good hay, linseed meal and cottonseed meal. Sheds are also excellent as a winter food, and when the market economy demands the rapid and early fattening of all steers, as well as also such feeders as are not wanted the strength of the animal once grown it has taken up all the phosphates and nitrogen it is likely to require, which elements are the most necessary for the purpose. Extreme economy in feeding abstracts from its food nothing except fat, muscle, and the nitrogen, phosphate and potash contained therein being returned to the soil through the manure heap.

While the farm of the breeders is likely to grow poorer without the extensive use of commercial fertilizers or purchased farmyard manure, yet the lands of the feeder are always gaining and growing. The farmer who sells lean stock is robbing his farm of its vital and most valuable elements, while he roops a sum so enormous to be fatterating his own lands will prove a successful cultivator. Progressive farmers should always strive to produce only good beef and sheep. All stocks should be selected with care as maintaining the value and fertility of their farms.

**Swine Raising—A Different System Desirable.**

Pure air helps to make pure blood, which, in the true character of humanity, builds up healthful bodies. Breeding swine is a sure way to the making of fair, and would probably be passed over by judges and passed over by pure breeders. We all know the fat will help less things which get the prices. Such pigs are well adapted to fill hard legs, whereas the swine from the farm are well adapted to make the most hard and the least waste of fat, the longest and deepest sides, with the least lean, and the most meat. If you are going to raise pigs, it is most desirable, the weighing, and the young in a season or two; the feeders put them to stand up and help itself to food, and carry with it the evidence of health and natural de- while, to remember that feeding pig swine not pastures and pasture good appetites—the fresh air and ex- cermatically to make the best of them. In a season or two, the fat, and well as standing the heat into the season will finish off the pig. The pig pasture will be ready the next year for any crop, and ten years will make a dozen pigs. If such a season will be gained in the season, a season or two; the pigs are confined in close pens, for, as pigs are usu- ally managed on the farm only little mutton is ever made from them.

More Frequently Milking

Mr. L. T. Hawley, of the Oxnolga Farmers' Community, in his speech on "The Larger Extent of Milking, which we quote from the Syracuse Journal:

"The cow with which he experimented was a seven-year-old one. In February, 1841, and gave thirty-two pounds of milk per day with two milkings, and the following day, with three milkings a day was made, with an increase in ten days to forty-two pounds. The milk kicked the cream twenty one pounds of well worked butter was obtained. The feed was corn stalks from which the husks were removed, and also clover. The clover was well cured in the cock, cut, and mixed together and fed three times a day, together with a small quantity of Indian meal. Water tempered to 65 degrees was given three times a day. He also adds that raising the milkings from two to three days per week will increase the percentage of cream from 29 per cent. to 37 per cent.

**Jersey Cows and their Records.**

In view of the heavy prices paid at various public sales for Jersey milk, it seems reasonable to give a few of the more important Agricultural Times, as follows: If anybody had pre- dicted ten years ago that the milky eyed little Jerseys would have the abiding interest which they do at the present time, he would have been considered on the borders of lunacy. The breeders of fancy Short-horns have seldom con- sidered the butter or milk record as worthy of attention. They ignored the most valuable characteristic of any breed of cattle for use in a highly civilized community— their milk and butter production. These yield
more annually profit than beef production; and every acre of alfalfa in the United States must meet this test or stall able. Happily, the Short-horn with its magnificent yield of natural forage adds greatly to the world’s store of digestible materials in the dairy. Its temporary eclipse in this line, some of whose extraordinary results have resulted from the first of the breeder, and not from the capacity of the breed. But the little Jersey is having her day. Its milk brings high prices in large towns, and the large herds yield great sums of golden-colored and nutty-flavored butter. Perhaps her admirers are somewhat extravagant; but the facts are not always seen as closely as they should be. As these extreme prices must be based upon a conductionary price which is not always in the world, the Jersey’s budding reputation may not last. 

Quarantined Cattle.

The Governor of Illinois issued a proclamation ordering the entire herd of cows and calves for export from the state’s eastern counties. This order was made in order to prevent the spread of the disease. The statement notes that there is good reason to believe that the pleuro pneumonitis exists as an epidemic disease in the State of Illinois, as well as in Maryland, Delaware, New York and Connecticut. The order also states that the State of Illinois does not cause alarm to the Philadelphia beef market dealing in cattle from this state.

City Treasurer Martin, who is President of the Philadelphia Stock Yard Company, says this order will cause a great deal of hardship to the people of the state. He also says that the disease is caused by the importation of raw meat and that the people of the state should not be alarmed.

Facts About Horses.

The horse’s stomach has a capacity of only sixteen quarts. When we consider that this is a very small quantity, this proportion is reversed, the horse having a capacity of 180 quarts against 100 of the cow. The horse’s stomach is divided into four compartments: the first, the retention of a part of the bile secreted during digestion. The horse has more, and the horse’s stomach is divided into twelve compartments. This construction of the digestive apparatus indicates that the horse is intended to eat slowly and continually bulky and nutritious food. When fed hay it passes rapidly through the stomach into the intestines in about an hour, which is charged during menstruation with four times its weight of saliva. Now the stomach is divided into four compartments, and when the animal eats one-third of his daily ration, or seven pounds, in one and one-half hours, it takes four times as much as the horse to digest the stomach. The equine stomach is one of the most important parts of the animal, and the animal can only be kept healthy by regulating the diet.

APiary.

Some Information about the Queen Bee.

There is an impression prevailing among the uninitiated that the queen bee is the most important member of the hive, but this is by no means the case with first bees. For, as a rule, the colony of bees is divided into the three classes: the drone, the worker, and the queen. The drone and worker bees are the ones that are kept in the hive all winter. The worker bees are the ones that perform the actual work of the hive.

Overloading Cows’ Stomachs.

When cows are changed from scanty to flush feed it often happens that the benefit of the more liberal amounts of food is neutralized by the cows’ tendency to gorge themselves to the extent of uncomfortably fulness. An excessive distension of the stomach prevents the digestive action from going on properly and tends to diminish the flow of milk and to impair its quality. Overloading a cow’s stomach invariably produces a knock-down effect, and large quantities of feed injure it for butter or for cheese-making, and also its healthfulness for human consumption. A single feed of a double dose — a loss from falling to utilize as fully as might the flush feed, and a probable accommodation of the cow—will enable the cows to give as much milk as they are capable of giving. When cows are fed with a fiber- soluble and digestible feed, such as oats, hay, and green grass, the fact that they do overload an exude eventually that loss has been endured on account of it when such a course of feeding has escaped, and a change is to be made to a better one, loss from overload is liable to occur. When the cow is herded gradually to the new feed and supplying them with all the salt and water they desire. The improvement in the milk will never be so great as to change the flavor of the milk.

Preparing for Winter.

When the month of October has arrived in this latitude it is customary for beekeepers to put the bees in the hive and store the winter food. The first month of the month the brood hatches and the queen lays but sparingly. This is the desirable condition for the bees to enter the winter. The bees have to be kept in the hive and check the need for feeding. The winter preparations should not be delayed after the first of November, as we have only days of the weather of previous seasons. Colonies could not be fed to any advantage after the last day of December. The bees must be removed from the bottom board, if possible, and stored on the Bees. Some are not satisfied that this amount makes all colonies safe. A hive with its combs and bees weighs about 40 pounds, so the weight of a colony with plenty of stores to winter on, and it is the practice to make the supers large enough to be stored in a good cellar. The feed is used for the bees to make winter stores, and is made up of the pollen and honey from the honeycomb.

Twelve Facts for Beginners.

Ms. Editor: I will offer for publication a few facts which every beginner ought to know:

1. That the worker is from six to eight days old be fore it comes to the hive. The queen forms them the hive and that it is from fourteen to sixteen days old before it begins to gather either pollen or honey.

2. That all swarms emerge in bumble comb, when they have not a fertile queen, build only drone comb and hence there must be a worker bee or drone comb. The apartment should be worker or drone comb, except a very small quantity of drone comb, four inches square, the simple means sufficient.

3. That the more prolific the queen is the more young bees you have, and the more surplus honey will be made from the regular amount of feed.

4. That you ought never to cut moldy comb out of the hives, for the reason that you should never allow it to become moldy.

6. To separate half the brood swarms or stocks of bees in the fall, because you ought to attend to that and make them strong during the summer by taking care of them when giving them the winter food.

7. That a drone laying queen should be taken away from the hive and placed in a small piece of paper, and elect the colony will soon come to naught.

8. That to separate the queen shows signs of old age or fecundity, the bees themselves will supersede her.

10. That every hive should contain about two thousand cells, otherwise they are not capable of the business.

11. The beginners in beekeeping should be very cautious about increasing the number of their swarms in the fall, as it will injure the colony in the winter.

12. That the hive itself, if well constructed, is all the bee house you need.—Bees’ Review.
Poultry.

Guinea Hens.

Object is made to grow a rather fine fowl in domestic quarters because its voice is hardly less musical than the "controversy of two pipes;" because it batters less, and because it is a far less expensive bird than the stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately stately 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THE PENN HARROW

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Remove the wheel from the original, reverse the wing, and make the most complete Double "A" Harrow in the market.

THE PENN HARROW

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B

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GREGORY'S SEED CATALOGUE

[Table: Thirty-Six Varieties of Cabbage; 26 of Corn; 28 of Cucumber; 41 of Melon; 37 of Peas; 28 of Beans; 23 of Peppers, and 9 of Tomatoes. The above varieties, in proportion, a large portion of which were grown on five acre farms, will be found in my Vegetables and Flower Seed Catalogue for 1882. Seed free to all who apply. Customers of last season sent for and write for it. All seed sold from my establishment warranted to be fresh, and true to name, so that should it prove otherwise, I will refund the order price. The following introduction of Vegetable, Barberry, Blackberry, Raspberry, Rhubarb, Tomatoes, and Barberry Potatoes, Marblehead, Early Corn, the Blackbird Squash, Marblehead Cabbage, Phinney's Melon, and a score of other New Vegetables, I fear, I turn the patience of the public. New Vegetables, a specialty.

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THE HISTORY OF THE TOMATO

It is just fifty-five years since the first tomato was grown in this county. In the spring of 1857 a traveler who tarried over the night at a village inn at Frampton, Pa., presented the landlord’s little daughter with a fruit which was the first of its kind—grown from seed—the tomato seed—whether it came from the first ripe tomatoes ever grown in this county, which the little girl was so proud of her little tree full of bright red “love apples” that she carried it around every house in the village, and as the fruit was supposed to be poisonous the children were cautioned not to touch or handle it. The following year the little girl’s mother, against the protest of all the other members of the family, prepared, cooked and ate some of the fruit. As she pronounced it good and palatable and did not sicken, the tomato soon became a favorite dish in the family. The young girl, whose name was Matilda Brod-

The foregoing historical item is interesting, and the more so because it allows other people and other places, to put in their claims in regard to the introduction, and culinary preparation of the tomato by claiming to account for its introduction into “this country.” Some months ago a similar paragraph was going the rounds of the press to the effect, that about half a century ago, a prisoner, discharged from the York jail, had presented some seeds to the wife or daughter of the jailor, who had planted them in an enclo- sure attached to the jail, and had grown the beautiful red “love-apples which were also deemed poisonous, but which were subsequently discovered to be edible, and this was claimed as the first introduction of the tomato into York county. There is no reason why both accounts should not be true; and, if the whole truth were known, perhaps a dozen other places might establish a similar claim. It is certain, from a record made by Thomas Jefferson in his domestic diary, while he was President of the United States, that tomatoes were sold in Washington market for edible purposes. Their cultivation and sale may have been limited, but they were used as a culinary preparation on the table of the President, at least. We, ourselves, saw the tomato and the white egg-plant, under ornamental cultivation, more than sixty years ago, and, overshadowed, coincidentally, by the same manner, we were impressed with their unusual beauty, which we, therefore, equally impressed by its peculiar odor. About the summer of 1831 or 1832, we very doubtful y tasted the first stewed tomatoes, and we were by no means possessed in their favor; we learned to appropriate bull-frogs and lobsters in a shorter time, and with far less repulsion. Philip Miller, in his Gardener’s Dictionary, published about the year 1731, speaks of tomatoes being introduced into England from Spain, where they long had been cultivated for edible purposes, but were chiefly used as a condiment. Miller, himself, spoke disparagingly of them—considered them too “watery” ever to come into general use. This objection obtains to some of the varieties cultivated at the present day. But, a wonderful improvement has been made, both in the quality and quantity of this fruit. The best we have ever eaten were supplied abundantly in our markets this present season, large, solid enough, comparatively dry, granular, and finely flavored. They have become a culinary necessity.

Some saponaceous odors, the proud characteristic of the garden, are deemed by many to be a negation of beauty, but if we are to believe the learned, it is this peculiar characteristic which is responsible for the “love-apples,” and the “grape-leaf hoppers,” which were also known to the early tomato growers. But, we do not think that “drenching the vines from beneath with abundance of water from the hydrant” would have any permanent effect. It might have driven them off for an indefinite time, but as soon as the operation would have ceased, and the water had evaporated, they would have been back again. A few of them might have been washed down and have perished, but the larger number would only have hopped off to safer quarters, and there awaited the first opportunity to return. In consequence of this peculiar characteristic, they are difficult of access with a drench of any kind; although if applied when the insects are quite young (June and July) and to the surface of the vines, even water would prove more or less destructive, especially if applied with force, and from beneath. But, if a saponaceous solution, an alkaline dilution, or a tobacco, capsicum, or pyrethrum infusion, were applied with a garden syringe, every morning early, or late in the evening when they are in repose on the undersides of the leaves, the remedy would be very effectual. The transformation of these insects, like that of the Orthoptera (grasshoppers, etc.) and the Hemiptera (bugs) is what is termed “incomplete”—indeed rather a transition stage—through a development, in which there is very little difference between the young and the adult, save in the development of the wings and coloration. In their earlier stages they are feeble, and when disturbed merely shift their positions from the lower to the upper sides of the leaves, or rice versa, but as they advance in life they are given to flying or hopping, hence called “Leaf-hoppers.”

SEND in your subscriptions early.

KITCHEN-GARDEN FOR NOVEMBER

In the Middle States, the season for gardening is drawing to a close; indeed, it is limited to the preservation of roots, and the harder vegetables for winter use, and such operations as may be preparatory to another season. Now is a good time to transplant fruit and ornamental trees, shrubbery, &c., which are so lovely and light kind we prefer, decidedly, fall planting on heavy soil, as then the soil is clay, thus retaining the moisture near the surface, spring may be a more favorable season, and it is also generally esteemed the best for evergreens. Asparagus beds winter dress; Beets dig and store. Cabbages place in safe quarters. Carrots dig and store. They weigh up nicely. Drain vacant ground if needed. Horse-radish dig and store for convenience. Onions, in store, examine. Parsnips dig for convenient access. Salsify rates—deseed after cases. Both periods, according to locality, the winter supply of turnips should be cared for. —Lambrecht’s Rural Register.

The proper time for transplanting fruit, ornamental, and other trees—that is, whether the spring or autumn of the year is best—is a question of very long standing; indeed, we can remember it from an early boyhood, at least sixty years ago. Both periods had their staunch friends and advocates then, as they have now, and both could point to numerous cases, by way of illustration, where the one had succeeded and the other had failed, and neither party would plant out of their favorite season, “hit or miss.” Perhaps it never occurred to either party that “circumstances alter cases.” Soil and meteorological conditions have certainly much to do in determining the question. We recall a circumstance that occurred fully fifty years ago, when an extraordinary drought prevailed from the middle to the end of summer, when nearly all the late potato vines were burnt brown and crisp, and the tubers were about the size of marrowfat peas. One cultivator, either through indolence or indifference, failed to weed his “patch,” feeling that there would be no potatoes anyhow. Well, it transpired that he had the best crop of potatoes in the district—indeed a fair crop. The weeds shaded the vines and kept them green, and nurtured the tubers. This, however, would not have been successful as a rule—circumstances alter cases. Both periods of transplanting have their advantages and disadvantages, according to the conditions above stated.

INSECTS INJURIOUS TO FORESTS

Kaltenbich, in his work entitled “Die Pflanzenschädlinge aus der Klasse der Insekten,” has enumerated, in a closely-printed volume of 848 pages, the species of insects preying upon the different trees and plants of all sorts in Central Europe. The number of insects found upon some kinds of forest-trees is astonishing, though it is to be remembered that all kinds are not equally destructive, the most injurious and deadly forms being comparatively few.
The LANCASTER FARMER.

The above named author enumerated 557 species of insects injurious to the oak, and 107 obnoxious to the elm. (Some of these species, however, may number millions of individuals.) The poplar affords a livelihood to a large number of insects; the willows yield food to 236 species; the birches harbor 270 species; the alder, 119; the beech, 154; the hazelnut, 97; and the thornbean, or "iron-wood," 88. The junipers supply 33 species, while upon the pines, larch, spruce, and fir, collectively, prey 289 species of insects. In France, Perris has observed over one hundred species, either injurious to, or living upon, without being especially injurious to, the maritime pine; these he describes in an octavo volume of 832 pages with numerous plates. On this same subject, Ratzeburg, of Germany, published three beautifully illustrated quarto volumes, of about 800 pages each, over thirty years ago, and it is a standing reproof to us that we did not secure the work when we could have done so on the most liberal conditions.

Dr. A. S. Packard, Jr., of the Entomological Commission, has written a work, noticed in our Literary and Personal columns, in which he brings together a large number of American species destructive to forest and shade trees, and, although little more than the technical names of many of them are given, and extended descriptions of only a few, and the subject, of course, before the public as the probable forerunner of a more ample work on the subject on some future occasion, when the subject of forestry, and the preservation of trees of all kinds shall have taken a deeper hold upon the minds and the hearts of those who are materially interested therein. Indeed, it is a subject in which all are more or less interested, whether they possess large landed estates, or an acre, or nothing.

Of course Dr. Packard does not profess to have enumerated all the destructive species of insects that infest our forest and shade trees, but the few he does describe is suggestive of what remains to be described. The Oak is infested by 214 species, only 59 of which have appended descriptions. Although all these insect species live upon the substances of the various oaks, yet it is not manifest that the larger number are injurious—indeed, it is possible that some of them may in some way be even beneficial. Still, there are so many of such a decidedly injurious character, that it would not be wise to permit any of them to increase, if it can possibly be prevented; insect injury is a matter that demands attention. The blood of an insect, taken from an animal being may do no harm, or even be beneficial, but the result would be quite different if all the blood were tapped. The Elm supports 43 species of insect feeders, 21 of which have accompanying descriptions. On the hickory, in various ways, 87 species "make their living." The Black Walnut supports 11 species, and the butternut, 18; but singular enough, Oeurnaumus rubra, and Duoia minuta, so destructive to the foliage of these trees in Lancaster county, are not mentioned at all; and Sumo coccidae most frequently found on the apple, in this county. The Chestnut supports 18 species, and the Locust 20 species. The Maple, 37 species; the Cottonwood 16, and this is the more to be regretted because this tree has been largely relied on to furnish a forestry for the Western prairies. The Poplar is infested by 30 species, and the Linden, 29; the Birch, 21; the Beech, 10; and the Black Oak, 7. The Wild Cherry, 22; the Oake-temny, 4; the Red Wild Plum, 6, the June Berry, 4; the Mountain Ash, 10; the Sweet Gum, 5; the Persimmon, 3; Gun, 1; the Laurel, 19; Sassafras, 6; Sycamore, 9; Hazel, 8; Hornbeam, 12; Water Beach, 2, and the Vibey, 10. The willow has 99 species to feed the; the Pine, 102; the Spruce, 24, and the Fir, 10. The Hemlock, 10; the Juniper, 12; Larch, 8; the Cedar, 3; the Sequoia gigantea—the great California mammoth, 3, and the Cypress, 1.

Of course, it is not to be understood that all these insects confine themselves to the particular kind of tree mentioned in connection with them, for many of them are either indiscriminately, or readily adapt themselves to different kinds. Notwithstanding this, there are one thousand species of insects enumerated that are injurious, or may become injurious to forest and shade trees in the United States, and known to be such at the present day; and this does not include the many that infest fruit and other species of vegetation. This little work makes no attempt to deal in insect remedies; that is not its object; it is merely descriptive, as the science is not yet accessible to the author in a special department of practical entomology, and partially illustrates the immensity of the labor yet to be performed in this rapidly developing field. We have hardly more than entered the vestibule of practical entomology, and yet it is possible the government may eventually relax its aid, simply because it may be unable to appreciate the progress that has been made, and what yet remains to be accomplished.

A PLEA FOR TREES.

The High Commissioner of Cyprus attributes its chief curses, droughts and focustus, to the reckless destruction of the forests. As we were discoursing, he did the soil that covered the hills; that soil was washed down to the plains, choked the rivers, and formed marvelous swamps, the hills became bare and some of them disappeared in the dense forest, and the locust at once took possession of the barren ground, while the absence of trees deprived the earth of its annually fertilizing agent—leaf mould. The same process is going on upon the higher hills, and Sir R. Biddulph believes it is no exaggeration to say that Cyprus is in a critical state on this account. It is true, however, there is a hope that it may yet be recovered. There are districts of this country, too, where these remarks may be pondered over with advantage.

How often do we meet with paragraphs like the foregoing on this subject, which threatens to become threadbare or monotonous in the multiplicity of its repetition. It seems to be a sort of cause with which we find it convenient to explain a multitude of effects. That the presence or absence of trees exercises a more than ordinary influence over rainsfalls, general moisture and productiveness of the soil, has many advocates, and some of them of large experience and observing ability. Indeed, the arguments abduced are so many, and the authority apparently so unquestionable, that the wonder has been that any one whose opinion is entitled to respect, shoule gain the same. The theory itself constitutes a convenient little species of "modern thunder," wielded by agricultural writers and speakers from the halls of Congress, or rice roads, if that form of expression would be putting the matter more correctly. In our lifetime of seventy years we have been cognizant of several local changes on the earth's surface, which, if not caused by the removal of the trees that once occupied places made bare and arid apparently by their removal, then the phenomena seems absolutely inexplicable; and yet Prof. Isaac Bassett, Chaut, of Cambridge, Mass., in a communication to the editor of the New York Tribune, under date of September 30, 1882, goes very far to invalidate the theory, the arguments it relies on, and the presumed results. As the subjects of forests, rain-falls, droughts and floods seem now to be eliciting more than ordinary attention, it may subserve a useful end to to place both sides of the question before the thoughtful reader, and, if he can, enable him to make up his mind thereon; hence, in another column we insert Prof. Chaut's paper, for the elucidation of our interested readers. It is not to be inferred, however, that it expresses our sentiments, or that we unqualifiedly endorse it simply because we re-publish it. "It mought be so, but then again it moughtn't." It is just as likely that the one side of the question may be influenced by appearances as much as the pro side is. It would require twenty years of thorough observation and experience, perhaps, to affirm or overthrow the theory effectually, and our time seems a little too short to begin such a labor now. We will have to view it from other stand-points for the present.

THE FARMER'S CREED.

"Let this be held the farmer's creed: For stock, sow plenty let them feed! Your land sow with the best of seed; Let it not drag nor dressing need; Inocile, plough, reap with care and speed; And you will soon be rich indeed!"

THE FARMER'S FRIEND.

A tender young potato bug
Sat swinging on a vine,
And sighed unto a maiden bug:
"I pray you will be mine."
Then softly spake the maddened bug:
"I love you fond and true,
But oh my cruel-hearted pa
Won't let me marry you?"
With scorn upon his bagy brow, and
With glassy cold and keen;
That haughty lover answered her:
"I think your par-damn!"

THE FARMER'S WARNING.

"At ten a child, at twenty will,
At thirty strong, if ever;
At forty rich, at fifty wise,
At sixty good, or never."

THE FARMER'S FRIEND.

"How much to be prized
And esteemed a friend,
On whom we can always
With safety depend."
Our joys, when extended,  
Will always increase;  
Our griefs, when divided,  
Are hushed into peace.”

THE FARMER’S HOPE.

“Hope springs eternal in the human breast;  
Man never is, but always to be, blest;  
The soul, uneasy and confused from homeless  
Roots and expatiates on a life to come.”

THE FARMER’S PROVIDENCE.

“All nature is but art, unknown to thee;  
All chance, direction, which thou canst not see,  
Art, and a harmony of all unharmonious;  
Art, and a universal good;  
And, spite of pride, in erring man’s spite,  
One thing is clear—whatever is, is right.”

EXCERPTS.

The rye crop will probably reach 20,000,000 bushels.

Of buckwheat, Pennsylvania produces nearly one-half the entire crop. The total yield will be over 11,000,000 bushels.

The potato crop covers an area approaching 2,000,000 acres, with a yield of about 80 bushels per acre. A short crop is foreshadowed in New York State.

Returns to the Department of Agriculture from all the 1700 counties of the United States indicate a wheat crop slightly exceeding 500,000,000 bushels, or an average yield per acre of about 15.5 bushels.

In cotton, an unusual size and vigor of plant, with capacity for a large production, is reported. The general average of condition is higher than in any October for ten years, with the exception of 1875 and 1876.

More than one-half of all the barley produced in the United States is raised in New York, California, and Wisconsin. The average yield is 25.5 bushels per acre, and the total production will reach 45,000,000 bushels.

Oats are an immense crop. The average yield is higher than that of last year. Kansas ranks among the highest, as it does in wheat. The total production in oats of all the States will probably be 480,000,000 bushels.

The six principal winter wheat States will aggregate 244,000,000 bushels. There is a reduction in the acreage of the spring wheat area of the Northwest, but the yield may reach 113,000,000 bushels. The Pacific coast will probably yield 45,000,000 bushels, the Middle States 40,000,000 bushels, and the Southern States a total of more than 50,000,000 bushels.

Kansas holds its reputation for large returns to the toiler, with the extraordinary average yield of 19.5. The country north of the Ohio river, in the great wheat belt, averages nearly 16 bushels. Kentucky and Missouri promise about 14 bushels, and California 13 bushels.

The average yield of wheat the country over has never fallen quite to 10 bushels, and it has never quite reached 14 bushels in years of greatest abundance. This season it is unusually high in New York—15.7 bushels. In the New England States, except Vermont, it runs as low as 14 bushels. In nearly all the Southern States the average is low, ranging from 7 to 10 bushels.

Texas and Arkansas are exceptions.

The yield of corn cannot yet be accurately estimated. Much of it is still standing in stock in the fields. It is believed, however, that there will be at least 1,680,000,000 bushels, or an average yield of 25 bushels, or an average yield of 25 bushels to the acre, against 28 in 1875, and 18 in 1881. Of this total the States north of Tennessee and west of Virginia and Pennsylvania produced 1,595,000,000 bushels, or about 17 bushels per acre; the Southern States, 24,000,000; Middle States, 82,000,000, and New England over 7,000,000. The total product will be more than four hundred millions greater than last year.

Indigestion in Hogs.—When pigs do not thrive and try to eat gravel or earth it is a symptom of indigestion. They are probably overfed. Reduce their food one-half. Give the two pigs half a pint of sweet-oil or linseed-oil in the food daily for two or three days, and as they recover gradually give them a little dry corn in addition to their other food. Some charcoal would be of service and may be given frequently.

Diarrhea in a Mare.—When a horse is given too large a feed of low-colored food, and when changed to hay is affected by diarrhea, it is doubtless something in the hay that causes it. Give the mare half a pint of linseed oil once a day for a few days; cut the hay and wet it, and add to it a quart of bran and linseed-oil cake meal in equal parts, and add little salt to it. This will probably remove the trouble.

Remedy for Flies.—As a remedy for flies of all kinds in houses, stables, and greenhouses, it has been recommended to boil tobacco in water until the juice has been nearly all evaporated. As it is the essential oils of the tobacco which are effective for this purpose when it is burned and these are evaporated with the steam in the boiling, all the effect is produced without the disagreeable smoke of the burning.

The Cabbage Worm.—There is no doubt the cabbage-worm can be destroyed by using some very soluble substance that is poisonous to it, but not harmful to persons if it is wholly washed off—but that may easily be done. Nitrate of soda, glauber salts, and urinate of potash have each been tried the past season, and each one killed the worms. The different salts were dissolved in water, half an ounce to a quart, and sprinkled over the cabbages.

Reducing Bones with Poplar.—The waste potash from the nuricatic acid makers can be used to soften bones in the following manner: Pack the bones in a tank or pit or heap, with the potash and quicklime in proportion of 25 pounds of each to 100 pounds of bones, or even double that quantity, as they are of value for the fertilizer. When the heap is complete wet it until the lime begins to shake; then cover it with earth and leave it exposed to the rain during the winter. In the spring it may be shovelled out and mixed.

There and one-tenth pounds of corn will produce, when fed to a hen, five-sixths of a pound of eggs; but five-sixths of a pound of pork requires about five pounds of corn for its production. Taking into account the nutritive value in each and the comparative prices of the two on an average, the pork is about three times as costly a food as the eggs, while it is certainly less healthful.—Hartford (Conn.) Farmer.

A SALMON was caught in the Penobscot, near Bucksport, Me., the other day, that was 33 inches long and weighed 160 pounds. It was "tagged" as follows: "Salmon No. 1135. This was a female tagged Oct. 28, 1880, and dismission a few days later, weighing 73 pounds and measuring 20 inches in length. She had just yielded 1 pound 15 ounces of spawn, which would make her weight before spawning 9 pounds 7 ounces." Another, recently caught, was marked Nov. 13, 1889, and then weighed 83 pounds, Recaptured June 23, 1882, it weighed 141 pounds, and was in good condition.

One hundred and fifty thousand pounds of wool were purchased by one firm in Washington county, Pa., in one week.

Cows cannot be cheated into giving liberal quantities of milk. That which they give is in proportion to what they receive.

A good farmer is better than a poor doctor, and a good horse-shoer is better than a bishop who preaches sermons nobody wants to hear.

Always have a place where your chickens can be sheltered from the storms, and be kept comfortable. It is the lack of this that kills so many chickens.

There are two things that every farmer must have—things that subservice like purposes and are of equal importance—a grindstone and a newspaper.

A very successful farmer once remarked that "he felt his hand before it was hungry, rested it before it was weary, and watered it before it was foul."

Cotton-seed for Fowls.—We do not know if fowls would eat cotton-seed; it is hardly probable, unless the husk were free from lint. The writer has fed the meal to fowls mixed in equal portions with ground corn and oats and wet with hot water, or mixed with sour milk, and they thrived exceedingly well upon it. There is no doubt the meal will be a very useful feed for poultry, but as regards the whole seed it is doubtful. If some of our Southern readers would try it and report we should be glad to publish the facts.

Give the steers about two quarts of grain every day.

Stable the horses at night, if they are worked. In rainy weather, work them as little as possible, and rub dry.

Plenty of night feed for the milch cows. Soft corn, corn meal, corn fodder, hay, bran, beet tops, cabbage leaves and pumpkins, are what they ought to have.

Trys for forcing sows should have a rail round the interior, about a foot high and six inches from the sides. Feed warm slops after farrowing, and increase the quality of the food as the pigs grow. After three weeks' growth, feed the little pigs in a separate trough. Don't delay shutting up the pigs intended for fattening.

For early lambing, choose the best ordinary Merino ewes and a ram of pure breed.
About half a pound of grain daily, and your best pasturage for a few days, and they will take the rain readily. Sheep intended for winter-fattening should be well fed now. Don’t attempt to winter-fatten Merinoes until they have had three years’ growth. Keep the lambs in a separate flock. Use carbolic soap and some of the harder, the laudable, and indeed all sheep—well in severe weather. Be on the alert for dogs that kill sheep.

Feed the poultry well. Don’t let them get the habit of roosting on trees or utensils. The greater the number of eggs produced by a foul, the less vitality there will be in each; therefore, the first only of a laying should be set. Early chickens are the most certain to live, because force is stored up in the parent, before laying commences, sufficient to endow the first eggs or chickens with plenty of vigor. The chickens being hatched and assigned quarters, see that animal food is artificially provided for them, for they cannot thrive upon grain and vegetables alone.

CONTRIBUTIONS.

FOR THE LANCASTER FARMER.

BALANCE OF TRADE.

Mr. Editor,—I have been considerably interested in the discussion that has been going on for some time in The Farmer on "The Balance of Trade." The articles over the signature "J. P." seem to me so unreasonable in argument and so false in statements that I hope you will give some reply. The idea that a nation, any more than an individual, can grow rich by buying and consuming more than it produces and sells would seem only to need statement to meet with ridicule. I suppose it to be axiomatic that all production is gain and all consumption is loss; and as our imports are for consumption, and are actually consumed in our country, they measure our consumption over our production, and our exports measure our production over our consumption, and therefore the excess of imports (consumption) over exports (production): This would establish the idea.

It is very plain when we apply it to a farmer or manufacturer: what he produces and sells in the market are his exports; what he buys and consumes are his imports. If the former exceed the latter, he gains; if the latter the former, he loses. It cannot be different with a nation. If we import only necessary articles, of course the more we get for a given amount of exports the better; for, being necessary, we have to have them, and the cheaper we get them the better. But we import and consume hundreds of millions of dollars worth of luxuries every year, that is, as increasing the material wealth of our country is concerned, amounted to nothing whatever. Take the single article of wine. We import and consume about $12,000,000 worth of foreign wines, champagnes, etc. annually. Would any one but J. P. say that this $12,000,000 worth of liquor that is used almost entirely as a beverage, enriches our nation as much as though we had brought back, for our exports bills of exchange or gold coin, that would stand as solid, reserved wealth in our country, to be used in time of need, and not vanishing, leaving the people, before, as the liquor does. Gold coin being transmitted to pay the balance of trade, and not to be counted as imports or exports in this argument. Necessary we must have, or fall in our production, and of course it is best to get them where they can be obtained cheapest; but J. P. argument rests on the fallacy that all imports that have the same value money of are equal worth, to the nation that consumes them. No one would think of applying this reasoning to an individual, and say that a farmer who sells (exports) his wheat crop for $100 and brings back (imports) its value in whisky, and drinks up, or rather down, would be just as well off at the end of the year when the liquor is all gone as though he had invested the $100 in State or Government bonds.

Take the case that J. P. supposes, of a miller exporting flour, and importing for it salt worth here $75. Salt being a necessary article, the country may have gained as the miller did; but suppose he had imported the same value in rum and drank it, how would the country have been benefited, and how would it have helped the matter if he had sold it to his neighbor for consumption. J. P. seems to think that if the importer makes a profit, our country is that much richer. As well say that all the lottery dealers, stock-jobbers and gamblers, who grow rich by fleecing from the pockets of others, are adding wealthily to the country. The supposition that rum is the salt lost at sea and hence not being set down at the custom house as imports is only trifling, as it is the purchase of the imports, and not their actual passage over the water, of which we complain. We might as well suppose the salt spilled or destroyed in the street on its way from the ship to the warehouse after it had passed the hands of the collector’s office. Then the imports would exceed the exports, and according to J. P. there should be a gain, but neither the importer nor the country could be easily convinced of it. Or suppose the salt should prove worthless and could bring nothing in the market, hence the imports would exceed the exports, for is it the cost of the merchandise abroad that is put down at the custom house as the value of our imports, as it should be, and not what they may sell for here. Where would be the gain in this case? Or, how much richer would our country become by consuming seventy-five dollars worth of good rum than thirty sacks of worthless salt. If our prosperity is to be measured by the excess of imports over exports, all we have to do is an easy task, merely to trade our goods abroad for merchandise at enormous prices; the bigger the imports the more would our imports exceed our exports. If this theory is correct, why is it that all our stocks and securities go up in the market when our exports are in excess of our imports and gold is coming into the country, and go down when it is going out, to pay the balance of trade against us?

But it is J. P.’s wish that I wish more particularly to correct, his arguments not being very dangerous. One would suppose that a theory so false could hardly have many facts to support it; but quite a row of figures is presented. Without pretending to follow him through "England, Denmark, Austria and Hungary," the prosperity or adversity of which countries few of us know much about, let us see how near he comes to the truth in our own country, at a time that most of us can remember to our sorrow. I mean the period through which we went through the extravagance of our nation for nearly a decade after its close; namely, from 1861 to 1873. J. P. is compelled to acknowledge this to be a period of great depression and loss, and to make his theory hold good he has the exports during these years of great and extravagant consumption and comparatively small production, exceeding the imports by nearly a billion of dollars. I was astounded on seeing these figures, for if they were correct all my ideas of political economy must be given up. We all now our nation was a losing one from 1861 to 1873, through that terribly destructive and unproductive period of our civil war, and the extravagantly consumptive period since, till our financial panic in 1873 compelled us to stop in our mining course. If our exports during this time were exceeding our imports, why, black was white, and white black, and all the old rules about industry and economy leading to wealth, were false.

I got the American Almanac, compiled by Mr. Spofford, the Congressional librarian, who is the very best authority on these subjects. It puts the imports in excess of the exports in every year of the period except 1862, and the excess of imports in the whole 12 years was $1,199,106,171. Not satisfied with this, I wrote to Joseph Nimon, Jr., Chief of Bureau of Statistics at Washington, and got his reports from 1861 to 1879. His figures agree almost precisely with Mr. Spofford’s, making our imports exceed our exports from 1861 to 1873 by over a billion of dollars. It thus appears that J. P.’s statistics are exactly reversed. He had the right figures but got them on precisely the wrong side of the account.

After our extravagantly inflated balloon burst in 1873, and let us down so hard that some of our bones are aching yet, and we were taught by severe adversity, that we must go to work and practice economy, our exports began to exceed our imports, and from 1874 to 1879, our exports, according to the authority just quoted, exceeded our imports by 8657, 26, 901, or about 130 million dollars annually. Does any one pretend to say we were not gaining during these latter years? or, that we could have resumed specie payments, as we did in 1870, if our imports had exceeded our exports, as they had done, during the previous destructive decade? According to J. P. our country must have been losing at a terrible rate from 1874 to 1879, when our exports were exceeding our imports 130 millions annually, and gold was pouring into our country. John Sherman didn’t think so.—S. P., Lincoln, Del., Oct. 23, 1882.

SELECTIONS.

TREES, CLIMATE AND SOIL.

Relation of Forests to Rainfall.

Sir,—The idea has long prevailed that the removal of forests is accompanied with a diminished rainfall. As a matter of course the converse of this would be held as wide and with equal confidence. Such, no doubt, is...
the popular belief at this time. While in the Eastern States during the excessive drought of the past summer men were constantly attributing the failure of rain to the removal of the forests from our older States; we read in the public journals that Nebraska was favored with a more copious and more equally distributed supply of rain than in any former years. In this, as in all other events, it is claimed that the increased amount of moisture was due to the planting of trees, and that a sufficient breadth of forest growth was now planted to secure the State against drought for all coming time. This tradition is that the growth of trees favors the increase of rain, and that their removal is followed by drought. It is only within the present year that this theory has been combated by Professor J. D. Whitman, in his recently published monograph on "Climate Changes." The views therein set forth have not as yet been widely disseminated. They are so radically opposed to the opinions common of field that even if made familiar through the public prints, they are not likely soon to gain general acceptance.

Against the popular notion that the certain drying-up of the lands is the result of removing the forests, the Professor claims that "the question of desiccation is one essentially removed from the domain of man's influence." He would prove this to be the case by showing that the process began in geological epochs, long before man was on the earth to interfere with any of the operations of nature, that it has been continued down into historic time, and that it is now going on in the same general way, neither hastened nor retarded by the intervention of human agency. He believes that "the human race is no way responsible for the changes which have brought and are bringing rain upon those countries which, once prosperous, have now sunk into comparative decay." Egypt and the countries north of the Mediterranean are instanced as showing decay from a drying-up of the land and an increasing absence of moisture from the atmosphere. "As a rule, these nations have reached a stage of decadence from which they can never rise to occupy again the position which they have lost." No efforts of man are of the slightest avail to restore the former conditions of climate by planting forests or by any other means. There has been a loss rather than a gain in the quantity and frequency of rain in Egypt since the beginning of this century, despite the vigorous measures of the Government in planting forest trees.

Professor Whitman shows from many instances observed in our own land that the removal of forests has nothing to do with the falling-off in the amount or the frequency of rain, neither does the planting of trees occasion it. In this, for the Great Salt Lake has been shown to be the result of tree-planting by the Mormons; in other words, there is no truth in either statement." So plainly and so boldly are set forth these scientific principles! It is not the wasteful destruction of forests by man in a wholesale slaughter and burning which has brought the desiccation of dryness upon so many desert regions of the globe, but rather the failure of rain from wholly natural causes. Since that work was published in the spring some statistics representing future results of state tree-planting have been published by the Census Bureau, affording much interesting and timely information. These statistics were collected by Professor Sargent, who has made this matter a subject of special study. In his contribution to The North American Review for October, on "The Protection of Forests," he presents views identical with those of Professor Whitman, and is no less clear and emphatic in expressing them. "The popular belief that forests affect the rainfall has too long," he says, "confused the discussion of the forest question. It has carried it far beyond its legitimate limits." He is positive that trees have no power to increase the quantity of rain. He manifests not the slightest faith in the endeavors of Government and of individuals to overcome the natural dryness of soils and of climate by planting forests. On the contrary, he looks upon this dryness as the cause and not the effect of the lack of trees. Rain he regards as the agency which will clothe the treeless regions of the interior with woods. Indeed, he declares that "the position of the forests and plains of North America can be explained upon no other theory." From this it will naturally be inferred that the density of the original forests varies directly with the rainfall.

Here is a point which seems not well established. To the unscientific observer rain does not seem to be the one sole thing essential to the growth of forests on the plains in the Mississippi Valley. Even the casual visitor to that section must have noticed peculiarities in the growth of timber which climatic conditions will not account for. The character of the soil seems to have much to do with the kind of growth that covers it. Let the peculiar soil of the Illinois prairies be compared with the virgin soil of Wisconsin, as it will at times be more wooded on either side of the Fox River, and it will be found covered with luxuriant grass just as would be the case with a similar piece of ground located in southern Illinois. On the other hand, a deposit of drift, coarse in texture, and mineral in its composition, occurring as it sometimes does in Illinois, will be found covered with a growth of trees which not even the assaults of fire from the surrounding prairies have been able to exterminate. And yet these wooded gravel-beds are often higher than the grassy lands about them, and their loose texture lets the rains run through much faster than the water-drains off the level lands around.

Again, in those regions which are designated on the maps as treeless, wherever the ledge crops out along the borders of rivers, marshy spots, or swamps, trees, as elks and crab-apples, take root in the crevices and rooted hold and flourish there. It may be said that these owe their existence to the water oozing from the ledge or trickling down its sides. That this is not the case, however, will be seen from the fact that where the debris—piles of loose chips and fragments of the rock lying heaped against the base—becomes sufficiently pulverized to support trees under our New-England climate, it bears them just as naturally there; and in general, wherever in the West the soil is formed from the underlying ledge, whether that be lime or sandstone, the presence of its natural covering will be a luxuriant growth of forest. We are indebted for the extensive piney plains of northern Wisconsin and Michigan to the circumstances that all that region is overspread with drift similar in its character to the drift which abounds in those parts of Maine where pine is the native growth. Conditions of soil appear to have as much to do with determining the kind of growth upon it, whether trees or grass, as do conditions of climate. That trees are not born of the coarseness and frequency of rains is evident from this, that when it became desirable some thousands ago to convert old fields and pasture lands in the west of Scotland into timber, it was found necessary to plant young trees, since these did not sprout on the abandoned farms as they would do under similar circumstances on the hillsides of New England. And yet Scotland has a climate proverbially moist. Again, here is our own country, of all the lands once covered with trees, none are slower to renew their forest growth than some of the rocky pastures about Cape Ann, where excessive drought is much less frequent and less severe than in the well-watered interior. May it not be the case that on lands long kept in grass and where the dryness of the soil-mass maintains a wet, matted soil, the seeds of trees fail to germinate, or, if they do, have the young life choked out of them by the all-engrossing grasses? And may it not with good reason be supposed that the treeless condition of the prairies of the West is largely owing to the fact that there, too, the grasses have assumed and maintained the right of eminent domain?—

THE LANCASTER FARMER.

HEAVY MANURING, AND HOW?

Probably very few men in the West spend so much for fertilizers upon an equal area of land as I do. I am cultivating about forty-five acres, and, although I get fertilizers at a small cost as compared with prices about Eastern cities, yet their cost upon that surface this season will not be less than $2,000. A large share of this amount has already been returned to me, and unless the final result this season belies all present indica-
ARTIFICIAL INCUBATION.

There is not the slightest reason to believe that when the ancient Egyptians invented a method of artificially hatching eggs they were influenced by any desire to lessen the labor of hens. Their sole object was to produce more chickens than the hens produced. Although we may give a man credit for being wholly and exclusively practical in his own department and method, we must admit that she is a very clever bird. She will tread on her eggs and will leave more or less of them out in the cold. Besides, her capacity to hatch eggs is limited by her size. There are very few hens who can hatch out more than a dozen chickens, and, of course, a man wishes to raise chickens on a large scale he must supply himself with an immense number of hens. Artificial incubation obviates all these difficulties. As invented by the Egyptians and as practically practiced in our own day, a thousand eggs can be hatched at one time in a single incubator, and not one of these runs any risk of being broken or chilled.

The immense success which has attended the artificial incubation of chickens in France recently attracted the attention of Dr. Tavener, a learned and ingenious physician. He had adopted the artificial incubator for foundlings, and although the position gave him an admirable opportunity for experimenting with new medicines, he was a humane man, and he was annoyed at the large number of foundlings who died within the first six months of their life. The majority of these admitted to the hospital were weak and sickly, but in that respect they did not differ from the majority of all sorts of French infants. Dr. Tavener felt that it was a reproach to medical science that French infants could not be cared for as successfully as French foundlings, and he resolved to try what artificial incubation—if it may be so called—would accomplish if applied to infants.

The doctor constructed a child incubator on precisely the model of the ordinary chicken incubator. It was a box covered with a glass side furnished with a soft wooden bed and kept at the temperature of 86° Fahrenheit by the aid of hot water. He selected as the subject of his first experiment a miserably made infant, one, in fact, that had rashly insisted upon beginning the world as an infant, and, of course, was not in the best of health when he came to the incubator. It was placed in the incubator, provided with a nursing bottle, and kept in a dark room. To the surprise of the doctor it ceased to cry on the second day after it was placed in the incubator, and although it had been a prettier naturally sleepless child, it sank into a deep and quiet sleep. The child remained in the incubator for about eight weeks, during which time it never once cried, and never remained awake except while taking nourishment. It grew rapidly, and, when at the expiration of sixty days, it was removed from the incubator it presented the appearance of a healthy infant of at least a year.

Delighted with the success of this experiment, Dr. Tavener next selected an ordinary six months' old infant addicted to the usual pins and coils, and exhibiting the usual fretfulness of French infants. This child conducted itself while in the incubator precisely as its predecessor had done. It never cried; it spent its whole time in sleep, and it grew as if it had made up its mind to embrace the career of a professional giant. After a six weeks' stay in the incubator it was removed and weighed. During this brief period it had doubled its weight. It had become so strong and healthy that it resembled a child 12 months old, and it could actually walk, when holding on to a convenient piece of furniture.

These two experiments satisfied Dr. Tavener of the vast advantages of artificial child incubation. He immediately proceeded—with the permission of the authorities of the hospital—to construct an incubator of the capacity of four hundred infants, and in this he placed every one of the three hundred and sixty infants who were in the hospital on the 10th day of February last. With the exception of one who died of congenital hydrocephalus and another who was claimed by its repentant parents, the infants were kept continuously in the incubator for six months, when they were removed in consequence of having outgrown their narrow beds. The result will seem almost incredible to persons who are unfamiliar with the reputation of Dr. Tavener, and have not seen the report made to the French government on the subject by a select committee of twelve. The average age of the infants last February was 3 months and 3 days—the youngest being less than 12 hours old and the eldest not more than 11 months. Their average weight was 10 pounds, only one of the entire 350 having attained a weight of 30 pounds. At the end of six months of artificial incubation the average weight of each infant was 54 pounds, and there was not one who would not have been recognized by a casual observer to be at least eight years old.

In other words, six months of artificial incubation did as much as in the way of developing Dr. Tavener's foundlings as eight years of ordinary life would have done. The infants were strong and healthy, as well as; they walked within a week after leaving the incubator, and most of them have since learned to talk. These results surpassed Dr. Tavener's most enthusiastic expectations, and there can be no doubt that his system of artificial child incubation will be adopted not only in every child's hospital in France, but in every private family throughout the civilized world.—N. Y. Times.

INDIAN CORN IN KANSAS—ITS VALUE AND IMPORTANCE.

The crop of Indian corn is one of the most important and useful of all the crops grown in Kansas. The average yield of 1880 was estimated at 1,717,000,000 bushels; the wheat crop of the same year was estimated at 498,000,000 bushels.

The acreage of corn in Kansas the same year was 2,965,070 acres, and the product 108,704,927 bushels, an average of 1,520,639 bushels per acre of winter wheat, with a product of 17,550,399 bushels.

On land as well adapted to cultivation and production of corn as the prairie and bottom lands of the West, it has the advantage of any other crop of grain.

The cost of an acre of corn, put in the crib, is as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plowing</td>
<td>$1.00</td>
</tr>
<tr>
<td>Planting and seed</td>
<td>35</td>
</tr>
<tr>
<td>Harvesting twice</td>
<td>25</td>
</tr>
<tr>
<td>Plowing three times</td>
<td>1.00</td>
</tr>
<tr>
<td>Husking</td>
<td>1.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$3.00</td>
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The average yield of corn for 20 years is 35 bushels per acre, and the price has averaged, for the same time, 30 cents per bushel, giving a product per acre of $1.05, at a cost of $3.90.

But the great advantage of the corn crop is, that it can be fed out at home, and taken to the market in the shape of beef and pork. When this is done, there is hardly a year in Kansas that will not return more than 30 cents per bushel. With a good stock of hogs, and pork at $3.50 per 100 pounds gross, 40 cents per bushel can be realized for corn, or when fed to good grade steers, at $4.25 per 100 pounds, will make 40 cents per bushel, besides
THE WASTE PICKED UP BY THE HOGS FOLLOWING THEM.

Corn is not as EXHORBITANT TO THE SOIL AS WHEAT, since the nutritive value per unit of seed of our prairie land that will produce corn successfully from 10 to 15 years in succession. I am not in favor of raising the same crop on the same land after year, and would consider such a course poor farming.

There is a crop that feels the effect of good land more than corn. The application of 20 loads of manure to the acre on land planted to corn will increase its yield from 8 to 10 bushels for three years, an effect will be seen at that time.

We do not, at the least, make the most that can be made out of our corn crop. It pays well to grind corn for horses, beef cattle, milk-cows, and partly for hogs. By grinding corn there is a saving of one-third. The farmer who feeds from 1,500 to 2,000 bushels per year can well afford to invest $200 in a mill and horse-power.

We do not fully utilize the crop of corn-fodder. The fodder on an acre of corn yielding 40 or 50 bushels is worth as much for feed as a ton of timothy hay, which is about an average yield of timothy on prairie land. The cost of cutting up an acre of corn is $1.25. Of course there is some value to the feed left standing in the field until the corn is gathered and stock turned in upon it, but 10 acres of corn-fodder cut in good season is worth as much as 50 acres left standing.

We need to say but little about the cultivation of corn. The means for planting and cultivation of corn have greatly improved during the last 20 years. With the implements of to-day, two men with good teams can plant and well cultivate from 80 to 100 acres of corn. The lister is of modern invention, but there is a question whether it is really an improvement. No better corn can be raised by its use than can be raised by the old-fashioned spade and handplow, and planted with a horse-plowner with check-row attachment. In very wet springs there are many objections to the use of the lister. This spring corn planted with the lister is not as good as that planted with a planter. The heavy rains have done much damage to listed corn; some fields washed out entirely. It is a little saving of labor is effected by the use of the lister for three or four years, damage may be done the fifth year by heavy rains to more than overbalance the gain. If we wish to grow corn with success in Kansas, we had better settle down on good plowing, thorough culturing and plowing beds in young fields, by application of manure, turning under clover and other grasses, feed our corn at home, and in this way every farmer will make a success of raising corn.—JOHN JASPER WHEELER, Atchison county, Kansas.

THE EFFECT OF A GOOD SILO.

Last year I built a silo of 230 tons capacity, wholly of stone and Rensselaar cement, with a frame and roof for cover. It is a good one (I believe in no other), no water can get in; no sap from the corn can get out, as so many complain of when their silos are not built or made of slate cement, or any poor material. On account of the long-extended drought in this part of New Jersey, I was able to scrape together of good, bad and indifferent, half-dried, wilted, grown and half-grown corn, some 30 tons of ensilage after curd. I can testify to the extremely satisfactory results I have had on my farm of raising a silo. I am satisfied on this subject, if there had ever been any doubts. I used it as food for cows 110 days continuously, until all was fed out.

Within a week from the time we began feeding hay, and though with an addition of grain, the cows last at least 25 per cent. of milk; the cream did not make as much butter, and the butter was not of as good color or flavor. During the time of feeding ensilage we were unable to discover any other than the most satisfactory taste to milk, cream or butter. The cows were in the most perfect state of health. I raised a Jersey calf dropped in September, which had all it wanted of ensilage, and I will show it any day beside any man's calf six months older. I fed for 90 days eight Western steers, which averaged a gain of 13 pounds per day. The ration for cows and oxen was 22 pounds of ensilage morning and night, and 15 pounds of cut cornstalks at noon. The cows had three quarts of cornmeal and two quarts of wheat bran per day, and the steers four quarts of cornmeal for 43 days, and five quarts for the last 45 days. Our success with the steers quite astonishes the farmer who was not in the old way. The butcher says the cattle slaughtered well, and the meat was remarkably fine, and gave him every satisfaction. The use of poor ensilage, made from corn half ripe, or frost-bitten, I have reason for believing, would not give such satisfactory results. I am one who believes that to make good ensilage the corn should be cut at the right time, cut the right length, put away in a good silo, and covered over nicely, and then well and thoroughly weighted down.—W. I. M., in Country Gentleman.

AGRICULTURAL PROSPERITY SHOULD BENEFIT THE FARMER.

The future of farming in the United States has never, in the history of the country, been so propitious as this season. Two of the great staple products of American agriculture, the two which are most to be relied upon for the general prosperity, to wit, hay and wheat, have never been so abundant. It is not unlikely that the corn crop also may exceed that of any year that has preceded this. The average of all other staple crops is good. Already these facts of great power are beginning to be felt. This is the tide in the affairs of men to whom the farmers—which takes in all those who live by the production of the land—living in his retirement little knows the influence which his general prosperity exerts over the commercial relations of the country. The manufacturer knows, the importer and exporter knows, the railroad king knows, the politician knows, and all appreciate this influence. Unfortunately for the farmer there are, among all classes of men, ambitious speculators who use their knowledge of the above facts not only to increase their legitimate operations, but to study how they can best take advantage of the ignorance of farmers to appropriate the prosperity of the latter to their own advantage. To this end there are "stock exchanges," "corn exchanges," "lankers' and brokers' boards," "boards of trade," "railroad syndicates," etc., etc., the business of which is, by organizing the buying and sale of farm products, not for the benefit of the farmer at home, not for the benefit of the consumer of such products, but for the sole benefit of the jobbers and traffickers in these commodities, and the farmer in the country home, without organization, is the victim of these combinations and machinations.

It is a serious problem how farmers can so unite and combine as to protect their own interests against the organized outrage and extortion of these other combinations.

Running through most of the grain and agricultural lands of the country there are ofifer-work of railroads, the original stock of which was largely subscribed by farmers, in the belief that proximity to railroad transportation would advance the profits of farming, but unfortunately railroad corporations and syndicates so completely monopolize the operations of railroads that the farmer never sees the benefits of the roads, nor the color of the money he invested in them.

Farmers generally know these facts and deplore their inability to remedy the evils.

The organization of "Patrons of Human Rights" was conceived by and created in the belief that a solid combination of farmers with their individual intelligence and combined strength, could control legislation, and through it regulate transportation and purchase and sale, so that the producers would, at least, be able to divide with the operators in the profits of farm products.

But this organization, in its extreme caution to keep out of it "politics and religion," and avoid dangers within itself, carried its caution to the extent of inability to guard against danger from without, and after years of labor finds its organization outgrown by combined corporations, and out-witted by wily politicians, until its very power is turned against itself, and made the instrument of those outside combinations which it was designed to protect the farmer against.

If the founders of the Patron's of Husbandry, instead of excluding politics from its deliberations had made it a political, not partisan organization, the purpose of which was to protect the interests of the farmer by electing legislators who would enact laws in the interest of agriculture, and by electing executive officers who would preserve those interests, that organization could have been the prototype of those developed and manipulated in the interests of capital and monopolies, be the dictating power in State and National Legislative bodies. Capital in the United States to-day controls legislation, and legislators control the industries of the country, more especially the agricultural industry. This order of things should be and can be reversed, so that farmers, being in the majority over any other class of men, should control legislation—State and national—and honest legislation should control capital. In a Republican form of government majority is alone rule. The farmer is the majority. Forewarned is to be forearmed. Farmers should and can protect their industry, and reap the fortune from this tidal wave of prosperity.
TREE-PLANTING IN STREETS AND GROUNDS.

The whole of good farming and gardening does not consist alone in raising good stock and growing good trees; the farm and home need ornament and pleasant appearances.

Trees and shrubbery, well chosen and properly arranged, constitute the means to give charm to the homestead, as also to give beauty to the town and park; their shade is also a comfort.

Taste, knowledge, and skill are as necessary to secure highest satisfaction in tree and shrubbery planting, as in drawing fine landscapes and designing elegant buildings; being simply a good civil and topographical engineer does not qualify a person to be a successful and tasteful landscape gardener; landscape gardening, in its completeness, is a high order of profession in itself, requiring talent and experience to attain high efficiency. True, a thorough study of surveying and engineering is considerable help in that direction. It takes fine talent and varied experience to make such a happy landscape gardener as Wm. Saunders has proved himself to be.

Besides knowing the character and habits of trees, their climatic requirements, the best mode of planting, and the right adaptation of soil to their successful growth, an eye and judgment for pleasant effects are equally requisite; in fact, both taste and experience are indispensable in producing the most delightful results in lawn, park, and street planting of trees and shrubbery.

In addition to various evergreens—as cedars, firs, pines, arborvites, and the like—the ashes, catalpa, elms, lindens, maples, oaks, and some others are both useful and handsome, and are adapted to a wide range of climate and diversity of soils.

The best experience proves that the planting of young trees should not be too deep; in this respect, when articles with plant-growing, the methods or habits of nature are safe guides to tree-planters.

An experienced writer in this matter says: "Large, round holes for tree-planting are better than square ones; the bottom of the hole should be elevated towards the center, with rich, pulverized soil, upon which the tree should be placed in planting; then the roots should be carefully spread out in all directions toward the circumference of the hole, and carefully covered with rich, fine soil, the tree to be gently shaken and slightly lifted while this is being done in order that soil will settle around all the roots."

Full and complete guide and instructions cannot be given nor expected in a single short article, on this beautiful and too much neglected subject; but only a few suggestions are thrown out on the kinds of trees to be chosen and the rudiments of planting. In future articles I will give more specific details, in regard to the maturities and necessities of various trees and shrubs, as also in regard to the maturities and necessities of various trees and shrubs, as also in regard to adapting different ones to various avocations and soils. This is to awaken interest only.

The planting of various fruit-trees, as well as their adaptation to soil and locality, will also be considered in these plain and brief articles, with the aim of being perfectly practical rather than fanciful. Some varieties of fruit-trees are decidedly ornamental as well as useful for fruits, especially when interspersed among cedars and pines, and in many cases drawing among evergreens, particularly cedars, is known to prevent, to a good degree, the ravages of many insects upon the fruit-trees.

The pear tree, the apple tree, the cherry are most of them are truly grateful in their habits and forms. We have known plum-trees growing among walnut and hickory trees to be preserved from insects.—D. S. Curtiss.

THE FAIR SEASON.

We are in the midst of the season for fairs and expositions. Whoever has produced anything of more than usual excellence in his own estimation and that of his friends, whether in the farming, mechanical or art line, brings it forth for public examination and approval. Mankind there is something best of the agricultural fairs has enlarged of late years, until they have become comprehensive industrial symposiums, with a little extraneous entertainment included in the shape of horse-racing and occasional other diversions. In many localities there is a department of art, and where circumstances will not permit of that dignity to its high sense, there are exhibitions of fancy needlework and what not from fair fingers, that help to give an agreeable coloring to the whole and widen the field of interest. The motto seems to be, "something of everything for everybody," and it is a very good one.

The ancient principle of fairs is competition, and the benefits they bestow come in the shape of the advertisement of new and practical ideas, comparisons, and a relaxation of the humdrum round of daily life. The farmer and the mechanic are brought together in a mutually profitable way. If the latter has an improvement in the way of saving agricultural labor, and is interested in finding customers for it, the former is equally interested in finding it out. Tests between the different machines are frequently made before discriminating witnesses, and, by a process of natural selection, the good are established in the market, while the inferior are numbered with the infinity of human failures upon which progress is built. The results of different methods of cultivation are brought together and discussed. The merits of various kinds of stock are illustrated, and that species of intelligence is disseminated among farmers which is of the greatest service to them.

The aggregate influence of fairs upon the advancement of the agricultural interests must be very great. Formerly they were mainly places of bargain and sale; now they have been transformed into educational and cultural centers, and they are developing in accordance with the demands of the age, until something like a universal system has been evolved.

The county fairs supply the want of local interchange of ideas and comparisons; then come fairs, representing larger sections; then State fairs, and so on up to the world's fairs, which have now, it may be said, become established institutions held at a comparatively regular intervals every few years, and in the sustentation of which the civilized nations have spontaneously and, in a manner, instinctively united.

These fairs, large and small, are great levelers, but they level up. Their effect is to raise the low places, not to cut down the substantial heights. They do not strike an average, but push the inferior out of existence altogether, and when all the world's excellence and advances are to choose from, the effect is a compact partnership of civilized forces in the work of progress. In thus regarding the world's fairs, the smaller ones are not to be despised. They are as important in their sphere as the larger ones are in theirs. It is through local endeavor and the inspiration of local competition that the marvels of ingenuity and of careful labor are produced. Usually each separate locality possesses advantages in some particular direction that others are deficient in. The local competition they all represent is not only an incentive to the effort, but it is instructive. Many heads can furnish more valuable hints than one can. The more the general subject is regarded the more it will appear that the fair system is a very important one, and bears a little short of vital relation to the various industries. It supplies them with a nervous circulation that they would advance very sluggishly and unevenly without.

ITALIAN BEES AND HOW TO ITALIANIZE THE COMMON BLACK BEES.

After having tested the Italian bees for ten years we can say very truly that they are far superior to the black or native bees. First, they are more energetic and resist the attack of robbers and the bee-moth; never had a strong colony of Italian robbed or destroyed by the bee-moth. Second, they are better honey gatherers and can gather honey from flowers that the black bees cannot. Our Italians, during a dry spell, the fall of 1881, were busy working on red clover while there could not be a black bee seen. Third, they will gather at least one-third more honey than the black bees, to take one year with another. Fourth, and last, they are more quiet and better to handle, the bees stick close to the colony.

A pure Italian should have three distinct, yellow bands or rings across the lower part of the abdomen, and a bright yellow hair over the body. The so-called Albino bees are a strain of Italians, having white bands and hair; they are the finest workers of the two and very nice to handle; they are of American origin, and are distinguished in scientific bee culture as (Apis America.) We got our first queen of this strain of Italians, October, 1879. The next year, 1880, this colony gave us two swarms and 110 pounds of one-pound sections of honey, and the same colony gave us 63 pounds of one-pound sections of honey. The honey of 1880 brought us $16.50, while that of 1881 brought us $12.00.

Our average last year was $22 pounds per colony (Italians,) when the average per colony black bees, last year, fell below par.

How to Italianize.

First, procure a good queen from a reliable breeder, and when the queen arrives, if in
PREVENTABLE LOSSES ON THE FARM

It is a "penny wise and pound foolish" system, to breed from scrub stock. There is not a farmer in this region who has not access to a pedigreed Shorthorn bull, by a payment of a small fee of two to five dollars, and yet we find only one animal in ten with Shorthorn blood. It is a common practice to breed to a yearling, and as he is almost sure to become broody, to sell him for what he will bring the second summer. Many farmers neglect care of their breeding until it is too late. It is expensive, is a hit-and-miss business, and not for the practical farmer. — Maryland Farmer.

YIELD AND CONDITION OF CROPS

The October returns include the entire area of nearly seventeen hundred counties of the United States, representing nearly all of the breadth in cereals, potatoes, cotton, tobacco, and sorghum. They give direct estimates of the yield per acre of the small grains, all of which are harvested, based on threshers' records as far as obtainable. Errors have been carefully eliminated, and unreasonable estimates examined for correction. The result of this test of production gives the largest figures of the official series of tests, from the involuntary impulse of farmers to think and speak well of their acres; so that, on comparing the direct comparison, by counties, with the product of last year, and the adjustment of possible discrepancies by further investigation, the outcome may possibly be lower than is indicated by the figures of yield per acre.

The crops not yet generally harvested, corn, potatoes, and buckwheat, and cotton also, make a final report of condition, the rate of yield to follow in November.

WHEAT

The October returns of yield per acre of wheat, estimated from results of threshing, foreshadows a product slightly exceeding 500,000,000 bushels. The average yield per acre will not much exceed an average of 13.5 bushels, on an acreage slightly under 37,000,000. There is a reduction of area in the spring-wheat region, and a large yield in the great winter-wheat-growing belt of the West. The six principal winter-wheat States will average 214,000,000 bushels, or nearly half the crop of the United States. The spring wheat of the Northwest may make 113,000,000 bushels. The Pacific-coast crop, which has been persistently exaggerated in commercial estimates, may possibly reach 47,000,000 bushels. The Middle States have produced about 40,000,000 bushels, and the Southern States slightly in excess of 50,000,000. Slight modifications may come from further investigation as the results of the harvest are more closely tested; but the total cannot be much changed, and certainly cannot be expected to enlarge the aggregate above, which requires nearly as large a yield per acre as has ever been reported in this country by census or official estimate. The average yield has never fallen quite to 10 bushels (though very near it last year), and never has quite touched 11 bushels in years of greatest abundance. It was 12.9 in the census year, and the crop of 1889 was estimated at 13.1.

The yield in New England varies from 14 bushels in Maine to 18.7 in Vermont. It is unusually high in New York, 18.7 bushels; in Pennsylvania not quite so high, 15.3 bushels; Delaware and Maryland secure good yields; but the South, from south of the Mississippi River, though yielding better than usual, ranges 7 to 10 bushels; Arkansas and Texas do better.

Coming to the winter wheat belt of the Ohio Valley, the country north of that river averages nearly sixteen bushels. Michigan and Illinois stand highest in this belt. Kentucky and Missouri promise about 14 bushels; Kansas reports the extraordinary yield of 19.5, a crop of about 31,000,000 bushels. The yield of California is apparently about 13 bushels, while Oregon and Washington are higher and more uniform in local areas.

The quality of wheat is generally good; high in the Eastern and Middle States and approximating 100 in the South. In Illinois the average is 96; in Indiana, 97; in Ohio, 96. Some loss of quality in Michigan from heating in the stack, reducing the average to 90. In West Virginia it falls to reach perfection by nine points, Iowa, in the spring wheat belt, makes lowest returns, averaging 07. Further west, and on the Pacific coast, quality is reported uniformly good.

OATS

The average yield of oats will be somewhat higher than last year or 1879, and the product will be nearly as large as that of wheat, probably about 480,000,000 bushels. Illinois, Iowa, New York, Wisconsin, Missouri, Pennsylvania, Ohio, Indiana, and Kansas are States of highest rank.

RYE

The indicated average yield of rye is 14.7, making a crop of 25,000,000 bushels, or nearly the same as that reported by the last census. The quality ranges, with few exceptions, from 35 to 100.
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BARLEY.

The indicated average yield of barley is 23.5 bushels per acre, aggregating 45,000,000
bushels. California, New York and Wisconsin, together produce more than one-half, or
27,000,000 bushels. The product in 1879 was
44,000,000.

BUCKWHEAT.

The prospect for buckwheat is good for a
nearly average product, eleven to twelve
million bushels. Pennsylvania produces nearly
half of the crop, and reports 56 as the average
yield, 100 representing a full normal yield, and not an average of good and bad
seasons. New York makes an average of 95.
No other States produce half a million bushels.

CORN.

The yield per acre of corn will be reported in
November. Condition averages 81, being
very high in the South, and comparatively
low in States of largest production. In Illi-
nois, with 5 per cent, decrease of area, condi-
tion is only 72; it is 70 in Iowa, and 87 in
Ohio; these States produced 40 per cent of
the crop. A careful comparison of changes in
area and condition indicates an average yield
of 25 bushels per acre, against 28 in 1879, and 18 in 1881. The average of a series
of years is between 26 and 27 bushels.
New England will produce, according to these
returns, seven to eight millions; the Middle
States, 82,000,000; the Southern States, 846,
000,000; those north of Tennessee and west of
Virginia and Pennsylvania, 1,250,000,000; an
aggregate of 3,080,000,000. Later returns of
product may slightly reduce, but cannot
materially increase this result. The 1,900,
000,000 product procured by the corn buyers
is a myth, which has been so persistently as-
sumed that the public may be misled. The
increase in the South, where ten to fifteen
bushels may be considered a large yield, can-
not make good the reduction in Illinois alone.
It is gratifying to know that the product is
more than four hundred millions greater than
last year, and ample for a liberal supply for
domestic wants and exportation; a supply
never exceeded, with two exceptions, 1879
and 1880, notwithstanding a later and more
unpropitious planting season than has oc-
curred in many years.
The injury to corn in New England, by
drought, was somewhat serious. The desired
rains did not fall anywhere out of Vermont,
except locally. Oxford county, Maine, "has
the largest and best crop for ten years."

Burlington and Gloucester counties, New
Jersey, report falling off in condition during
September, but the reverse is true of the State.

Much "soft" corn is mentioned in Penn-
sylvania, but no fear of injury by frost had
yet been realized, and the fair weather has
taken much of the crop out of danger.

While corn in Richmond county, Virginia,
was "seriously injured by drought," and in
Botetourt "suffered materially from too much
rain," in Orange "some fields will yield 70
bushels per acre," and Fanquier reports "25
per cent, above an average." The general
report from the State is not unsatisfactory.

In the South the large promise of the season
fails but slightly by reason of severe storms of
wind and rain in September. Damage from
these causes are mentioned in Transylvania,
Stanley, Davie, Cabarrus, Davidson, Henderson,
Beaufort, Camden, Gaston, Iredell, McDow-
ll, Rowan counties, North Carolina; Union,
Chester, Edgefield, South Carolina; Decatur,
Harris, Banks, Gordon, Talbot, Carroll, Floyd,
Wilkes, Baldwin, Putnam, Early, Dawson, Wilcox,
and Habersham, in Georgia.

In Alabama and Mississippi rain and floods
are mentioned in some localities, but an
abundant crop is harvested in both States.

But little discontent with the harvest is
evinced in Texas. Hardeman county men-
tions chinch bugs, and more rains would have
been acceptable in limited portions of the
State.
West Virginia made no improvement dur-
ing the last thirty days. Several counties
suffered too much rain.

No complaint comes from any section of
Kentucky. Returns indicate an abundant
crop in Hillsman. Best yield in twenty years
in Kentucky.

September's considerate weather did all
that could be done for corn in Ohio, and "out
of danger" is the report from all parts of the
State. Cutting is in progress, and frost did
not injure even the latest fields.

The danger from frost has passed in In-
diana; there is but slight local variation in
condition, and the improvement by reason of
fair weather in September is general.

Frost caught some fields in Illinois, and its
damage is mentioned in Kanakake, Edgar,
Kendall, Henry, Fulton, Winnebago, Boone,
De Kalb, Grundy, and Livingston counties;
the late grain received most of the inju-
ry, and the condition improved wonderfully
during September.
Wisconsin corn suffered from frost in a few
counties. In Dodge it was cut prematurely
for its protection, and the quality was lowered.

Many counties report an average crop of good
quality—among them, Waushara, Milwaukee,
Waukesha, and Juneau.

In Wautowam county, Minnesota, corn was
"badly injured" by frost. Other counties
mention it, while many escape wholly.

POTATOES.

The average condition of the potato crop is
81, indicating a yield of about 80 bushels per
acre on an area approaching 2,000,000 acres.
In New York the average is 70, forshadowing
a short crop in a State of large production.
In Maine, 85; Vermont, 84; and less in other
parts of New England. In Michigan the
temperature varied, and throughout the Ohio
Valley, Missouri, and Kansas, and the crop
in the Southern States condition is unusually
high. In the northwest it is somewhat re-
duced.

Potatoes in New England shared in the
disastrous influences of the drought. In New
York and New Jersey a poor condition
exists. Pennsylvania reports large crops in
many counties, and rot in others. August
rains did good in Delaware.

Large crops are mentioned in Williams,
Allen, Franklin, Knox, and Geauga coun-
ties, Ohio, and little complaint comes from
any part of the State. Potatoes are reported
in Monroe, Delta, and Houghton counties,
Michigan. A fine crop is reported in Indi-
an. In Illinois, rot is mentioned in Du
Page, Kendall, Jo Davies, Carroll, and
Boone. Shelby has an immense crop. The
Wisconsin product is large, but rolling in
Kewance, Washington, Pierce, Fond Du
Lac, Racine, and Dodge. Local variations
occur in Iowa. A fair yield is reported in
Missouri and Kansas, especially of the early
planted.

COTTON.

The cotton returns of the Department of
Agriculture for October indicate unusual
size and vigor of plant, and a considerable
large production. The late development of
fruitage, and the reported indications of a
small top crop, limit the otherwise extraor-
dinary prospect. The coincidence appears
of the same general average of condition in 1881
and 1882 for June, July and August, 88, 92,
and 94, respectively. During August and
September, in 1881, condition fell from 94 to
66, but in the same period of this season to
88 only. This is higher than in any October
for ten years with two exceptions, 1875 and
1878.

Compared with the August returns, there
is a loss of one point in Florida and Texas;
two in Alabama; three in North Carolina
and Georgia; four in Virginia, Mississippi,
and Arkansas; five in Tennessee, and six in
South Carolina. The figures for Virginia are
86; North Carolina, 85; South Carolina, 89;
Georgia, 86; Florida, 82; Alabama, 88;
Mississippi, 82; Louisiana, 82; Texas, 100;
Arkansas, 96; Tennessee, 84.

Rain has been abundant throughout the
belt, with a few local exceptions in the south-
west. Severe storms are reported generally,
with occasional injuries consequent, while
some correspondents claim a benefit in partial
sheeling of potatoes, stopping growth, and hast-
eening maturity.

Rust is slight and not injurious.
The caterpillar is present in the Gulf States,
but no appreciable damage is reported east of
Mississippi. The partial loss of leaves where
the worm exists is favorable to development
of the boil. Slight damage is reported in
Madison and Caddo, in Louisiana, and in a
few Texas counties.

The boil worm is doing some injury in bot-
tom lands of Russell county, Alabama; in
Dallas, Denton, Eastland, and Stephens,
Texas; in Pope, Arkansas, and in Fayette,
Tennessee. This pest has perhaps done more
injury than the caterpillar, but the losses from
all insects will be insignificant.

The range of possibilities between early
frost and a long and favorable season for
maturing and picking is much wider this season
than usual, owing to the present rank growth
and greenness of the weed, and later ripening.

OUR LOCAL ORGANIZATIONS.

LANCASTER COUNTY AGRICULTURAL
AND HORTICULTURAL SOCIETY.

The Lancaster County Agricultural and Horticul-
tural Society met statutorily in their room,
Monday afternoon, Nov. 6, with the following
members present; Joseph F. Warner, Paradise; H. M. Beale,
Marietta; John C. Lineville, Salisbury; M. D. Ken-
dig, Manor; John H. Landis, Manor; W. H. Bol-
linger, Warwick; C. A. G. East, city; H. G. R. Peque,
F. B. D. Ferris, city; M. Hershey, Sa-
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THE specimen Buffalo, another full R., by some member "Gapes milk."

Mr. English stated that it was believed that Dr. Bollinger had agreed to address the society at its October meeting, but on account of illness he was unable to do so. He was unable to promise when he would be able to do so, on account of ill-health and a great amount of other work on hand.

Mr. Linville, of Salisbury, reported an unusual growth of grass this fall. The stubble fields have an extraordinary growth of clover. The wheat straw in October looks well. The corn crop is about an average. He never knew the corn to put in the crib so green as it was this fall, and he was afraid this would prove a disadvantage.

H. M. England, of Marietta, said young clover was doing remarkably well. He had made young hay from it, something he had never done before. It was a little coarse, but the cattle appeared to like it. The fall for last month was one inch.

M. D. Kruglak reported the rainfall in his section for the first 5 1/2 inches.

These reports were corroborated by other members of the society.

Mr. Kruglak inquired as to the probable tendency of the wheat market.

Mr. Dillihaller said he was of the opinion that the price of wheat would remain about as it is at present. He said there could not be any argument which would lead him to believe that it would advance in price, for the reason that the late crop was larger than it was for some years. The Chicago Board of Trade put the crop much higher than it ever was.

Mr. Engle asked when it was most advisable to plow clover and corn, fall or spring? He said he was of the opinion that fall was the best time, especially if the season was dry. It should be thoroughly cultivated in the spring.

Mr. Bollinger’s practice was fall plowing. His reasons for fall plowing were because he had more time; another was because in spring the ground was too wet, as a general rule; the corn should be thoroughly cultivated in the spring; this year he was expecting 65 or 70 bushels per acre, although it was planted in May.

Mr. Resh advised mowing heavily in the fall, and then plowing it thoroughly in the spring. He had tried this plan and always found it to work well, especially if there was a good set of clover.

Mr. Hoover said he held the same idea, to a great extent, as that held by the gentleman who had preceded him. But here, he said, he thought the plan would work well, but if the land was sloping, he would not advise it. He was in favor of fall plowing as a rule, but he was of the opinion that in the fall there would be a scarcity of manure, and then some of the land would not get any manure at all. He, therefore, advocated plowing it by degrees, just as he secured his manure.

Mr. Engle was of the opinion the plan of exposing the plowed surface, during the winter, would prove beneficial. The general sentiment throughout the country tended towards surface manuring. He did not, however, like to have manure exposed to the weather. It would be a good idea in the spring season. He was in favor of having his manure in good condition, then he would have a good cultivator and properly apply it.

Mr. Bollinger said the only objection he had to top dressing was in the fall that there would not be as much as in proper condition. He thought water would destroy the insects, especially the cut-worm, if we would plow in the fall.

Mr. Engle discussed a case where the cut worms were numerous in a tobacco patch which had been plowed in the fall, but Mr. Engle thought this case was an exception.

Mr. Linville plowed in the spring, because he then could have his manure in proper condition. He was one of the subscribers to the society and stated he was exposed to the elements, would become very poor. It may kill the cut-worm, but he thought it did not pay in the coal.

Mr. Engle stated that J. B. Garber contributed several specimens of the K. & C. native pepper, and he said he had the committee appointed to examine the fruit.

The motion was carried, and Messrs. Engle Cooper and Eby were appointed.

The following questions were referred: What age should stock cattle be put up for feeders? E. H. L. Allen, Mr. L. D. Davis, Dr. Dillihaller, Mr. Engle, W. A. Schonberger, city; S. P. Eaby, Esq., city; F. R. Dillihaller, city; C. A. Gast, city; Edward Brackbill, Strasburg; Peter Bruner, Mount Joy.

The minutes of the previous meeting were read and approved.

Philip Bogresser, city, was elected a member of the society.

The Secretary, Mr. L. L. Steight, stated that he had written to Mr. J. W. Richbell, of Buffalo, and Charles Beeler, of Baltimore, to ask as judges, the former on poultry and the latter on pigeons, at the coming exhibition of the society. These men are said to be among the best judges in the country.

It is the intention of the managers of the show to keep the men selected to judge the poultry exhibit at the show during the entire time, one person, it was thought, being as satisfactory as two.

The question of a suitable room for the exhibition was then brought up, and the Executive Committee was instructed to secure, if possible, Excelsior Hall.

The present season was reported to have been a profitable one for poultrymen, as egges and chickens have been unusually high.

The Secretary said he had received up to the present time nearly $50 for advertising space in the catalogue, and he had no doubt a good deal more would be paid for advertisements than would be necessary to pay for the printing and mailing of the catalogue.

After an informal talk on the subject of "gapes" in chickens and the various remedies for the same, the society adjourned.

LINNÉAN SOCIETY.

The regular monthly meeting of the Linnean Society was held in Dr. Knight’s office on Thursday evening, October 25, at 27th P.M. The following members were present: Dr. D. D. L. Davis, Dr. Knight, Prof. Mathison, J. W. Sener, W. E. Gill, Mrs. Zell and Miss Lefever, Dr. J. K. Dubs, the Vice President occupied the chair in the absence of the President. Dr. S. T. Davis donated to the Linnean Society a large collection of specimens of grass and earthy plants taken by him in Dakota, while on a visit there recently. Dr. H. R. Knight donated a specimen of the hermit crab, occupying his own formation, which was procured on Long Island. The Patent Office Gazette, Nos. 14, 15 and 16, and yearly index of the same was denoted to the library. Prof. R. K. Burchel was unanimously elected a member of the society. After passing an hour in scientific gossip of an interesting character the society adjourned to meet on Saturday, November 28th, at 9 o’clock, P.M., in the museum room.

FULTON FARMERS’ CLUB.

The Fulton Farmers’ Club met statisely on the 4th inst., at the residence of C. C. Caffman, at Wakefield. There was a full attendance of members and their families, together with a large number of visitors.

Exhibits.

S. L. Gregg exhibited an apple to be named, and it was pronounced to be a Towquisko Winter Blush. Day Wood exhibited a Spanish chestnut. C. C. Caffman, who had recently been on a Western trip, exhibited some Oregen wheat from Iowa, a very promising sort, and a specimen of pappus cut from poplar wood. The wheat was the product of 1st, and was said to be better than the wheat of the present year; but here such wheat would be considered of extremely poor quality, and it speaks but poorly for Iowa as a wheat producing State.

Exhibit Birds of Pompomuse, Nottingham Brown, and an unknown variety of apples.

E. H. Flaine reported having received from John H. Lindsy ten copies of the report of the State Agricultural Society for distribution among the members of the club, but said he was unable to have them present.

Questions and Answers.

Montilbion Brown—How is the corn yielding the present season? Most of these present could only guess at the number of bushels per acre. One or two had made an estimate by the number of wagon loads, and the whole seemed to indicate an average of 50 to 60 bushels of corn per acre; the lowest being 40 and the highest 75 bushels per acre.

Day Wood—Does it pay to shell corn to grind for feed? Nearly all preferred to have it ground in the ear until toward spring, when the cobs get hard and then they shell it.

Montilbion Brown feeds his hogs without grinding as long as the cobs are soft and after that he shells it before grinding. He cuts the ears into small pieces before feeding them.

Joseph Brown—Does it pay to buy bray to mix with corn when raising hogs? The question of corn or feed as a hog’s feed should be bran; he had known it to increase the amount of butter when there was no perceptible increase in the amount of milk.

Lindley King also prefers bran. Montilbion Brown thinks that the principal benefit to be derived is the digester in the health of the animal. He had known serious results from confining animals to corn alone.

After dinner the men inspected the buildings, farm and stock, and after reassembling at the house all expressed themselves well pleased with what they had seen.

Montilbion Brown read from the Lancaster Farmer an article on “Gapes in Chickens.” This started quite a discussion on the cause of the gapes. Edwin Stubbs said that at three different places where he had lived he found that when the chickens were allowed to drink from the stream that carried the suds and water from the kitchen they were always affected with the gapes, and that when they were not allowed access to this stream, or when it was cleaned out every few days, the chickens were not affected. This disease, said the speaker, confirms his belief that if the cobs are in dry, warm places, and the vessels out of which the young chickens drink are kept scrupulously clean there will be no trouble with the gapes.

Right. Gilson dissented from this view of the matter, and said that he had lived in places where the chickens had gapes much worse than at some of his neighbors, where there was much more impure water standing about.

Montilbion Brown said the gapes were worse in some localities than others. He had several occa-
Agriculture.

The Use of the Roller.

The New England Farmer has a timely article on this subject. Indeed it is almost always a good talk about the good effect of rolling land. The roller will not make moisture, but it will tend to retain some of it that is already in the soil, and its use may make the difference between a crop and no crop on land that is to be seeded down during a dry period. In a soil made compact by too much water or heavy snow, it may be necessary to give the surface to germinate the seeds and give them a healthy start, while in an ever-mellow soil they would lie dormant or merely sprout and then dry up and die. The iron roller is far better than a wooden one in every respect. It turns easily, being made in short sections, it is heavy according to its size, and bears harder on the soil it covers. The weight of a large wooden roller is distributed over too much surface at once. The roller is often useful in the spring for compacting the surface of newly-seeded meadow or grass field; and if the rains are heavy, the fruits of winter have loosened up or torn to pieces. If cloverseeds be sown on such land the roller becomes almost indispensable, and some farmers practice covering their grass seed with a roller in place of a harrow, but his pears and roots will be where the soil is sufficiently moist. Another good use of the iron roller is upon mowing lands recently top-dressed with stable manure. The weight is needed to press the manure down close to the surface, where it will keep moist, and all the scrouge helps the root to be sure that the grass will hold the surface smooth for the sedge or mowing machine. It is also used by gardeners to break up humusy soil, and with alternate harrowings to render it fit for receiving the seeds of tender garden vegetables.

Progressive Farmers.

The true farmer does not step to count the cost of improvement, for his reason prompts him to believe that he cannot go wrong by endeavoring to improve. Every acre of his farm is cultivated to its highest capacity, and his soil never deteriorates in quality. He rotates his crops with a view to increased fertility, and he estimates his profits by the amount of expense entailed in securing that profit. The failure to realize immediate results does not discourage him, for he knows that, through his judicious system of cultivation, the realization is but deferred for a little while longer. He farms for profit and he spends for profit. He knows nothing of stinted economics. He advances his prospects by advancing his resources, and he has more skill and judgment in his enunciation than any man. He is busy in his farm, his workshop and his shop, and he is not given to be seen being left unattended, and no part of his farm is neglected. A good farm means good stock. The squealing hog has no place on it, but must be superseded by the quiet thoroughbred. The tangle-footed, small carcass swine cannot be allowed where only the Merino, the Cotswold and the Oxford Down are adapted. The scrappy boron of the past are seen no more, for the deep milkling Holstein, the cream-giving Jersey and the beef-producing Hereford have occupied their places. The thoroughbred and the Clydesdale plow the fields that formerly yielded to the wind broken plows, and the wagons and simple implements of the forefathers are supplanted by modern machinery.

All this means capital and is expensive: but when we consider the fact that it costs no more to keep the best than the bad, and that expense means profit in the end, the cost is not so formidable as it seems.

But to-manure heap is the most important of all.

A good farmer can be selected by the manner in which he keeps his manure. The manure is the wealth—the bank on which the check is drawn—and it is impudent to neglect it. Drenching rains and showy sun carry upward and downward the soluble and insoluble constituents of the unprotested heap, and often great ditches are dug to allow the black liquid riches to pass off and away forever. But the good farmer works differently. He makes his manure fine, attends personally to the process of decomposition, protects it from the weather and eddies to make it a real food for the crops when baled to the fields. Farming pays well to—good farmers.

Effect of Draining.

First. It removes the surplus water and prevents flooding in the ground; if the ditches are cleared and if the drains are used, they should be of sufficient size to remove the surplus water in twenty-four hours.

Second. It prevents the accumulation of poisons in the soil which result from stagnant water, either above or under the surface. Third. The ammonia is kept out of the soil and the diseases which are dry stored for the plant food instead of stopping on the surface and passing off by evaporation, or borne away with the surface waste. Fourth. It deepens and enlivens the soil by opening the ground, allowing the roots of the plant to go deeper into the earth; depositing after harvest, they form this subsoil into the surface soil, providing resources for the plant more reliable, and making the same ground better for cultivation for a greater length of time. Fifth. It avoids drought, by enabling the plant to thrust its roots down into the soil where they can find moisture at all times. Sixth. It effects a saving of manure and thus helps to the general prosperity of the country. Seventh. It increases the temperature of the soil. In some cases the average has been increased as much as ten degrees. Seventh. By securing the uniformity of condition for plant growth, it hastens the maturing of the crop from ten days to two weeks. Eighth. It prevents the frost from lifting the leaves or Boremans, and in some cases, insures a return for the labor bestowed.

With our land thoroughly drained we can carry on the operation of farming with as great success and as little effect from bad weather as any business which depends on such a variety of circumstances. We shall have no longer the friends of the dry season, as far as it is in our power to do so, and make farming an art rather than a venture.—Protease Farmer.

Fall Plowing.

Any one who has seen the best European farming knows how important it is to properly prepare the soil for the seed. The working of the soil adds nothing, but it helps in changing the form of the plant food compounds, and thus plowing and harrowing becomes indirectly a source of nourishment. The clothing or covering of the soil protects the plant food, which it holds by virtue of its humility. Besides, it aids, by the action of the air over the plant. The chemistry of the soil, as it becomes better understood, teaches in every line the importance of a frequent stirring of the surface of the cropped field. With this in mind it is to the purpose to urge the importance of fall plowing. For other than chemical reasons the stubble or sod may be turned under this fall. Not only will the air circulate more freely, and the processes of reducing the insoluble substance go on more rapidly, but the mechanical texture of the heavy soil especially will be improved. Should insects or their larvae, or "worms" abound in the earth they will be turned out of their winter quarters and destroyed. Aside from these advantages, there is a great value in the work at this season, and any plowing or other labor with the soil will help materially to lessen the rust and hurry that otherwise comes with the busy months of spring. The thoughtful and successful farmer recognizes his farming operation that one season helps the next in more ways than one.—American Agriculturist.

Horticulture.

Pear Raising.

It has often been said by those in a position to know, that more money can be made from ground planted to choice fruit trees than out of any other crop, and after seeing what Mr. William Weille, of No. 512 East Orange street, has cropped from his comparatively small lot, we are ready to believe it. His small fruits, such as plums, grapes and roselle, are excellent, and every year he adds to his cellar and show what his product has been in that line. He has no fewer than thirty-six varieties of this fruit, beginning with the earliest, the Giffard and Bloodgood, and closing with the Giant Moreau or La Vella, which come into season any time from December until March. In between these months and late kinds come the Bartlett, Seckel, Beurre Bosc, Baffian, Louise Bon de Jersey, Flemish Beauty, Lawrence, Sheldon, Beurre Dieu, Viere of Winkfield, Umbilicae and many others, all of the most approved varieties. Mr. Weille put into his cellar about six hundred bushels of these luscious pears. He has several plans of keeping them. Some are put on trays and these are fixed on stands specially constructed for this purpose. Others are wrapped in paper and put into boxes, while others have been cobbled together in the most shapeless manner and packed under the freight. It is not to see these pears all strong on the joints, in the trays and in the numerous boxes, and we were not long in reaching the conclusion that next to being a newspaper reporter, the most delightful occupation in the world was growing pears and eating them.

The Effect of Dry Weather on Apples.

The effect which a protracted drought has on the fruit of an apple orchard depends on location, condition and the treatment of the trees. If the orchard be on high land, and is kept in grass cut at the right height, the trees will do well and bear fruit. Good trees and the fruit. The first indication of injury will be the turning of the leaves to a lighter color, followed by the shedding of a considerable portion of them; the fruit stops growing, or grows very slowly, and finally a considerable portion drops off. But if the wave weather it opens much faster than in cold. There is a market for all he has. Not only do hotels and grocers buy them, but private individuals take more or less every day. The price varies with the kind and quality: fine fruit now sells from sixty to eighty cents a bushel, and the regular market is to see all these pears strong along the joints, in the trays and in the numerous boxes, and we were not long in reaching the conclusion that next to being a newspaper reporter, the most delightful occupation in the world was growing pears and eating them.

The Lancaster Farmer.

[November,
which to set an orchard, but also to keep the trees to that high state of cultivation that will ensure good fruit when the weather is unfavorable, thus enabling the grower to go into the market with an abundance of good fruit when it will bring good prices. The successful grower of fruit and vegetables has usually learned to succeed where the ordinary cultivator fails. In a good season almost any one can grow fair crops, but in a year like this, it is only those who work intelligently that are able to overcome the unfavorable conditions of the natural elements.

When the farmer becomes thoroughly acquainted with the best methods of protecting crops from the dry weather, we shall fear droughts much less than we now do, and our losses will be very small in comparison to what they are now.

Saving Cabbages Till Spring.

We know no better way to preserve cabbages through the winter than that which we have recommended for a number of years. It is to plant or set them up in rows as they grow—that is, with the roots down—a foot or so in depth. The seed is sown in rows 20 inches apart, and these rows are not so much to look out for a pitch to carry off the water; lay bean-poles opposite the way of the pitch, and cover with corn- fodder, or straw, or boards. In using through the winter, avoid as much as possible the sun-side and close up again. We have not found that setting the cabbages on the ground in its wild state is in any way, of advantage, as we have kept ours for more than twenty years in the way we mention in a sound, perfect condition, through the winter into the spring, and could even up to the first of May if desirable. We flax and linseed, etc., and they may answer just as well, but as to our own specks from a long experience.—[Germantown Telegraph.]

The Fruit Supply.

In all of the principal markets of the Northern States there has been an under supply of home-grown fruit this season. Last year it was better, but for three or four years it has been evident that the demand was increasing faster than the supply. With a flourishing state of horticulture throughout the country, why is it there should be so steady an advance in the price of these products? In the first place, the population in cities and large villages has been rapidly increasing, and the increased consumption of fruit. Then the principles of diet and hygiene that have for many years been disseminated among the people through the press have been accepted as true, and practically applied, until every one considers as a necessity a certain minimum of good food. Again, we find that fruit, especially the sweet fruits, are the last of the products to be used up, and the preservation of fruit, which has been so much in evidence of late, has increased the demand for fruit. The increased demand has increased the price of fruit.

Even if this increased demand could have been properly anticipated considerable time must elapse before it could be met by fruits like the apple and the pear. The cherry, the plum and peach, that give returns quicker, would respond more alertly, but these fruits can be raised to advance prices. They are the last of the fruit to be used up, and the preservation of fruit, which has been so much in evidence of late, has increased the demand for fruit. The increased demand has increased the price of fruit.

Graham Bread.—Make a stiff batter of half a pint of warm water thickened with gramin, flour and add to it a third of a cupful of yeast. Let it rise overnight. In the morning, or before breakfast, add a little piece of butter, half a cupful of sugar, and wheat flour enough to mould. Let the bread rise in pans, and bake an hour.

Indian Cake. One pint of Indian meal, a cupful of flour, half a cupful of sugar, a teaspoonful of salt, one of cream of tartar, an egg, and some salt. Mix in equal portions of milk to make a soft batter.

Chuleurs.—These doughnuts are easily and quickly made. A piece of butter about the size of an egg, a dessertspoonful of flour, a teaspoonful of sugar, two eggs are to be made stiff with flour, cut in fancy shapes, and fried in boiling lard.

Doughnuts.—One and a half cupfuls of milk, the same quantity of sugar, two eggs, a scant teaspoonful of salt, a teaspoonful of salt, and half a nutmeg. Very tasty doughnuts are made by this rule.

RUNS.—Half a cupful [each] of yeast, sugar and butter, one and a half cupfuls of flour, half a cupful of sugar, and some salt. Mix together at night, and in the morning add half a cupful of sugar, and some currants.

ROAST MUTTON.—Wipe the mutton with a damp cloth; then dride with salt, a little pepper, and generously with flour. Place on a meat rack in the baking pan before dredging, see that the bottom of the pan is not too hot. Place in a moderate oven, and as soon as the flour in the pan is brown (which will be in about five minutes), pour in hot water enough to cover the bottom of the pan. Bake every fifteen minutes. Cook a leg weighing six pounds, one hour and a quarter, and give ten minutes more for each pound. If it is to be well done, roast one hour and a half, with fifteen minutes for every pound over six. When the meat is done, pour all the fat from the gravy and add a cupful of boiling water to what remains in the pan. Thin this with a smooth paste, made of a tablespoonful of flour and a little cold water. Stir well, and boil two or three minutes. Season with salt and pepper. Strain and serve. All the dishes must be very warm for a luncheon dinner.

Mashed Potatoes.—Parboil and boil for thirty minutes. Mash light and fine with a wooden masher. To every twelve potatoes add one teaspoonful of butter, half a cupful of boiling milk, and salt to taste.

Almond Pudding. Parboil and cut into slices. If the Almonds are not to be used until the next morning, you will cook in forty minutes, but if they be the yellow kind they must boil for two hours in plenty of water. Mash and season with butter, salt, and pepper.

Baked Potatoes.—Wash, nip good sized potatoes and bake in a moderate oven forty-five minutes. They are spoiled by being over-cooked.

Pudding.—Parboil and chop one six large apples. Put in a pudding-dish layered with grated bread crumbs, one inch deep, then a layer of apple. On this put bits of butter, sugar, and a slight gratel of nutmeg. Continue as before, and finally pour on a teaspoonful of cold water. Bake half an hour. Use in all two tablespoonsful of butter and a small cupful of sugar.

Spanish Cream.—One quart of milk, three eggs, one cupful of sugar, one-third of a box of gelatine, one generous teaspoonful of vanilla flavor. Put the gelatine in a bowl with half a cupful of cold water, and when it has stood an hour add it to a pint and a half of cold milk or cream, mix it well, and put in which it is to be cooked (it should hold two quarts), into another of boiling water. Beat the yolks of the eggs with the sugar and one fourth of a teaspoonful of salt. Beat the whites to a stiff froth. Add the half pint of cold milk reserved from the quart to the yolks. Let both come to the boil. Cook five minutes, stirring all the time; then add the whites and remove from the fire. Add the vanilla, and pour into moulds. Place on ice to harden.

Boiled Flank of Beef.—Wash the flank, and make a deep incision in it, as shown in the diagram, first having salted and peppered it well; then roll up and tie. Wind the twine around it several times, to keep it in place; then new into a cloth kept for that purpose. Put a small plate in the pot, and put in the meat; then pour on boiling water enough to cover and boil gently six hours. When done, remove the cloth, but not the twine until stone cold; then cut in thin slices, and you will have alternate layers of meat and dressing. This is a nice dish for breakfast or tea.

Meat Hash.—Dredge with salt and pepper any kind of cold meat, and chop it fine. This is always the best of all dishes, and will be seasoned alike. If you have cold potatoes, chop fine and mix with the meat; if you are hot, mash. Allow one pint of meat to two potato of two. Put this mixture in the frying pan with a little water or soup stock to moisten it, and stir in a spoonful of butter; or if you have nice beef dripping, use that instead of butter. Heat slowly, stirring often, and when warmed through, cover and let it stand on a moderately hot part of the stove or range twenty minutes. When ready to serve, boil as you would an omelet.

Teal Loaf.—Three pounds of teal or fresh beef, half a cupful of flour, the choicest fine, two beaten eggs, one teaspoonful of cracker crumbs, three teaspoonfuls of salt, two teaspoonfuls of pepper. Mix and press hard into a tin. Bake one and a half hours.

Tomato Sauce.—One pint of stewed tomato, one tablespoonful of butter, one of flour, four cloves, a tablespoonful of vinegar. Cook the tomato, clove and onion together ten minutes. Heat the butter in a small pan and stir the flour into it. Cook, stirring all the time, until smooth and a light brown; then stir into the tomato. Cook two or three minutes longer. Season with salt and pepper, and strain.

Steamed Beef Steak Pudding.—One quart of flour, one large teaspoonful of hard, two teaspoonfuls of cream of tartar, one cupful of soda, two cupfuls of milk or water, a little salt, one and a half pound of beef steak. Roll out the crust and line a deep earthen dish; then lay in part of the
steak, with a few pieces of butter, a little salt, and a few whole cloves; then lay on the rest of the steak, with seasoning as before. Turn the crust up over the whole. Steam two hours.

Stewed Lobster.—Open a lobster weighing two and a half pounds and cut the meat into little dice. Heat the fish sauce of onions, and add the dry flour, stirring until perfectly smooth; then gradually add the water, stirring all the while. Season to taste. Add the lobster, and heat thoroughly.

Boiled Rice.—Wash in two waters one cupful of rice. Put it in half a quart of boiling water and let it simmer fifteen minutes; then drain dry. Wring a pad of soft kitchen toweling into a boiling water bath and add the fish sauce to the rice and turn the rice into it. Sprinkle in one cupful of raisins, and a tablespoonful of salt; let the cloth loosely, that the rice may have room to swell, and boil two hours. Serve with lemon sauce or sugar sauce. Or, apples may be used in place of the raisins.

Oxtail Soup.—Oxtail of two cups of milk, one and a half of rice, one and a half of flour. Boil the soup forty minutes.

Lemon Gruel Cakes.—Two cups of flour, a handful of Indian meal, two eggs, a teaspoonful of salt, one of soda, one quart of milk.

Cottage Pudding.—One cupful of sugar, two of flour, one of milk, one egg, butter the size of an egg, one cupful of soda, two of cream of tartar. Beat the sugar and butter together; then add the egg, well beaten, then the milk, and finally the flour, in which the soda and cream of tartar have been well mixed. Bake in a pudding dish for half an hour in a moderately hot oven. Let it be eaten with sauce. The lemon sauce is good with it.

Griddle and Indian Cakes.—For the griddle cakes use two coffee cupsful of sour milk or buttermilk, one teaspoonful of salt dissolved in a little hot water, and flour enough to pour. Grease the griddle with a piece of fat salt pork, and fry the cakes. A light brown. Indian cakes are made in much the same way, save that half flour and half Indian meal is used, and also a teaspoonful of salt. They require a somewhat longer time to fry.

Escaloped Mutton.—Chop some cold mutton rather coarse and season with salt and pepper. For one pound of mutton use one cupful of gravy and a heaping cupful of grated Indian meal. Put a layer of the meat into an escallop dish, then some gravy, then a thin layer of crumbs. Continue in this way until the dish is full. The last layer must be a thick one of crumbs. Cook fifteen minutes in a hot oven.

Mock Oyster Soup.—Peel twelve good sized tomatoes, and boil in a little water until quite soft. Let two quarts of milk come to a boil, and thicken with two large crackers that have been rolled fine. Add one teaspoonful of soda to the tomatoes. When they are well broken up mix with salt, pepper, and three tablespoonfuls of butter. Add a layer of the meat into an escallop dish, then some gravy, then a thin layer of crumbs. Continue in this way until the dish is full. The last layer must be a thick one of crumbs. Cook fifteen minutes in a hot oven.

Excellent Gold Cake.—A cupful of sugar, half as much butter, half a cupful of milk, one and a half cupful of flour, the yolks of three eggs and one white. Beat the yolks with the sugar and cream of tartar, half a teaspoonful of lemon flavor. Mix together the sugar and butter, and add the eggs, milk, lemon extract and flour, in this order. Bake for half an hour in a moderate oven.

Lemon Cake.—The rind and juice of a lemon, a teaspoonful of cream of tartar, half as much saltersatus, a teaspoonful of butter, one of sweet milk, three of sugar, four and a half of flour, and five eggs—the yolks and whites beaten separately. Bake in two layers for forty-five minutes in a rather quick oven.

Fried Chicken.—Cut the chicken into six or eight pieces, and season well with salt and pepper. Dip into beaten egg, and then into fine bread crumbs, into which there is a teaspoonful of chopped parsley for every cupful of crumbs. Dip once more in the egg and crumbs, and fry ten minutes in boiling fat.

Plain Fruit Cake.—Half a cupful each of milk and butter, and one a half cupfuls of sugar, two, and a half cupfuls of flour, two eggs, half a teaspoonful of soda, spices and fruit.

Boiled Rice Pudding.—Pick and wash one cupful of rice and pour in one quart of boiling water, and let it boil for fifteen minutes; then drain dry. Wring a pad of soft kitchen toweling into a boiling water bath and add the fish sauce to the rice and turn the rice into it. Sprinkle in one cupful of raisins, and a tablespoonful of salt; let the cloth loosely, that the rice may have room to swell, and boil two hours. Serve with lemon sauce or sugar sauce. Or, apples may be used in place of the raisins.

Okra Soup Equal to Turkey Soup.—One leg of beef, quarter of a package of okra, two carrots, eight tomatoes, two onions, cut fine, nine quarts of water. Boil six and a half hours. Cut the meat off the bone in small pieces. Take the most nutritious part of the meat, and put it in a bowl of flour and milk, and boil the soup when it is made. Cook the okra in small pieces. Boil steadily but not hard.

Steamed Brown Bread.—Two cupfuls of new milk, two of Indian meal, one a half of flour, one of molasses, one teaspoonful of soda. Steam about an hour.

Esmerald Pies.—Do not cut the rhubarb until the morning it is to be used; or, if you have to do it, keep it in a cool place. Strip off the skin and cut the stalk into pieces about an inch long, and stew in water just enough to prevent burning. When cold, sweeten to taste. Cover the pie-plates and roll the upper crust about half thick; cut into strips, an inch wide, and, after filling the pie with the rhubarb, put on four cross pieces and the rim. Bake half an hour.

Live Stock.

Cattle-Raising in Montana.

To assert that Montana is the best grazing country in the world, writes a correspondent of the St. Paul Pioneer Press, is merely to report the deliberate verdict of hundreds of practical stockraisers who of late have visited the wheat lands and the sub-tropical districts. For months past these men have been fully occupied with the subject of cautious investigation. For some time to come the eastern half of the Territory is likely to stand foremost among the beef and wool producing sections of America. It is now known that Montana cattle make better beef than the average stock of other beef-producing Territories, and that the Montana cattle are admirably adapted to the sub-tropical districts. The product of Montana is very high in quality and very cheap in price.
there is a cow with two lambs and yielding milk from six teats. So far the experiments have not succeeded in obtaining an animal producing much milk and a great deal of milk. The milk is thin and weak, a cow, a produce about not 48 frames yearly. Six quarts of milk yield one pound of cheese. The Chilianis, to obtain special skins much sought after, cross the sheep with the goat. Experiments are being conducted to the end of a similar breed with wool, a breed of which the wool is of great value. An experiment has been at work for four years, and to eat no more of the big, strong sort. The Western producers are finding the best market for the small breeds, the spring pigs of which are fit for slaughter before Christmas, when dressed, 250 pounds on an average, and can be sold at 2s. 6d. per pound weight.

The early maturity of the small breeds gives them a great advantage over the larger kinds. We have known Suffolk pigs to weigh 300 pounds at seven months. To secure this result they must be fed well, well bedded, and watered, mixing it with a little bran and oat meal, and gradually increasing the ration of oats till the pigs have attained such a size that it will answer to put on fat, when corn meal may be substituted gradually for the bran and oats.

There is nothing equal to milk for young pigs, for inducing the growth of the small, solid and full, as good as the pure article.—New York Times.

The Coming Sheep

The philosophy of evolution and development appears to be supported by the history of our live stock. Those who have traced out the rise and progress have also to record the decay and the death of the old breeds. The Cotswold sheep, born to perfection under the skilful management of Bakewell, waned and vanished under the superior qualities of the Short-horn. It would indeed be touching upon delicate ground so hithat this pet of the great ones of the earth could be dispelled from her temple. All things, however, must come to an end, and exorbitant sums of money given by individuals for no special excellence except what exists, or is supposed to exist, potentially in the mysterious virtues of pedigree, savours of that luxury which precedes decay and dissolution.

The history of our chief breeds of sheep affords more than one instance of improvement and abandonment. Take, for example, the Leicester. Fifty years ago this breed might appropriately have been said to "rule the roost." Now, except in very few counties and among a small minority of farmers, the Leicester has been superseded. The Cotswold sheep is said to be going out, even upon his own hills, and does not seem to be speaking rapidly in any other locality. The Shorthorn was to the short-wooled races as the short-haired sheep to the long-haired. Scarcely a breed was so improved by his touch, and for this reason alone the short-horn will always hold a high position in the history of British flocks. Still, it must be confessed that the Shorthorn has ceased to be the same, one of the most valuable breeds in the country, and more profitable, if less shapely, breeds of sheep.

One of the greatest advances in sheep breeding was made by Mr. Druce, of Eyam, when he successfully crossed the Hampshire Down and Cotswold, and thereby produced the Oxford Down. The rise of this remarkable breed has been rapid, and it seems likely to extend further in its geographical distribution. An unfortunate predilection in foot preference limits the market for the sheep of this and other breeds of the midlands, and a slowing in coming to maturity may possibly also have retarded as a frequent mark against him.

The last breed we have to mention is one which deserves the respect of every farmer, the Hampshires. They have not been brought up by the great. They have, however, been long practised by numerous farmers, and have been the first class tenant-farmers around Salisbury, and tended by a good and faithful race of shepherds.

We venture to assert that the Hampshire sheep is not sufficiently known and appreciated. There is no race in England, or in the world, which can vie with it in the production of large sized lambs of from six to eight months old. Shropshire lambs are simply "nowhere" to them. Let any unprejudiced person attend the sales in July, near Salisbury, and if he has never before seen a Hampshire sheep, he will be surprised to see lambs which present you with a pound weight per quarter from the day they were born. No one thinks of using shearing rams, as they would be too heavy and unwieldy if not used as lambs. As yet the Hampshire breed has been insufficiently cultivated in this country, but we expect something to see a change in this particular. Such a breed cannot be comparatively kid from public notice, but must come out. His hardiness, size, and quality of mutton are unsurpassed. He thrives between hedges and never asks for greater liberty. He is extraordinarily doughty and intelligent, and can be brought into such perfect training that a word from the shepherd suffices to guide and control his movements.

In the district in which this splendid race of sheep are found in greatest perfection it is not uncommon to see lambs of from six to eight months old, and to sell lambs of from seven to eight months old. It is in those parts customary to sell off the wether lambs and retain the ewe lambs and ewes as winter stock. If instead of selling the lambs at the autumn fete they were kept on through the winter, there would be lambs and wether lambs and lambs, which bred in the same herd. But at the Shropshire show, what with ten or thirteen months old, they would make prices which we are confident in maintaining that no other race of sheep could touch. These are strong points in favor of the Hampshire sheep, insuring him a brilliant future, and, in a certain sense, the title of "king of the breeds," being the heart of these remarks.—Agricultural Gazette (English).

POULTRY.

Moulting

As this is the time of year for fowls to moult (cast off their feathers and put on new ones), there is no time for discussion. It matters not how well a bird looks when commencing to moult, or how well it feels, in two or three days there is so much change in its system and in its feelings and looks that one would not recognize it. It is really one of the most singular things that can come pale and wilt down to their usual size; their heads; that were carried so stately, are now dropped, and the bird walks as if it was weary; it appears weak, as it really is, and if ever an extra feed is given to fowls, it is now that they should be given. Moulting is not the only requisite, there is something else, but quality is the main object—something strong and in good proportion, such as a loaf of baked middlings (or rather a mixture of shorts, coremeal, or buckwheat), with plenty of boiled potatoes, and a certain seasoning of salt, red pepper, and ginger. When handling this sauce a few drops of tincture of iron, say half a teaspoonful for a two-pound leaf, which give to a flock of twenty fowls will be sufficient for one whole day, and whole corn (old, not new) wheat screenings, peas, bolted oats or boiled barley, may be given in such quantities as will be eaten up clean without wasting.

In England many poultry breeders confine their flowery language to the "fancier," impertinent aspuniq of ramifier to each fowl in its drinking water, which assists in casting off the feathers, and they are not allowed to get any other water to drink but this for a week.

As the process of moulting is the least understood, has the least care bestowed, and is the most neglected of anything belonging to the poultry yard, whether fancier or farmer. During September and October—the times when birds are at their most critical period of health—during the years—farmers' busy harvest time, thick barley, wheat and oatmeal, are so busy that the fowls generally have to rough it, and little or no attention is given them; they are permitted to roost in wet lofts, or exposed to draughts of wind and sometimes in apple trees. Now, this should never be so; they should be given not only the same care as other farm stock, but a little more just now, and when eggs are wanted in winter, and when good fat turkeys are wanted for that time, they will be forthcoming in plenty, or according as they have been supplied with the proper nourishment. Don't fear to use plenty of white mash, with a little carbonate acid, and perhaps a solution of potash.

Stamp them out. Clear the fowls of this pest. Destroy the young broods of insects, now just coming forth. Keep the parasites at bay. Fumigate the closed houses with a pot of burning sulphur and crude resin, shut the smoke in five or six hours. Then ventilate the premises thoroughly before roosting time. Wash the perches with kerosene—all over, underneath, edges and top. Destroy these anatine larvae. These bees have been longly treated, and have had the best attention, will start to lay the first after moulting, as a hen will never lay while in this stage of nature's development.—R. A. Brown, in Farmer's Advocate.

How to Be Rid of Them

In a question which is very apt to come if care is not constantly exercised. We mean the mites, jiggers or hen spiders, call them whatever name you please. They are the little kind that swarm everywhere, like the frogs of Egypt, under the most unwholesome condition, and if not kept in check, will spread over the whole yard, and the whole farm. We do not feel that we are speaking unnecessarily, and perhaps a word or two may be necessary, as we are confident that something will be done to prevent the spread of these little pests.

A Poultry House

"How, when and where shall we go to work to build us a poultry house?" is an old refrain to the poultry raiser. If a man has the proper degree of skill and knowledge, he is expected to be able to stand up and give a satisfactory reply under any and all conditions. A person about to build should, if possible, observe and investigate some fowl house already erected that gives its owner satisfaction, and by practical consul-
LITERARY AND PERSONAL.

Stock and Poultry Index. This is a neat 10 page octavo monthly, containing a comprehensive résumé of the best literature of stock and poultry, and filled with the choicest matter for every one interested in its specialties. It is not merely a magazine of advertisements, but contains 15 pages of good reading matter pertaining to stock and poultry. As its title indicates, it is mainly a "stock and poultry" index, and should be added. No. 3, vol. 1, of this spicy little Journal has found its way to our table, and although entirely unpretentious, and lacking the embellishments of more pretentious publications, we find it solid and sensible, and feel the omission with pleasure.

Address Stock and Poultry Index, Worthington, Greene county, Pa., L. E. Robinson, Publisher and Editor.

Thoroughbred Stock Journal. A demiloyo of 16 pages, only two of which are advertisements, published by the L. S. F. Co., Philadelphia, Pa. S. I. Hunt, proprietor; W. A. Webster and Joseph Barbier, editors; at $1.50 per annum; single copies 15 cents. Good material, good print, and good illustrations. This is an entirely new enterprise in Pennsylvania stock journalism, the copy before us being vol. 1, No. 1, October, 1902. The contents of this number are very limited, confined certainly to the thoroughbred horse, but it contains a few choice articles and opinions, and the illustrations are admirable. We have been in the habit of writing for many years to the effect that the thoroughbred horse is the basis of an individual's fortune and the success of his business. This view is now coming to be generally acknowledged, and we are thankful for the timely appearance of this journal, which will be welcomed by the breeding fraternity of the country.

United States Entomological Commission—Bulletin No. 1, "Insects injurious to Forest and Fruit Trees", by A. L. Packard, Jr., M. D. This bulletin bears the imprint 1881, but it has only come into our possession within the past two or three weeks—too late to notice it in our October issue. It is an octavo of 273 pages, uniform in size with most of the other bulletins, and is filled with appropriate illustrations. We are indebted to the Department of the Interior for a belated copy of the work for which we are exceedingly thankful. To protect our forest trees from insect infestations is hardly second in importance to protecting them from the incursions of man's axe. Of course, a work cannot fall into the hands of everyone who is interested in forest and shade trees, but it is safe to say that it will fall into the hands of as many as are likely to study it and make a practical use of its information. Nor is this work confined to forest trees; as "insects injurious to forest trees" indicates, the "insects" are "dealing with all insects destructive to forest and fruit trees."

A common paper used for food and paper, being "a description of each in detail would involve a book or books, too formidable for any ordinary man to look into; hence, in many instances only the technical name is given, and this too only because they have not been given a specific common name, and perhaps never will."

Ladies' Floral Cabinet, a Monthly Home Companion. L. F. C. Publishing Co., 22 Vesey street, New York. A beautifully illustrated quarto of 30 pages, with embellished tinted covers. The October number (Vol. XI., No. 3) is a "Horticultural and Garden" number, and one of the best and most substantial of the monthlies we receive. In addition to the first-class material and superior mechanical execution, it contains that variety in its literary content which relieves it from the monotony that distinguishes many journals devoted to a single specialty. Any lady at all interested in horticulture, poetry, gardening, horticulture, domestic economy, and general literature, would find this journal an appropriate ready means.

Annual wholesale and retail list of the Ephrata Nursery and Green House. Fruit and ornamental trees, grape vines, small fruits, etc. S. R. Hess and Son, proprietors, 8 pp, 12 mo.


Premium List of the New Mexico Exposition and driving Park Association. Second annual fair at Albuquerque, October 19, 20, 21, 22 and 23, 1882. 48 pages, demioctavo. This catalogue reached us too late to receive a notice either in our September or October issues. It is a very liberal one, and as far as we have been enabled to judge, contains 400 different entries.

Personal—Notably among the practitioners of departments, we observe the name of Dr. Wm. T. Strachan, a native of Lancaster county, and formerly a resident of Lancaster city. The doctor is a resident of New Albuquerque, is extensively engaged in mining, and it was appropriate that he should have been appointed superintendent of the mining department.

Farmer and Manufacturer. A journal devoted to the farming and manufacturing interests of the country, published by the Farmer and Manufacturer company, Columbus, Ohio, at 50 cents a year in advance, postage included. The November number of this excellent publication has reached our table, and it ought to be welcome anywhere in the world, where the English language is spoken, and, "you had better believe it." Among the multitudes of railway publications which are now reaching the public, the prizing press of the country, we are a little puzzled as to whether we should style this a "royal quarto" or a demifolio—it is 10 by 20—with four columns to the page. In addition to farming, manufacturing, domestic and polite literature, it includes his- torical and literary articles, private letters, etc., and is one of the most practical and instructive character, possessing just that brevity, diversity, and moral quality, which go to make up the most interesting and useful daily reading. If any of our patrons desire to try it, "just to see," we will forward a copy of the Farmer and Manufacturer, at $1.25 a year, in advance, and have no hesitation in assuring our readers that the arrangement will be satisfactory to them. The material and "make-up" is equal to the average of our very best journal publications.

Seed-Time and Harvest, which has for the past three years been published as a quarterly, has now entered the field as a 24-paged monthly magazine, and is filled to overflowing with notes and illustrations of the most popular new fruits, flowers and vegetables of American origin. It has among its contributors the most prominent horticulturists. In this number the horticultural subjects. Every page is made interesting and instructive. It is published at La Plume, Lacka Co., Pa., by Isaac F. Tillington, at the low price of 25 cents per year.

Mr. A. G. Tillington, a brother of its editor, recently started on a trip across the continent to California and thence up the coast to Washington territory. One of the attractions of Seed-Time and Harvest for the next few months will be the publication of the winter number, which will be a review of the events of this journey, which will prove very interesting to every one who is interested in the subject of horticulture. We wish Mr. Tillington well on his journey, and, should he, as is probable, be fortunate enough to be treated, how fast he travels, what he sees and what it costs him to see it.

Among agriculturists and horticulturalists the paper is taken and read by the editor of Seed-Time and Harvest, and he will endeavor to supply the most interesting and new facts for all the readers of the paper, as well as for the agriculturists and horticulturists.

A noticeable feature of Seed-Time and Harvest is the list of new books and magazines which come to the editor, who sends him the most perfect list of the different words to be found in one number of the magazine, which includes all the lists of books and magazines that come to him. This exercise will be repeated in the January number and competition is free to all subscribers. The latest and most practical monthly and the Lancaster Farmer, will be furnished to subscribers at $1.25 a year.
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Yours truly,

SAMUEL S. OCLKITT.

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All communications in regard to the editorial management should be addressed to Dr. S. S. Rathvon, Lancaster, Pa., and all business letters in regard to subscriptions and advertising should be addressed to the publisher. Notice of advertising can be had on application at the office.

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VOLUME FOURTEEN

Of the Lancaster Farmer is completed
by the issue of this number. We have en-
dured longer than any of the French
Governments since the Revolution of '93, although we
may not have made as great a noise in the
world as the worst among them. We believe,
too, that our mission has been and will be of
as permanent benefit to mankind as the mis-
ion of any of the heads of the governments
foresaid, or, perhaps any other merely nomi-
nal government. We believe this, because
our lot has been cast in the peaceful walks of
life, and we have not come to destroy, but
to the end that men may enjoy physical life,
and enjoy it more abundantly: for we know
that men cannot be spiritually comfortable so
long as they are not physically so. Want,
stera want, whether natural or moral, is
the parent of many misdemeanors and
criimes; and we have for forty years been
Gathering and distributing such items of
information as are calculated, if appropriated,
to elevate men above the plane of want and
crime.

We have no special promises to make here
for the future, nor any reprobates to offer
for the past. We can give no other guarantee
of what we may be than that which we have been:
but at the same time, whilst manifesting
our thanks to our old patrons, we would
admonish them to reflect whether each one of
them ought not feel it his duty to add at least
one additional subscriber to the list of the
Farmer.

In conclusion, when this mists your eye,
you will doubtless be absorbed in thoughts
pertaining to the approaching Christmas hol-
days. Hence, we would admonish all to ra-
tionally enjoy themselves, but not to forget
worthy objects apart from themselves; for
there are situations and circumstances under
which what you freely gie is really the only
thing you truly have and never lose. In this
spirit we commend our patronis to the festal
customs of the season.

MYRIAPODA.

The specimens of "centipedes" before us
suggest some remarks upon the different
orders belonging to the class Myriapoda,
and the very marked distinction in their
appearance, their economies, and their charac-
ters.

The term, Myriapoda, is a compound of
two Greek words, namely, many, and ten thou-
sand; and pedes, foot. Of course, no subject
of this class has ten thousand feet, although
there are some species that have one or more
hundreds. Formerly they were classed with
insects, but have now been erected into a dis-
tinct class, divided consecutively into three
orders. The common names of "centipedes"
and "millipedes" have been rather indiscir-
minately applied to them; but for the sake of
simplyfying their study, I would suggest
that these names be applied to the two most
prominent orders that distinguish the class.
These animals differ from insects, in that
they are excluded from the egg with two,
three, or four pairs of feet, or come forth
without any feet at all; and, as they are de-
veloped by age, the number of segmental
rings and feet increases, sometimes running
beyond hundreds. Indeed, it requires two
years, according to authors, to complete their
development, so far as to enable them to con-
tinue their species.

The 1st order, Chilopoda, which is from
two Greek words meaning by and food, because
the anterior pair of feet approximate to egg,
and perform the functions of those organs,
consists of four families, namely, Ceramididae,
Echidnidae, Scolopendridae, and Gymnidiidae.
The subject before us is Scolopendria heros,
and may be regarded as the type of that
family. The term "millipede," I think, should
be restricted to this order, not because
the individuals belonging to it possess one
hundred feet, any more than millipedes pos-
sess a thousand feet, or one of our city
squares contains one hundred houses. But
the distinction in their habits, their forms,
and in their organs of locomotion are so
great that, in common parlance as well as in
scientific nomenclature, there is room for a
different appellation.

In this order—namely, centipede—the head
and the body are depressed or flattened, and
there is but one pair of feet attached to each
segment. The l7estum are long and in
some instances twenty or thirty jointed;
the feet are five jointed, terminating in a
sharp bent spine, and their cursorial powers
are extraordinary, if they choose to exercise
them, which they generally do when exposed
to the light, and the temperature is warm.
When interrupted, they instinctively hide
themselves, seemingly annoyed by light, and
preferring darkness.

They are carnivorous in their gastro-
nomical habits, and I have on several occa-
sions observed them with wood-boring larva
in their possession, which they refused to re-
linquish, even when captured themselves.
There is a specimen in our collection (or was
in it), which refused to release his captive
when immersed in alcohol, and in its death
only grasped its prey the closer. I do not
know that they make burrows for themselves
in decayed wood, but I know that they are
frequently found in the burrows of wood-
boring insects of the smaller species, espe-
cially those that make excavations imme-
diately under the bark. The larva of small
Platycle and of Breatha has been seen in their
jaws. The one that I "bottled" had a
small specimen of the larva of Passalus cor-
natus in his jaws. These animals, therefore,
may be classed among the beneficial kinds,
especially in relation to forest trees, and the
destructive insects that bore into them.

But lest too much credit may attach to
them on account of their antagonism to the
insect world, I must here state that I am
experimentally cognizant of another fact in
regard to them, and that is, that they are really
poisonous. They may not be poisonous to all
persons and under all circumstances, but
in one occasion they were very poisonous to me.
In one of my excursions with our late Secret-
ary, Mr. Schaffter, to Manheim township, I
caught a specimen of Scolopendra about two
and a half inches in length, which im-
mediately inflicted a wound on the middle
finger of my left hand, from which I had some
difficulty in releasing it without decapitation.

When it withdrew its innamables two small
drops of blood followed. The pain at first
was pungent, but I sucked the wound and en-
dered to forget it, but "it would not down." I had nothing to apply but alcohol.

This only gave a momentary relief. The
pain continued as if on the wrist, where then to the elbow, and thence nearly to the shoulder, and
continued half a day.

Crossing a small rivulet, I alighted and
applied a clay poultice, which affibred relief.

After the first twenty minutes the pain
was no longer acute, but a continuous, dull, aching sensation, seemingly affecting the muscles
and the nerves. After I reached home I
applied ammonia, and in half an hour I felt
little pain, but the hand was somewhat be-
numbed, and the following morning this feel-
ing was also removed, but a hard tubercle re-
mained for a fortnight. I have often reflected
that if a small, scarcely more than two-inch
centipede can inflict so much pain, what
might be expected from one that measures
ten or fifteen inches, under similar circum-
stances.

The second order includes the Diplopoda,
and means twofold in allusion to the double
pair of feet on each of the segmental divisions
of the body, and these animals may be em-
baced under the common name of "Milli-
peces," some species of which have over two
hundred feet, although none that have a
thousand. This order includes the single
family Julidae, composed of the genera Spar-
obolus and Prochilus. Sparabolus morifilius oc-
curs in Lancaster county, and is our largest
species, measuring from two to three inches in
length. I, on several occasions, detected this
species feeding on a fungus belonging to the
genus Myriaster, and from the fact that smaller
species feed upon turnips, radishes, cabbages,
strawberries, potatoes, and other vegetables
and fruits, we may infer that they all prey
upon vegetation. The bodies of these are
tubular or cylindrical, the antenna short and
bargy, the feet short, and two pairs attached
to each segment immediately in the centre of
the body beneath. Their locomotion is very
slow, and when disturbed they make no at-
tempt to escape, but merely coil up spirally
and turn over on their sides.

Their pedal members, their locomotion, their
gastronomical habits, and the conformations
of their bodies, are entirely distinct from the
other, although they and the centipedes form one class, and are similar in organic structure and development. Between the Chilopodes and the Diplopodes, however, according to some systematists, is a small family called the 

*Oxyopidae*, a name derived from the Greek words signifying *tip* and *joe*. This order is composed of the families Lysiopodidae and the Podylenidae. They have the flattened bodies of the Chilopods, but the antennal and pedal arrangements of the DiploPods. Their locomotion is more rapid than the latter, but not nearly so rapid as the former. The members of this sub-order are presumably also vegetationists, and at least one species of the genus *Polydesmus* is known to have been exceedingly destructive to the young tobacco-plants, in the vicinity of the city. They have also been detected preying on other species of vegetation, and especially on small fruits, when near, or in contact with the earth. Their bodies are shorter and proportionately broader than either of the two orders, to which they are mutually related, and their legs are articulated at the sides. Of course, in the present advanced state of science, there are many minor divisions, not essential to the objects of this brief paper.

Belonging to the first family of the first order—namely, *Cernatidae*, a species that is very abundant and widely spread, but I have no collection of ever having observed it in any other locality in the county. This is *Cernatia forensis*, or a species very nearly related to it, and is the typical genus of the family to which it belongs. This animal is endowed with the most remarkable curatorial powers, and unlike most of the chilopods, its *locus* is not merely or mainly in moist places, nor yet only in dark places. I have observed it not only at nearly all hours of the day, but also at nearly all hours of the night, and under a brilliant gas light as well as in the dark. The antennea as far as it is, it frequently emerges from a cover of paint-sheets and papers on my desk, and occupies a prominent position within twelve or fifteen inches of the bun with which I am writing, manipulating its long fulliform antennae, seemingly canvassing the area around it, in search of prey, or guarding against possible danger. The body of this animal, in proportion to other subjects of the order, may be called short, and the feet and the antennea very long and slender. I do not think that I have noticed one more than two inches in length, and in dark no more and posterior feet extended, some individual, with its antennae of four or inches in length. When quite young and small they are nearly colorless, but the adults are dorsally tinged with blue or green, and whitish beneath, the feet and antennea being also whitish.

When Mr. James Thackara was express agent, he witnessed a deadly conflict between a large specimen of *Cernatia* and a *Blattis*, or cockroach, which ended in the death of the latter. Indeed, the former appeared to be recharging and deftly approaching the latter, whilst the latter made no attempt at offense or defence, being solely occupied in avoiding a rear or lateral attack. The roach raised itself up on its feet as high as it possibly could, its body turning around as it ran on a pivot, with its head towards its enemy. Fin

ally, in an unguarded moment, *Cernatia* sprang upon it, and in another moment the roach was on his back, with no signs of life, save in his trembling tail, whichJim, at Mr. *Cernatia* fled.

As a general rule, articulated animals possessing swift running powers, are predominates in their habits, and carnivorous in their appetites. It is true, some carnivorous insects are slow in their locomotion, and lie in wait for their prey—like the Mantis and Reduviidae—but these are generally provided with a largely developed pair of anterior feet, and are raptorial in their habits; but as a general thing, swiftness is not meaningless, but is to aid the possessor of it in capturing its prey. On the other hand, certain, slow, slow-moving beasts are nocturnal, and feed on plant food, or bore into living or decaying wood; and this is especially the case with those that are mandibulated, that is, possessing jaws. Some of the hand-stellated species—those piecure vegetation, and suck out its sap—are very nimble and quick in flight, but the larger number of these are merely a sort of “dodgers,” and do not rely on their running speed. Slugs, grubs, caterpillars, maggots, mites, worms, etc., etc., are slow in their locomotion, and do not seem to depend upon it to secure their escape from danger. Some of them, by their mechanical and unfriendly presence, will relax their hold, fall to the earth and hide therein; but the larger number manifest no consciousness of present danger, and hence allow themselves to be destroyed with impunity. No animals, however, are more conspicuous for this characteristic trait than the *coleoptera*. Occasionally we may find a caterpillar, or an army of them, moving with as much haste as such animals are capable of making, but it is not because they are afraid of any person or thing, but because they may be in search of food or a proper place to undergo their metamorphosis.

As a general rule the order Orthoptera may be excluded from this rule, and yet there at least is one family in that order that is strictly predaceous, but it does not depend upon its curatorial powers, but on its raptorial powers in securing its prey. The genus *Blatta*, or cockroaches, are swift runners, but they are not strictly vegetationists in their feeding habits. Crickets, grasshoppers, and locusts, can get out of the way quick enough to rank with predaceous insects, but they depend more upon their saltatorial than their curatorial powers. If they were predaceous, we know that their legs should have been of no assistance in capturing prey, for their legs are most useless, and they never seem to know where they are going to alight; it may be against a fence or wall, in a hole, a mound of water, or in a fire. The Cicindelas and Carabidens, among the coleoptera, are all predaceous and all swift runners, in that respect, possessing the characteristics of the Coleoptera.

Crickets, however, are not purely vegetationists; they have also carnivorous habits. Some years ago, during a few very warm days in the month of November, I found in the laceraated carcass of a cat that appeared to have been recently killed, about one hundred field crickets, in company with a large num-

ber of *Nexophila* feeding greedily on the flesh of the cat. So stupidly voracious were they that they made no attempt to escape, but allowed themselves to be devoured, as Mr. James Thackara, of the *Nexophila* died.

THE TARIFF AND FREE TRADE.

It would be a great pity if the party that has seemingly been so largely triumphant throughout the country in the late elections should so far misinterpret its mission as to unduly and mistakenly tamper with the tariff laws when it comes into power. It is true, there may be occasion for a partial revision of these laws, and the very fact that a combined change may be interested is a separate element in the situation. This characteristic in nosious in- sects is very fortunate to us, but not to them. 

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with similar interests of the North and East—her former competitors in political ethics, her present rivals in economical practice.

4 The South, t. e. the New South, will soon be clamorous for a protective tariff as of yore she was belligerently clamorous for free trade, and knowing the South as well as we do, we can safely venture the opinion that she will occupy no middle ground; that she will not accept any sophism, or be enjayed by the sophistry of a "Revenue Tariff," or a "Tariff for Revenue," so called, because they will accept as readily as do the great manufacturers of the Middle and New England States the theory of proper protection, knowing that a failure to do so places them in a subordinate position to foreign manufacturing interests, no matter how valuable her natural resources may give her advantages not possessed by the North and East; and she well knows that what will place in jeopardy the interests of her neighbors, will assail with as much force the interests involved in the looms and spindles of the cotton manufacturing centres of the Southern States.

5 It was well, indeed, that the political economist study these facts, and remember in connection that issues and occasions present themselves from time to time in the national economy that puzzle the most astute economist, and of all the questions, none require the attention of wise, profound, and skillful consideration more than the complex theories of tariff and free trade. Which of these is the more important factor in the economical administration of the government is a mooted question; but that one must yield to the other is as irreproachable a fact as was the same theory of irrepresible presented by Mr. Cattell on one of the most vital questions ever presented to the thought and action of the country.

6 There can be no compromise—ever an evidence of weakness—but one or the other of these issues must submit to the power of the other; which will yield, it is not in the province of this article to determine. We cast the thought upon the waters of public opinion, and will be pleased to answer any and all correspondents who may desire our views as journalists, not as partisans."

THE TURKEY.

(Melopsitha gallo-pavo.—Linna.)

"Man, cursed man, on turkeys preys, And Christmas shortens all our days. Sometimes with oysters we combine; Sometimes assist the savor chine, From the low peasant to the lord, The turkey smokes on every board."

At one time it was thought, in England at least, that the turkey had its origin in the country called Turkey—the land of the Turks. This was a grave mistake, the naturalists of England knew better. A "Perfect description of Virginia," written two hundred and forty years ago, it is recorded that the colonists had "hible turkeys" weighing sixty pounds," and Ray refers to America as the origin of the species from which we derive our domestic bird. It is easy enough to perceive how the name Turkey should have been applied to the land of the Turks by "outside barbarians," but it is not so easy to perceive why, or how, it was first applied to an American fowl.

The Melopsitha of the ancients was not a turkey at all: it was a "Guinea fowl," Linnaeus, however, has given this as the generic name of our turkey, a bird which was altogether unknown to the ancients, and ornithologists have continued it to the present time.

But this is now of little consequence; for it has been proven, and is generally conceded, that the Europeans became acquainted with this bird after the discovery of America, and from which it has been spread, in a domesticated state, over the greater part of the civilized world. The wild turkey at one period had a much wider geographical range than it has now, extending from the northwestern states down to the Isthmus of Darien, but civilization, public improvements, and general progress are fast circumscribing that range, and probably the present rising generation may see its entire extinction as a wild bird. Moreover, they do not seem to increase faster than they decrease, so that the turkey in its domestic state is at a disadvantage.

The adult males are very hostile toward the young, and kill them whenever they can get an opportunity, and that opportunity is more frequent in a wild state than it is under human intervention in a domestic state.

In the wild bird there is a general uniformity of coloration, but in the domestic bird, there is great variation, from pure white to almost pure black, including almost as many varieties as there are in the genus Gallus, which includes our common "chickens." Attempts have been made to demonstrate that there are two distinct species among the turkeys, but these have had a universal abrogation. It is supposed the Mexican and farther southern bird is specifically different from that which inhabits the United States.

It had also been alleged that the tailfeathers of the Mexican bird were not tipped with white, or whitish, presenting the light-colored margin when the tail is expanded; but that distinction can certainly mean nothing. In one of our county stores about the first of October, we came upon a family of turkeys containing an adult "gobbler," two adult hens, and nine "adolescents" almost as large as the hen. A closer inspection had two that lacked the white tips of the tail-feathers; three were entirely white; one was buff, and the remaining three dark colored with the white tips very conspicuous. The adult gobbler was dark—almost black—and bronzed, and the females were brownish. These were probably the progeny of the two hens, or may have been a single family, and we have only introduced the phenomena here to illustrate the tendencies in the bird to vary from the wild type, in its plumage.

7 Of course, these different varieties have their different designsations, but still they all belong to the Linnaean genus Melopsitha. There are "Buff," "Brown," "Motled," "Grey," etc., etc.

8 The "Honduras Turkey" (Melopsitha orcelata) is nearly the size of the common turkey, and is supposed—as the name implies—to be a distinct species. The distinction is based upon the less developed tail, and the fact that the bird has never been known to spread it. The "Brush Turkey" is an Australian species. It is the Taperae bitorus of Gould, and inhabits various districts in New South Wales, where it is found in large flocks. It is, however, not a true Melopsitha, and hence was not derived from our aboriginal stock. As before stated, the "Pintado" or Guinea Fowl, was the Melopsitha of the ancients, but is now referred to the genus Numida, Melopsitha being retained as a specific name. Both the turkey and the guinea-fowl are related to the "Peacock," which is not only equivalent to "chicken-pheasant," but that not only implies that the turkey and the pheasants are related, but also that both are related to Gallus, or the common fowl. Systematically considered, they all belong to the Phasianidae, or pheasant family.

Perhaps no other bird in the civilized world has attained to a greater popularity as a "stable bird," than the turkey, and none suffer a greater victimization about Thanksgiving and Christmas festivals; and the abrogation of these birds on these occasions would almost be an abrogation of these festivities themselves. If the poor man can only afford to partake of turkey once or twice in a whole year, it would be on one or both of these festivals, in nine cases out of every ten. The turkey has, therefore, a most fearful Samantha to run in its mission through civilization.

To visit the poultry markets of any of our great cities during the week preceding either of the festivals named, a most formidable scene would be revealed, and the novice not only would be wrapped in wonder as to where all these fowls come from, but also as to where they all go to. Truly, there are also ducks, geese, and the common fowl in goodly numbers, but none of them garnish the festive board to the extent the turkey does on those annual occasions, and the paraphernalia loud may well have written:

"Who would be a turkey hens, Fed and fattened in a pen, Killed and eat by hungry men, Upon a Christmas day."

KITCHEN GARDEN FOR DECEMBER.

The care of hot-beds, etc., is nearly all that demands attention; true, other things may be done, but quite as well at a future day, unless the season is over. The annexed hints may, however, prove useful: Compost piles should be attended to; radishes and salads sow in frames: trench and drain vacant ground; transplanting trees may still be done.—Lan dreth's Rural Register.

As long as we can collect anything about garden seeds, except those raised, gathered, and stored away for future use by our mother, the name of Lan dreth has been associated in our memory with this business. About sixty years ago a party..."
visiting Philadelphia (on foot) brought home some seeds called by them "Chocolate corn," or "Chinese Chocolate" used as a substitute for coffee, and we have a faint impression that these seeds were obtained from Landreth. The country had not yet recovered from the great financial crisis of 1817, and coffee was so dear that most people were compelled to use "brown rye" instead of coffee. Our mother obtained some of these seeds and cultivated the corn to fruition. It grew some, though not like "broom corn," but the head was compact and so heavy that it bent over and hung with the apex downward. When fully ripe the seeds were large, and had a purple color, and the leaves and stalk were streaked with purple. It was roasted the same as coffee, and to our juvenile taste it was as good, and tasted like chocolate—at any rate, far superior to rye coffee. After coffee "came down" in price, chocolate corn "went under." For fifty years we heard nothing more of it, but within the last five years we saw several varieties of it sent in from California, one of which strongly resembled it. It belongs to the Sorghum family.

When the Landreth seed farm was first established, there were "only thirteen sparsely populated States" in the Union (that was about 1789-93 years ago). An establishment which has sustained itself so long with constantly increasing facilities and reputation, must surely be worthy the patronage of the country; and we can freely allow them the privilege of "blowing their own trumpet," without subjecting them to the charge of egotism, or self-hallucination.

**EXCERPTS.**

**HEALTH HINTS.**—Try popcorn for nausea. Try cranberries for malaria. Try a sun-bath for rhenemus. Try ginger ale for stomach cramps. Try clam broth for a weak stomach. Try cranberry pottlecy for costulas. Try eating fresh radishes and yellow turnips for gravel. Try swallowing saliva when troubled with sour stomach. Try a wet towel to the back of the neck when sleepless. Try buttermilk for removal of freckles, tan and butter. Try onions and horseradish to relieve aseptic swellings. Try to cultivate an equable temper and don't borrow troubles ahead. Try taking your codliver oil in tomato catsup, if you want to make it palatable. Try breathing the fumes of turpentine or carbolic acid to relieve whooping cough. Try taking a nap in the afternoon if you are going to be out late in the evening. Try a cloth wrung out from cold water put about the neck at night for sore throat.—Dr. Foot.

**DANIEL MURPHY,** the noted pioneer who went to California in 1844, died recently at San Jose. He was the owner of immense herds of cattle and thousands of acres of land. He owned 200,000 acres in Nevada, some 6,000,000 acres in Mexico and large tracts of land in Arizona.

**MUCH of the sugar sold in English markets** is from the beet. It is not an uncommon event in Europe to gain a yield of twelve tons of beets from an acre of ground, and from twelve tons of beets about one and a fifth tons of sugar is extracted.

**The French Minister of Agriculture has placed at M. Pasteur's disposal a further sum of $10,000 to enable him to continue his investigations into the nature, cause, and prevention of contagious diseases among animals.**

In England and Scotland where there are many steam ploughs at work, the most popular sorts are those drawn by stationary engines at each side of the field.

**EXTENSIVE lumber fires are becoming alarmingly numerous of late, and a large amount of lumber has been destroyed in this manner.**

It is estimated that the California fruit and vegetable pack this year will amount to about 20 per cent, more than that of 1881.

**PROF. BEAL says that all our species of bats are not only harmless, but positively useful, as they are great insect destroyers.**

**SHRIMP-GROWERS of Los Angeles county, Cal., report heavy losses from a poisonous weed on which the sheep feed.**

**THE quality of the corn crop throughout the South is superior, and most of the Southern States report large yields.**

**A MISSOURI shrimper-grower, after some years of experience, advises breeding from polled rams.**

During the past year agricultural implements to the amount of $85,000,000 have been made in this country.

We are informed by old farmers, and they are not far from correct, that next year's wheat crop will be more than double that of any previous year in Unalilla County. The increase of acreage is astonishing, and the amount of land that was summer-fallowed is immense.—Portland, Oregon, Tribune.

The oxygen of the air aids and facilitates the germination of seeds, and seeds buried so deeply in the ground as to be out of reach of the atmospheric air will exhibit no signs of life.

**ANIMALS when first confined, and supplied with fattening food, always increase largely in weight during the first few weeks, after which the rate of increase diminishes to a considerable extent.**

**TEXAS has five million head of horned cattle and a superabundance of mast and corn, and thousands thoroughly educated men and women, yet she imports butter, hard and school teachers from Kansas City.**

D. BRIDGES, of Daviessville, Tojo Co., Cal., has a plantation of 460 acres of grapevines from four to eight years, on which he has raised forty-six car loads of raisins, most of which were sent East.

If those farmers whose farms are soils underlaid with clay would sell one-half of their land and put the proceeds into the judicious tile drainage of the rest, they would make more money from the one-half of the farm under improvement than they now do from the whole area.

**JUTE SEED.**—The Florida Times says that about a year ago Mr. Hamilton Diston sent to India for a supply of jute seed, but the difficulties attending the export of seed prevented the obtaining of a larger quantity than 1,300 pounds. This amount of seed was distributed throughout the State by Mr. Diston, with the offer of liberal premiums for the best exhibit of prepared jute. The competition under the terms of this offer will shortly take place at Jacksonville, and the Diston claims that the planters of the seed promise some choice samples, that will no doubt attract sufficient attention to this industry to warrant the business being taken hold of by capitalists on a large scale.

**A QUEER INDUSTRY.**—One of the queer industries of New York, says the United States Miller, is gathering the stale bread from large hotels and restaurants, and grinding it up into food for poultry and pigs. The Astor House sells its stale bread for $10 annually. The contractor has $100,000 invested in the business, and keeps nine teams at work. We are not posted on the system of reduction employed, whether stones or rolls. Certainly a purifier would be essential.

**OUR VARIOUS INDUSTRIES.**—According to the census report there were in the United States, in 1880, 2,890 wool establishments, employing 131,439 hands, and bringing out annually products to the value of $267,182,914; 1,005 cotton establishments, employing 180,472 hands, and turning out products of the value of $210,590,383; 1,005 iron and steel establishments, employing 140,073 hands, and turning out products of the value of $296,557-56.

The honey industry is assuming greater importance every year. Now that the foreign trade is clearly established, the demand is almost unlimited, and no fears are entertained of glutting the markets. At present the home markets are fully supplied, but the foreign demand will soon reduce them and increase prices.

Now is a good time to lay in a stock of vegetables to feed fowls during the winter months. Such food promotes their health, and will induce hens to lay much earlier in the spring than when grain is their only food. Cabbages, turnips, onions, and such vegetables, which need not be of the best quality, are the best for this purpose. Do not forget that bones are of great value to fowls, especially if the poultry is kept closely confined.

The cellar for roots and apples should be kept cool and rather close and damp to prevent wilting; the temperature should be as near freezing as may be without actual frost, and in warm weather the cellar should be kept close to prevent it from getting too warm. These conditions are more easily obtained in a cellar under the barn or carriage house than under the dwelling, and moreover the disagreeable, not to say dangerous, smells arising from neglect of the vegetable cellar in spring and summer, when one other spot as amonable place than our dwelling-house cellar. — Coward (New Hampshire) Patriot.

**THE CANNED FRUITS.**—The canned fruit product of California has largely increased within the last decade. The product of 1875 aggregated in value about $500,000. In 1878 it had reached $1,250,000. In 1880 $1,500,
000, and in 1892 the product is set down with a value equal to $2,600,000. For the future we have every reason to believe that the rate of increase will be even greater than for the past. And there is no question but that California is destined to become the largest and finest fruit-producing country in the world. — San Francisco, California, Patriot.

FROZEN CAME.— "My cane that was frozen all winter I worked up until it got mouldy. It did not sour for two weeks after the frost left it, but it began to have a heavy coat of mould within forty-eight hours after the frost was all out. Some was cut from the field a day or two before, froze up and was in good shape when it did freeze up, soared in a few days after the frost left it, while that which was in piles in the yard for three weeks did not sour at all. I think that its drying out kept it from souring, for when I worked it this spring it tested 13.7, while the same cane tested 11.12 B last fall. The syrup is of a darker color than it was last fall. It made fair sirup, however. I worked part with lime and part without. I liked that the lime was used in best." — J. A. Jones, Fillmore county, Neb.

Wire Worms.— "I planted my corn in the usual way, but in one row I put wood ashes, in a second sand plaster, and in the third common salt. There was little difference, if any, in the first two and those I had done nothing with, but where I put the salt about nineteen-tenths of the corn came up well. So I concluded to doctor the whole piece, and sowed a good coating of sand and stirred the ground well, and then sowed another coat not quite so heavy. I then marked out and planted my corn, and it gave me a good stand, something that I never had on that piece before. I made an average yield of corn, and put an end to the wire worms." — L., Miami county, Ohio.

A small bantam and a big black hen both began laying eggs together in the same nest. When a sufficient number had accumulated the hen would try to get the eggs given sole possession and began to set. This lasted for over a week, when she came off and the brown hen took her turn, staying until the eggs hatched, the result being only three chickens. Since that time the partnership has been continued, both doing equal duty in obtaining food for the chickens, which can be seen running first to the one and then to the other, according to their success in scratching. At night all the little ones sometimes stay with one mother, sometimes with the other, and sometimes they are divided. This story is told by the Hartford Evening Mail.

One of the largest silos in Europe is in France on the property of M. Vicompte Arthur de Cheselles, in the Department of the Oise. In this is deposited the produce of 1,200 acres. The silo is described as an oblong shed, roofed with tiles 72 yards in length, 63 yards wide and 43 yards high, forming an admirable Dutch barn, under which a great portion of the cereals of the farm is stored at time of harvest. The floor, instead of being level with the ground, is sunk about twelve feet and is paved and drained. In this great pit is stored the ensilage.

Dr. Mittenroth read a paper on near-sightedness before the New York County Medical Society a few evenings ago, in the course of which he described the singular case of a fine horse in Berlin that had become intractable and which proved on examination to be suffering from myopia. The owner had a pair of glasses for the animal, and on putting them on it became as tractable as ever.

The cultivation of bamboo in the Southern States is being advised. It is believed that it will thrive well in marshy regions such as fringe the South Atlantic and Gulf States.

A French farmer writes that he has cut out rough-couch grass on his farm by the cultivation of buckwheat.

UPLAND RICE.— "First, it requires close land to hold the moisture—black gum or gaud-berry lands preferable. Perfect drainage is necessary. I have planted both, and prefer the gum to sandy lands. With 75 pounds superphosphate to the acre I made an increase of 14 bushels per acre on a field of twenty acres over four acres that had none on it. The unfertilized land made 18 bushels and the fertilized 32 bushels per acre. One hundred pounds is the outside limit, in my opinion, for rice; any more is injurious—makes too much straw." — W. A. Jones, Liberty County, Ga.

GAS TANK ON TIN ROOF.— "I, experience is that while gas is a first-rate sort of paint for many things its place is not on a tin roof. I painted over a tin roof with it. The sun and rain togethergradually caused the paint, rendered it worthless, for it affected the rain water that flowed from the roof into the cistern. I also thought it had the effect of attracting the sun more than a light-colored paint would have done, for the tin curled and twisted in places." — F. M. G., Clark county, Ind.

NITROGEN ON THE FARM.— "Nitrogen applied on the New Hampshire Agricultural College farm was destructive to corn in successive applications: had but little effect on potatoes, and increased the crop of barley." — Professor W. H. Seaborn.

CONTRIBUTIONS.

FOR THE LANCASTER FARMER.

"THE FARMER'S FRIEND." I have before me a periodical bearing the above title published in Parksburg, Chester co., Pa., and dated February, 1838. This little Journal, one half the size of the LANCASTER FARMER, but containing less than one-half the reading matter in the Farmer, was "devoted to Horticulture, Agriculture, Botany and Rural Economy." It was edited and published by one Jason M. Mahan, a "Yanke Schoolmaster," who is still re-remembered by some of the older inhabitants of Salisbury, who attended Baker's School thirty years ago.

This insinuating pedagogue, who taught school for 18 months, held for the motto of his paper, "The public good our only aim." More than half the paper is given to the mulberry and sugar beet business. In fact the Farmers' Friend lived its brief life during the great Morus Multicaulis boom, and probably gave up the ghost when the mulberry trees were grubbed and piloted for bonfires. It is a curious fact that the silk-worm and the sugar beet craze ran their course together, and now, after nearly half a century, are brought prominently before the public again at the same time.

Hear what Editor Mahan says about the silk business: "Having been about ten years engaged in the culture of the mulberry and silk worms, I often reflect on the importance of the ingredient of the business is such as will enable us to furnish the necessary information to enable the farmer to raise and prepare silk for market without further knowledge or assistance."

"We shall, therefore, sing speed to the plough, wish health and prosperity to the farmer, and rejoice that he is entirely free from such perplexities as disturb the printer."

Of the Morus Multicaulis he says: "Of all the species of mulberry yet introduced into this country, for the purpose of feeding the silk-worm the Morus Multicaulis decidedly has the preference, and will probably be substituted in place of all others in every region of the globe. We would advise all farmers, by all means, to lose no time in supplying themselves with that most invaluable species."

Again he says: "The culture of silk in America succeeds so well in every respect, there is no longer room to doubt of its being eventually very extensively and profitably followed as a pursuit. Herefore the greater portion of the specimens of this valuable product have been the result of experiments by individuals, on a small scale, but at present larger quantities prepared in factories are in demand, and a limited market exists in Europe for the silk thus afforded."

The silk thus offered has everything to recommend it in point of lustre, smoothness and strength, and will, it is said, stand a comparison with the Italian. Then why be tributary to foreign nations for this article?"

Jason Mahan was the author of a work on arithmetic called Mahan's Instructor, hence, with his mathematical turn of mind we need not be surprised at the following:

"Mr. I. B. Gray, of Frederickburg, Va., in April, 1835, at an expense of only $17.50 and labor, set out 75 Chinese mulberry plants. In 1836 he writes to the editor of the Silk Culturist that he had in 18 months multiplied these 75 trees into 5,000 additional trees, and, to crown all, the editor of the Culturist asserts those 5,000 trees of the size and height described by Mr. Gray, would be purchased in New England at 50 cents each as soon as offered! And this enormous profit of $2,250 realized out of an investment of $17.50 in eighteen months required only one-fourth of an acre of ground."
THE LANCASTER FARMER.

For The Lancaster Farmer.

THE BALANCE OF TRADE DELUSION

Editor of The Farmer: I notice, in the last number of your journal, that a correspondent, S. P., of Lincoln, Del., undertakes to discuss the "Balance of Trade" question, and appears particularly desirous of a controversy with me on the subject. According to him my communications to the Farmer have been "false in statistics" and only deserving of "ridicule." I do not feel under obligation to enter into discussion with one who comes at me in that meat-axe style on his first appearance; but lest some of your readers might be led to believe from his confident and more or less plausible assertions that they cannot be answered, I will reply to one or two of the most plausible; but I am not going here to repeat the arguments of my former controversies; they may stand or fall on their own strength or weakness, and in respect to them I will only now say that, in my opinion, they have not been confuted, and cannot be. I have no reason to believe, as alleged, that there was an important error in the figures as I gave them in 1829, though, in adding up the long columns of figures, it is possible that I made a mistake. (I have lost the Report from which they were derived.) If I gave truly the summary of official statistics as furnished by the then Chief of the Bureau of Statistics, even if erroneous, and S. P. gives figures furnished by Mr. Nisum, or some one else, and the two do not correspond, does that give him a warrant to charge falsification of statistics? Sound logic and good manners alike will answer, No.

But admitting, for argument's sake, that his figures are the right ones, and that our imports were greater than the exports after 1859, as is admitted to be the case in every decade before that time, and how does the matter then stand? It proves that not only part of the time, but all the time, ever since the United States was a nation, we have been importing more than exporting. Greater value than we have exported—been thus losing immensely by our foreign trade—being headlong down the road to commercial ruin uninterupted for almost a hundred years; and most astounding of all (to balance-of-trade theorists) we are not yet ruined, but even more wealthy and prosperous than when we set out!

Another fact equally astounding, no doubt, to economists who think it is ruinous to receive more value than we part with, is that England and other European countries of which we have the statistics, show that each one of them imports a great deal more than it exports. And thus it has been these many years, and of late, by going on, decade after decade, each country being impoverished by its foreign commerce in the same way with ours, yet their governments, with a reckless and criminal disregard of their country's welfare, making no effort to prohibit a business so disastrous to their people! Your Delaware correspondent bases his argument on what he regards as an "axiomatic" proposition, viz: "that all production is gain, and all consumption is loss," from which he argues that an export of imports over exports must be loss. Elsewhere in his article he argues that it is because so many of the imports are useless luxuries that we are the losers by foreign commerce. It now appears that he regards all imports, except specie perhaps, no matter how useful and valuable, as injurious, and a loss, if in excess of our exports. Thus, if we export $100 worth of corn or tobacco, and get in return $100 worth of cloth or salt, then the balance is against us, and the country loses $20 by the trade, because the cloth and salt are for consumption, and all consumption is loss." A word about that.

All grain, fruit, &c., is raised for the very purpose of consumption, and in fact is consumed, one way or another. Is it all lost? If consumed by fire or sunk in the sea by shipwreck it is lost undoubtedly; but if a farmer raises corn to sell it to the city, and to his horses, though, the corn is consumed, its value reappears in the form of beef and pork. If he and his family eat it, the value is restored to him and them by life conserved and bodily strength imparted and increased. Is not that as valuable as the money it could be sold for? Is not the very opposite of this alleged "axiomatic" proposition nearer the truth, viz: All the productions of the earth are or will be lost if they are not consumed? Were it not for the benefict effects of their consumption, they would be of no more value than the dirt in the road, and it is only by man through consumption that man and all the animal and vegetable kingdom are kept alive.

Exports represent consumption, the same as corn fed to the hogs. We get back the value of the exports by our imports and in no other way. Were it not that in place of the exports we could import something of greater value, we would never export anything, for it would be a losing business. Were it not for the imports the exports might as well be thrown in the fire for all the good we would derive from them.

I have not claimed, as insinuated by S. P., that under all circumstances excess of imports must be a gain, but that such excess is not a proof of loss.

A few words about luxuries, of which S. P. alleges we import and consume hundreds of millions worth every year, that amount to nothing of value. When a farmer, say, has supplied himself and family with the essentials of life—plain food and clothing, is out of debt, and has a surplus of grain or wool, or tobacco, and he thinks proper to dispose of part of the surplus in exchange for unessentials or luxuries, such for instance as tea or coffee for his breakfast, silk dresses or jewelry for his wife and daughters, a piano for his parlor, pictures for his rooms, a pleasure carriage for the family, toys for his children, and many other articles of luxury, does the satisfaction derived from the possession of those things "amount to nothing" of value? If he prefers them to the money they cost, is he not entitled to have his choice, and would it not be a great impertinence for S. P. to come and tell him—"I don't care for those things—I don't value them a cent, and if you got them from abroad in exchange for your grain, you are a foolish man and a bad citizen, wasting your means and impoverishing your country"? Is nothing but coarse food and clothing of any value? Is all decoration and ornamentation nothing but criminal waste? "If we wear all our cloth, and only corn-bread and bare meat, and whose clothing is but a single blanket, the model we should pattern after? It is said that instead of luxuries we should only import things of real utility, and above all, money. Now, we do not buy luxuries because they are imported. We import them because we want them, and because we can procure them more advantageously abroad.
than at home. The fault, if there is any, is in our injudicious wants; for, if we will have luxurious wants, it is our business to procure them. Our only course is to let them with as little expenditure of our means as possible; for whether they are made at home or abroad, we know that it is alike the product of our own labor that pays for them, and the fact that they are imported can be no ground of complaint. Importing money instead of them would not help the matter, for so long as we want luxuries, and so long as there is no prohibitory law enforced against them, the money imported would simply be part with to procure them. This is the practice of the United States, where they are bought in home-made substitutes, or perhaps some of it in cheap whisky, which would not be much improvement. Besides, the hard money itself may be, and a large share of it daily is, melted and fashioned into jewelry and other gold and silver ornaments, which are as much luxuries as anything else.

As I said at the beginning, I will not repeat the general argument in proof that the Balance of Trade theory is a delusion, but in order to show that the views I entertain are sustained by high authority, I ask you to publish the following extract from a speech of Daniel Webster, delivered in the U. S. House of Representatives, April 2, 1824, and which was pointed out to me by a friend since my former communications were published in the Farmer. So far as appears, no one in Congress at that day ventured to controvert his argument, and luckily for you, your Delaware correspondent was not there to set him down by telling him that "his arguments were not dangerous," and "only needed state-ment to meet with ridicule."—J. P., Lancaster, Dec. 6, 1822.

EXTRACT FROM D. WEBSTER'S SPEECH.

* * *

"By an unfavorable balance of trade, I understand is meant the state of things in which the exports of a nation exceed its imports. This is the condition of a man that buys more than he sells, and how can such a trade be maintained without ruin? Now, sir, the whole fallacy of this argument consists in the misconception of the word 'balance.' What they mean by the balance of trade is that state of things which, according to the notion of a balance of trade economists illustrate a prosperous commerce. On the other hand, if the return cargo were found to be worth much more than the outward cargo, while the merchant having paid for the goods exported, and all the expenses of the voyage, finds a handsome sum yet in his hands, which he calls profit, the balance of trade is still against him, and whatever he may think of it, lie is in a very bad way. Although one individual or all individuals gain, the nation loses. While all its citizens grow rich, the country eminently, which extends beyond the cere-bral functions, giving rise to increased vigor of imagination and intellect, without any subsequent confusion or stupor, such as are characteristic of narcotics. Coffee contains essential principles of nutrition far exceeding in importance its exhilarating properties, and is one of the most desirable articles for sus-taining the system in certain prostrating dis-eases. As compared with the nutrition to be derived from the best of soups, coffee has de-cidedly the advantage and is to be preferred in many instances. The medicinal effects of coffee are very great. In intermittent fever it has been used by eminent physicians, with the happiest effect in cutting short the attack, and if properly managed is better in many cases than the sulphate of quinine. In that low state of intermitent, as found on the banks of the Mississippi river and other mala-rial districts, accompanied with enlarged spleen and torpid liver, when judiciously ad-ministered it is one of the surest remedies. In yellow fever it has been used by physicians, and with some it is the main reliance after other necessary remedies have been adminis-tered, and is a great change, and thus be comes a conservator of force in that state in which the nervous system tends to collapse, because the blood has become impure: it sustains the nervous power until the depuration and reorganization of the blood are accom-plished, and has the advantage over other stimulants in inducing no injurious secondary effects. In spasmodic asthma its utility is well established, as in whooping cough, stu-por, lethargy and such troubles. In hysteri-cal attacks, for which in many cases a physi-cian can form no diagnosis, coffee is a great help.

Coffee is opposed to malaria, to all noxious vapors. As a disinfectant it has wonderful powers. As an instantaneous deodorizer it has no equal for the sickroom, as all exhalations are immediately neutralized by simply passing a chafing dish with burning coffee grains through the room. It may be urged that an article possessing such powers and capacity for such energetic action must be injurious as an article of diet of habitual employment, and not without deleterious pro- properties; but no corresponding nervous disarrangements have been observed after its effects have disappeared, as are seen in mari-jana. With the same advantage it is not im-parted to the nerves is natural and healthy. Habitual coffee drinkers generally enjoy good health. Some of the oldest people have used coffee from earliest infancy without feeling any depressing reaction, such as is produced by alcoholic stimulants.

FEEDING STOCK IN WINTER.

As the season draws near when our domestic animals are to be fed upon artificial forms of food for nearly half a year, it may not be out of place to devote a little thought to the subject of winter feeding. There is no doubt whatever that in years gone by, if not at the present time, many cattle have been kept
through the winter with little aim on the part of the feeder, beyond barely carrying the animal through alive; and where such a course has been pursued, there has always been more or less loss of life as well as loss of flesh, and an absence of all forms of profit whatever.

When the country was first settled, and there were no mowing fields of good, sweet hay from which to secure a winter supply; when the only winter fodder was the straw of ripened grain and the interior grasses of our wet meadows, and when the profit from stock husbandry was nil; it was not unusual to confide to summer pasturage, there was a better excuse for such a practice as was this winter system of partial starvation.

On a large proportion of the farms of New England at the present time, the cattle are kept in quite as good condition in winter as during the summer season. This is particularly true of the herds kept upon milk farms where there is a daily sale of milk to go to the cities or villages. Farmers who are receiving a daily income from their stock are less fearful of daily expenditure for food, necessary food. Compared with the past, there is now little to complain of regard to the treatment of most of the cattle in the country. The farmers generally feed well, as they understand that term. But feeding animals well, in such a manner that they will produce abundantly of milk, flesh, growth, work, or fat, is something that requires a good deal of thought, study, and considerable practice.

The chemists are informing us of the nature of the relative proportions in which the several food elements should be mixed, how much grain will be found most profitable to feed with certain amounts of coarser feeders, and they are giving us tables showing the relative chemical and food values of many of the common forms of food used, but they cannot, with their experiments or tables, make a good feeder of one who has no idea of feeding than to merely stuff an animal's manger full of food one or more times per day. We knew of a farm full of cattle that were fed almost nothing the past winter, but good, merchantable upland hay, grown by high culture and liberal manuring. The cattle were kept warm, were nicely boiled, the stables were cleaned often, and a little water was freely provided, yet the cattle came out strong in the spring, and made but little growth. The difficulty in this case, as in many others which readers of the Farmer may be familiar with, was, that the good hay was given far too freely, or certainly too much at a time. There was plenty of hay in the barn, and the attendant wanted to make a good showing of his skill in stock feeding, so he filled the racks and mangers full at each feeding. At first the cattle coming in from a short pasture would eat heartily, but with little or no exercise there was little feed in the mangers and the quantity given was greater than the animal required. Of course a portion would be left after the whole had been picked over, and the choicest portions taken out. The rest was breathed over till nothing nothing would eat it, when it was hauled under foot, trodden upon and wasted. The fact is, good English hay used as bedding for idle animals, will almost surely spoil them if they can get free access to it with their mouths. "Under-feeding" is one of the charges brought by the agent of the Society for the Prevention of Cruelty to Animals, against owners or attendants of animals, but there are a great many animals seriously injured, and of course abused, from overfeeding, or, at least, from very injudicious feeding, which the agents are hardly likely to note. We have always found it more necessary to caution hired help against over-feeding than against under-feeding. Instead of giving the bills a few weeks' rest, so hardy a pernicious interest in an economical system of feeding. Then it is less labor to feed bountifully two or three times a day, than to give a little at a time, and then to notice how the animals seem to feel. A good observer will know, the moment he steps inside the feeding-room, whether his animals are sufficiently fed or whether they are still hungry, by their appearance. Cattle should have enough, and should then be left by themselves. They should have regular hours for feeding, and then they will know what to depend upon.

Animals that are fed well, and at regular times, do not require the same care of observation as animals on the carpet at usual feeding hours. Animals very readily acquire habits, and they will adapt themselves in a considerable degree to the customs of their keepers. It would be difficult to determine from the practice of different feeders whether cattle will do better upon two or three regular meals per day, for there might be many herds instance that have done well by either system. We have for many years made it a practice to feed cattle but two meals per day, one in the morning, the other in the afternoon, aiming to divide the twenty-four hours as nearly as convenient, into two equal periods, though the time between night and morning is usually a little longer than the time between morning and evening. The cow's stomach is so constructed that she can easily take enough good food into it to last her twelve hours, and we have long been of the opinion that food is more thoroughly digested when but two meals are given.

It is certainly a great convenience on a dairy-farm, especially in winter, to have the feeding all done at the two ends of a day, so that the middle of the day, while the sun shines, can be used for other purposes. Many families in the country have but two regular meals per day during the short-days of winter, and cattle that need meals stomachs designed specially for laying away large quantities of food to be masticated at their leisure, can certainly accommodate themselves to two meals per day as easily as can human beings with their relatively smaller digestive organs. In winter, when farm teams cannot work much more than six or seven hours per day, they can be changed off from three to two meals per day, and will do quite as well as if fed the noon meal. With but two meals per day there is less danger from over-feeding than if digestion be disturbed by a midday feeding, before the morning meal has properly disposed of by the digestive organs.

But we would not have our readers understand that we recommend the practice of giving all the food of one meal at a single feeding; on the contrary, we would give it at three or four different times, say twenty minutes or half an hour apart. The idea is to have the feeding continuous, till the meal is finished, then give no more till the next meal, some eight or ten hours later. A cow or an ox will occupy from one to two hours in eating a breakfast or supper of coarse, dry fodder. Watering, like feeding, may become somewhat a matter of habit as to the number of times and quantity taken. We prefer watering after each meal, but, in practice, find that many cattle will drink heartily but once per day. A good feeder will watch his animals and learn their wants, and endeavor to supply them, but never to over-supply.

Boston New England Farmer.

**The Rational Method of Tree-Pruning.**

In this new world little attention has been given to the pruning of trees. With our ample domain, giving space for all the trees, we have left them to grow as they might. Our pruning, where it has not been of that heroic and decisive sort which says the axe at the root of the trees and cuts them to the ground, has been of a trap-hazard kind, based upon no system and directed by no science. Each one has cut and trimmed according to his own notion or whim. If the limb of a tree has been in the way, becomes an obstruction to the walk, or intercepted some desirable look-out, it has been lopped off, usually by whatever instrument convenience would supply and in a manner to require the least exertion.

Tree-growers and the better class of farmers have been somewhat more painstaking in their methods. They have removed or shortened limbs with some study of after effects, and have so performed their work as to secure, if possible, the proper healing of the wounds which they have made. But in most cases the trees have been left to themselves or have been lopped with reckless carelessness. It seems to have been generally thought that they would bear any amount of mishap and the utmost severity of treatment. They have been regarded rather as dead than living matter, and their delicate and sensitive organizations, instead of being guarded and protected with sympathizing care, have been left to be the prey of neglect and violence.

The result has been that many of our forest trees have fallen victims to decay when proper pruning would save them, have lost their healthy, vigorous growth to full stature, and many trees planted by the roadside or the dwelling for the purpose of shade or ornament, have become deformed and short-lived in consequence of improper pruning.

With the rising interest in trees and tree-planting in America the importance of pruning and its proper method ought to receive attention as a branch of forestry. The object of pruning trees, forest trees especially, is to secure the largest and healthiest, and therefore, the most profitable growth of timber upon any given area of ground, and experience has shown that by a rational system of pruning a forest may be made to yield a much larger product than when left to itself as is ordinarily the case with us.

Hitherto there has been no adequate treatise on the subject of tree pruning in the Eng-
lish language, and we have been excusable for our ignorance of the subject. The Germans and the French are in advance of us in other departments of forestry, and also in this. The advantages of pruning forest trees, a promoting an increase of timber, was recognized in Germany two hundred and fifty years ago. But the practice of pruning fell into disuse after a time, until it was revived during the present century by the writings of De Courval and Des Cars, who recommend a system of pruning based on the fundamental law of vegetable physiology, and which is now adopted in all the continental forests. The work of Des Cars, entitled, "A Treatise on Pruning Forests and Ornamental Trees," has recently been translated from the French of the seventh edition, by Professor Sargent, of Harvard University, and published by the Massachusetts Society for the promotion of Agriculture. It is one hundred and fifty pages of a larger treatise of De Courval in a brief and more popular form, it being a duodecimo volume of less than one hundred pages.

The system of these writers is based on the fact that "as wood is alone formed by descending, elaborated sap, a wound made on a tree can only be recovered with healthy, new wood, where its entire circumference is brought into direct communication with the leaves by means of the layer of young and growing cells formed between the wood and the bark. To make this connection it is necessary to prune in such a manner that no portion of an unpruned or dead branch is left on the trunk. The can should always be made close to and perfectly even with the outline of the trunk, without regard to the size of the wound thus made. This is the essential rule in all pruning, and on its observance the success of the operation depends.

"A tree left entirely to itself," says Des Cars, "generally develops in one of two directions. It does not grow upwards, but assumes the low round form common to the apple-tree; the lower branches grow disproportionately large and absorb too much sap in the detriment of the top of the tree; and these long, heavy branches are broken off by the weight, or by snow and ice, leaving hiduous stumps. Trees of this form are very common; they generally decay at the top before reaching maturity, and have little commercial value. On the other hand, many vigorous trees grow disproportionately at the top, the lower branches die from insufficient nourishment, fall off, and leave, when large, bare decayed spots, which gradually penetrate to the heart of the tree, and ruin also its commercial value. Wounds caused by the breaking off of large branches by wind or snow produce the same results. Prevention of the danger by the practice of pruning; it is a simple question of surgery. Without pruning, the tree must sooner or later decay; with pruning, its value may be preserved. The secret of obtaining a complete cure in all operations requiring the removal of a branch, either living or dead, consists in cutting close to and perfectly even with the trunk. And it matters not how large the cut may be. This is a universal rule of action; and it is based on the fact that new wood and bark are formed by the descending sap, which passes down between the old wood and the bark and cannot deposit the new woody substance upon the scar of the pruned branch if it is left projecting at all from the line of the sap-vessels in the trunk; but where the cut is made even with the trunk it is in contact with new wood and bark, and the tree grows on to maturity with unimpaired vigor and soundness. If the limb amputated is large the wound will not heal over completely in a single season. The new wood will form first around the top and the sides of the wound, which will soon be completely surrounded by the new growth. Meantime, to prevent decay taking hold of any portion of the wound, it has been found well to cover the wound with something which will protect it. For this purpose coal-tar, a waste product of gas-works, has been found superior to the many other preparations which have been used. It has remarkable preservative properties, and may be used with equal advantage on living and dead wood. A single application forms an impervious coating to the wood-cells. It produces a sort of instantaneous stoppage of decay, which would otherwise be the case, thus adding to their value as timber, while more room for a remunerative undergrowth of coppice is thus given, and the total product of the forest greatly increased. In the practical application of the system it is held that the class of young forest trees, that is, less than forty years old, should be so pruned that the shoot, or trunk will equal the height of the tree, and the head should be elongated oval in form, the branches being, being more or less shortened in this purpose. Middle-aged trees, or those between forty and eighty years of age, should have thin trunks, equal to about two-fifths of the total height, and the head should be made to assume a somewhat rounder form than that given to the younger trees. In the old trees, eighty years and upwards, the trunk should be nearly equal to one-half the total height, and the head be still more rounded, and at all times decaying and dead branches should be carefully removed when broken by the wind. Such, without undertaking to go into the minute details of operation, is the system of De Courval and Des Cars. It commends itself at once as a rational system, and ample experience in Europe proves its great value. It is simple and intelligible, and may be put in practice successfully by any one. The Massachusetts society has made a very important contribution to practical forestry in securing the translation and publication of Des Cars' treatise.—Mr. N. H. Blyleven, Williamstown, Mass.

LETTER FROM THE MOTHER OF BAY- AND TAYLOR TO PROF. E. V. RILEY.

Kennedy Square, Nov. 6, 1882.

Prof. Riley—Dear Sir: I send a few silk worm eggs, by Mr. Davis. In 1880, a friend brought some eggs from California from two or three of his friends. I got about 100. I enjoyed feeding and taking care of them very much. I am crippled with the rheumatism, and can neither sew nor knit, but could feed and tend the worms when the leaves were brought to me. When they were done spinning I missed them so much that I thought of trying to raise a second crop, and not know- ing anything about their nature, beyond feed- ing and keeping them clean, I kept some of the eggs that had just been hied, in hope that the spring they commenced hatching for about four weeks, were told that they were annuals, and would not hatch until the next season. In 1881 I gave many eggs to all who wished to have them. One little girl let some of her by eggs, and put them in the garret, thinking it was the coldest place in the house. They were all right, for the winter, but in the spring they commenced hatch- ing before the mulberry put out, and she fed them on lettuce leaves, and kept them alive until the mulberry came; consequently they were much earlier than any others. The little girl got fived. She had to go quite a distance for the leaves, and wanted to sell them. I bought a few. They spun in due time, and as I knew they were the same as my own, was not in a hurry to put them in a cool place, never dreaming they would hatch; but to my utter surprise, in about four or five weeks they commenced hatching, and I had to hurriedly pull the leaves, I took particular pains with them, and they grew and seemed healthy; but they were not. There did not appear to be any particular disease among them, but every few days one or two of them, and little by little, in a few hours. There were about 100 hatched, and only 30 lived to spin. The cocoons were not so large as the others I had, but still of a fair size.

I have been intending to write for some time and ask if you could explain why annuals can produce two-crop worms. I hope you will pardon me for troubling you with it, but hearing that you were very much interested in the silk culture, I thought perhaps you would excuse the liberty taken by an old woman in her 84th year, and who is very much interested in the same, but unable to do much.

The Japanese eggs didn’t hatch well. They were gummed so tight to the card that the poor little worms had a hard struggle to make their way out of the shells.—Rebecca Taylor.

SOILING CATTLE.

The necessities of the time demand a modification in methods of husbandry in the older settled parts of the country. The most prominent and obvious of these is the present of going to the subsistence of stock. It is necessary that more be kept than formerly, and, to do this, new methods of sustaining the animals must be invented. For instance, for a new departure, and, in few short papers, it will be the aim of the writer to discuss this subject under the general head of soiling cattle. The careful attention of the farmers is invited to the points presented, because they are in full sympathy with the recognized needs of intelligent husbandmen.

This subject is often referred to in a general way, but, so far as the writer knows, no systematic discussion of it has appeared in our local press. References to soiling, when made, convey no well-defined ideas of what is actually meant by the system; nor have the methods or processes by which the method is or can be applied in practice, been stated. Many farmers cultivate fodder-corn for their cows,
and out and deliver it to them in the pasture fields, and suppose they are thus practicing the soiling system. At best this is but partial soiling, and is not what is meant by the soiling system in the hands of those who practice it methodically.

Much of what I may say on this subject will appear like quite elementary teaching to those who are acquainted with it. It will be that sort of teaching, because that is the kind needed. Only a few know what the soiling system is. Systematically applied, it is a new and better method than the old, and that it may be understood, the elementary principles must be first stated, as in developing any other method a System.

What should be understood by soiling cattle is keeping them in the stable all the year round, with short daily liberty in a yard similar to that which dairymen in our vicinity give the cows in winter when not allowed the liberty of the fields. Soiling cattle does not contemplate or allow pasturage in the fields at any season. There are a few dairymen in Bucks county who practice the system in its strict sense. But the number who practice it in the partial way alluded to is large in this and the adjoining counties.

In no form of business will it be proper to state some of the principal attained facts developed in the experience of practical dairymen who have tried the system, a few of which are as follows:

1. It saves land.
2. It saves fencing.
3. It economizes food.
4. The cattle are more comfortable and in better condition.
5. They give more milk.
6. A large increase of manure.

The only offset to these and other advantages is the labor of raising and cutting the food, and feeding and taking care of the cattle.

This additional labor is of the bugbear that frightens farmers, and contemplation of it makes cowards of us all. Farmers generally admit the advantages without argument, and are deterred from giving the system a fair trial through fear of the extra labor it involves. But if the farmer can be reasonably assured that such advantages as are claimed can be realized, the enterprising dairymen should no longer hesitate.

The bare statement of the advantages without argument or elaboration will not convince doubters, or lead those who admit them to put them in practice. Let us see, then, what can be said to substantiate the claims of the advocates of soiling.

It saves land. In relation to this claim all experience proves it. The only difference found is as to the amount of saving which results. These differences probably arise from variations in the quality of the land and its ability to sustain heavy pasturage. Again, lands used for soiling may be differently cultivated. It is evident that the amount of food raised on an acre of enriched and moved pasture, and an acre devoted to cultivated crops, must be quite different, and will account for the differences in estimates given of the saving of land. In any case the economy is sufficiently great and should be decisive to the mind of any reasonable man.

Properly enriched and cultivated land will produce two or more soiling crops in a year, and thus greatly increase the amount of food it will yield. Those who practice but the partial soiling method see at once what an increased amount of food can be raised on a small surface. Some assert that the saving is as three to one; others as five to one, and some go even farther and assert that one acre kept for soiling will go as far as three, five, or more kept for pasture. For all practical purposes the testimony is sufficient that on all farms where the land is arable, the economy of surface gained by soiling is very great.

The saving of land will allow the stock to be kept or moved further and less to be bought. If no more stock be kept, they may be kept on half the product of the farm, and the other half may be sold. The farmer therefore has his choice to increase his stock, or sell half his crops. The farmer who now keeps, say ten cows, and pastures his land to death, can, by the soiling system, keep the ten cows better on ten acres than he now keeps them on his whole farm, and raise better crops on the remaining land. Farmers who think they have out land enough that the economy of land secured by the soiling system would practically triple or quadruple the size of their holdings. This is the experience of all who have tried the methods, and this kind of experience has been so uniform that it cannot be doubted. The average farmer, therefore, has in his power at his option to increase the area and productiveness of his farm by the adoption of the soiling system, and by thus economizing his surface, save land.—A. M. D., Doylestown, Pa., in Weekly Press.

SMOKE HOUSE AT SMALL EXPENSE.

Every farm should count among its out-houses a good smoke-house. The necessity for such a house is too obvious to call for argument at this time. If the farm be small one, and the meat produced therein is for home consumption only, a large and elaborate smoke-house is, however, not required; in fact, a cheap one serves every purpose, and when meats are to be smoked in a small way an expensive building is a needless extravagance.

The object in smoking meat is to expose the meats to the action of creosote and the vapors resulting from smoldering wood. This is done not only to gain surney flavors imparted by the smoke, but to gain the preservative principle given by the creosote. All that has been said about this is space enough in which to hang meat, that can be filled with smoke and shut up tight, with conveniences for suspending the pieces to be cured. In some smoke-houses the fire is made in the centre of the house on a stone slab; in others the fire is placed in a pit in the ground about one foot deep; again the fire oven is built outside the smoke-house.

The very cheapest form of smoke-house is what is termed the hoghead or cask-house. This is made, as the name suggests, of a hoghead or large cask. It is familiar to old men, but is again described for the benefit of beginners who have no dollars to spend on the construction of a regular house. First, dig a small pit; place a flat stone or a brick across it, upon which the edge of the cask can rest. This pit ought to be about one foot deep and nearly one foot wide, and say three feet long. Remove both head and bottom of the cask. Pass two cross-bars through holes bored in the sides of the cask near the top; upon these rest cross sticks from which the hams are suspended. Then replace the head of the cask and cover with sacks to confine the smoke. Set the cask so that half the pit will be beneath it and half it outside. Place some live coals in that portion of the pit outside of the cask and feed this fire with damp corn cobs or hardwood chips. The pit must now be covered with a flat stone, by which the fire may be kept fed, but may be removed when necessary to add more fuel. This fire must, of course, burn slowly so as to produce smoke and not flame.

When a larger house is required then a cask affords, this may be constructed of wood or bricks, as best suits the convenience of the builder. It is a wise plan to build the fire-place of bricks, then there is no danger from fire. A favorite plan is to have fire ovens of brick built on each side of the house; these are constructed upon the outside, but spaced left between the bricks on the inside, through which the smoke escapes. The outer part of the oven or pit from which the fire is fed may be made of an iron door or a piece of that material. When the fire is kindled in these ovens the doors are closed, and the smoke has no means of escape except through the inside spaces. Being so confined, the fire of necessarily slowly smoulders, making a steady smoke. Smoke-houses with these outside fire ovens are very clean, there being no ashes inside. The doors to such a house may be of cement or of hard brick laid in cement or mortar. These outside ovens, by the way, can be fitted to any kind of a smoke-house by cutting the necessary openings at the bottom of the walls and protecting the wood work with strips of sheet iron around the bricks.

Meat, to be perfectly smoked, must be continually surrounded by smoke produced from material that imparts a pleasant odor. Corn cobs and good hickory wood furnish admirable material. While the smoke ought to be continuous the smoking process should not be hastened to such a degree as to raise the temperature sufficiently to make the fat ooze out of the meat or prevent the creosote in the smoke from thoroughly permeating it. In a word, the fire must neither be permitted to die out nor to blaze up. It is the slow combustion of the wood that permits the escape of the wood acids which impact their flavor and antiseptic properties to the meat.

Old smoke-houses should be thoroughly cleaned previous to use, and the conveniences from which meats are suspended looked after and repaired to prevent their breaking down and bringing the meat in contact with the fire and ashes.

THE SUGAR-BEET.

The Department of Agriculture at Washington appears to have assented that the prices of money offered by the Department to stimulate the production of the sugar-beet and Chinese sorghum in this country were made without authority from Congress, and were therefore illegal. Payments have, there-
fore, been suspended for the present, and in all probability the matter will be acted upon at the ensuing session of Congress and favorably. We do not ourselves entertain any high expectations of valuable results being likely to be reached by the stimulants of that sort. Still, we always regard with favor any good measure that will encourage the Department of Agriculture to encourage the production of such crops in the United States.

As regards the sugar-beet, it is rather a reproach upon the enterprise of Northern agriculture that the Mormon colony in the territory of Utah, under the vigorous depasture of Brigham Young, succeeded in producing in its own supply of domestic sugar from the beet 20 years in advance of any successful effort in the same way in any of the Atlantic States. This was done before the opening of the Pacific railroad, and at a time when the Mormon project was despotically bent upon making the Mormon community entirely independent and self-sustaining. The example thus set has since been slowly imitated by voluntary enterprise in the States of Delaware, New Jersey, Indiana, Illinois and Maine, with irregular and varying results. Perhaps the case would have been different but for the unfortunate attempt of the Department of Agriculture to force a sudden development of the sugar production on an immense scale by means of a rapid and widespread cultivation of the Chinese sorghum, which proved a lamentable failure. Since that date the Department has given encouragement to efforts at sugar-making from Indian corn and other crops, the general effect of which has been to weaken the culture of the sugar beet and of the tropical sugar cane, respecting the saccharine properties of which staples there has never been any doubt whatever. Our own judgment is that if the attention of the country as regards sugar making could be concentrated upon those two crops—the one for the Gulf States and the other for the north and west—the result would be far more gratifying than could possibly be attained in any other way. The consumption of sugar in the United States is enormous, and as a vast majority of it is imported from foreign sources, which take but little merchandise from us in return, this one article has mostly to be paid for by shipments in American gold and silver, a process entirely too one-sided to be at all pleasant or profitable—\textit{Germantown Telegraph}.

\section*{OUR LOCAL ORGANIZATIONS}

\subsection*{LANCASTER COUNTY AGRICULTURAL AND HORTICULTURAL SOCIETY.}

The regular meeting of the Lancaster County Agricultural and Horticultural Society was held in their room on Monday afternoon, December 4th, with the following members present: Joseph F. Witter, Paradise; J. C. Litigal, Gap; M. D. Kennedy, Crosswell; Casper Hiler, Constance; H. M. Engle, Marietta; J. M. Johnson, city; John W. Landis, Manor; R. F. Difendorfer, city; C. A. Gast, city; John Miller, Warwick; C. L. Hunsicker, Manheim; W. B. Paxson, Coatesville; James Wood, Little Britain; Ephraim S. Hoover, Warwick; Henry Herr, West Hempfield; Cyrus Neff, Manor; W. C. Clark, Chestnut Level; S. P. Eby, East Earl.

On motion the reading of the minutes of the previous meeting was dispensed with.

\section*{Crop Reports.}

Casper Hiler said the fruit crop had been a very poor one, but the corn crop had been very good—one farm near the town had a yield of 90 bushels per acre. Potatoes were very scarce, notwithstanding a good crop had been reported. Grain looks remarkably well.

Mr. Engle also reported a scarcity of apples. The annual meeting of the society was held in good condition, notwithstanding the lie was found in some localities. He thought the scarcity of potatoes was due to the fact that the usual amount was not planted. The rainfall for November was three-fourths of an inch.

Mr. Paxson reported the wheat and clover in good condition to stand the winter season.

Mr. Landis concurred in the previous remarks in regard to the wheat. He said he did not know when the tobacco market was so dull as at present—not a single crop has yet come in. He reported a peculiar fact in regard to the grass—"it looks as green and fresh as it does at any season of the year."

Mr. Miller was another farmer who did not know of any tobacco being sold. He concurred in the remarks of the other gentlemen in regard to the wheat and clover.

Mr. Witmer had not heard of any sales of tobacco, but he knew one man who was stripping. He had a very good set of grass this fall.

Experimenting with Fertilizers,

Casper Hiler read a brief paper on the subject of the experiments with fertilizers on potatoes, which is published below:

April 21st, planted 3 rows, each 40 yards long, with White Elephant potatoes.


2. Fertilizer, soil N. 2: row No. 1. 1 part of white phosphate of potash. 1 part disposed bone and 1 part acid rock.

3. Fertilizer used on row N. 3: A good dressing of rich, well-rooted stable manure.

The applications of the special fertilizers was liberal—half ton to the acre; cost on row N. 1. $25 per acre; on row No. 2. $15 per acre; stable manure so valued that cost of the manure attributed to the potatoes contained therein. In this experiment it appears that the great increase was owing largely to the use of the nitrates. The White Elephant is a very prolific variety, and in quality it comes nearer to the old Merrow than any of the newer varieties lately introduced.

Mr. Witmer said he had been using commercial fertilizers for the past few years on potatoes and found them to produce better results than he was able to obtain from stable manure.

On motion the thanks was tendered Mr. Hiler for his experiments.

Mr. Engle said it would be a very good plan if more of the members of the society would experiment more than they do with fertilizers. The question of fertilizers was then discussed at some length by several of the members.

\section*{Answering Questions.}

\subsection*{At what age should stock cattle be put up for feeders?}

This question had been referred to Mr. E. S. Hoover, who answered it by saying that you should begin to feed at the age of 21/2 years. His reason for so thinking was that at this age, you have a cow ready to calve, in good condition to grow and increase in fat. He has had some experience in that line, and came to the conclusion that this was the proper age at which to begin to feed cattle.

Mr. Litigal said the idea now prevalent to get cattle that would mature early, and he thought the cattle of the future would be of that kind. Mr. Paxson said it would be a different thing to have good beef cattle. In order to get a great weight we must procure cattle which will grow while we are feeding.

This impression was held by other members of the society—Mr. Engle stating that the cattle should be fed somewhat as austin how, as soon as they will come to cut.

Mr. F. R. Diffendorfer, to whom had been referred the question, "Do farmers eat too much?" reported progress.

On motion a resolution was read on a paper on the subject of the proper treatment of beef cows. It was important, he held, that warm and comfortable quarters during the winter should be had. This is the great secret of success, for cows thrive best the less they are exposed to the cold weather. The animals should not be allowed to gorged with water—not to freeze at the freezing point. Regular hours of feeding and a frequent change of nutritious food should be observed. Cotton seed meal was a very good food for cows, and this might be fed in conjunction with other articles.

The article was discussed by H. M. Engle and others, all of whom held substantially the same views as those put forward by Mr. Paxson.

The president said he hoped that members would not forget that at the next meeting of the society officers would be elected for the ensuing year, and hoped to have eleven members.

The following questions were referred: Is it advisable to use constantly the so-called cattle powders? H. M. Engle. Should rentals be established in Lancaster county? to Joseph F. Witmer. What would be most profitable as a substitute for cotton corn stubble? to Johnson Miller. What is the most profitable fertilizer, clover, homestead manure or artificial fertilizers? to W. B. Paxson.

On motion, the secretary was authorized to secure the services of some person to deliver a lecture before the society.

Adjoined to the second Monday in January, 1885.

\section*{POULTRY ASSOCIATION.}

The Lancaster County Poultry Society met statedly, Monday morning, Dec. 4, 1883, in their room over the City Hall, with the following members present: George A. Geyer, Florin; J. B. Lichty, city; John E. Schum, Ephraim; D. T. Trisler, city; E. R. Difendorfer, city; C. A. Gast, city; H. H. Tabby, Littitz; J. B. Schultz, Elizabeth, town; H. D. Shults, Elizabeth; Jesse Brooks, West Willow; Dr. E. H. Witmer, Neffville; J. M. Johnson, city; Peter Brunner, Mount Joy, and H. W. Paxson, city.

The minutes of the preceding meeting were read and approved.

J. B. Brunner, of Mount Joy, August Lang, of Pittsburg, and Simon Tabby, of West Willow, were nominated and elected to membership of the society. The nominations were confirmed in nominations for officers, the society during the ensuing year: President, H. H. Tabby, Littitz; J. B. Lang, city; George A. Geyer, Florin. Vice Presidents, E. M. Greider, Mount Joy, and T. Frank Evans, Littitz. Corresponding Secretary, Joseph H. Trisler, city; Recording Secretary, J. B. Lichty, city; Treasurer, John E. Schum, city. Executive Committee, Peter Brunner, Mount Joy; J. A. Stover, Schnecke; Cass Lippold, city; Wm. A. Schoneberger, city; Dr. E. H. Witmer, Neffville; A. S. Flowers, Mount Joy; S. E. Martin. The nominations closed, and the candidates will be balloted for at the next meeting.

The secretary stated that he had secured Exeter Hall for the exhibition, with storage room for the traps, for $80.

Letters had been received from Jesse, Birkett Road, the judges elected by the society, stating that they would accept, and be in Lancaster on time.

The secretary also stated that by completed
THE LANCaster FARMER—

AGRICULTURE.

Ivory Wheat and Millo Maize.

J. T. Heedinuer, Commissioner of Agriculture of the State of Georgia, in a report for 1812 and 1813 states the claims of the "Ivory Wheat" and "Millo maize" to a place on the list of profitable food crops. These are both members of the large family of sorghums, of the class that have for many years been cultivated in Central Africa and other tropical countries for bread purposes. Analyses made to gain the relative theoretical of these two varieties of ordinary wheat, show that there is scarcely more difference in the proximate analyses of "Ivory wheat," as called, and Dallas or Red May than appeared between the analyses of the latter two varieties of ordinary wheat. The Ivory maize is a very interesting appearance (flush formers), slightly less of starch and more of fats (fat and heat producers) than either of the true wheats. The Millo maize has considerably less of the albuminoids or flesh forming substances than either of the others, being about equal to that Indian corn in this respect from the flue wheaten flour, is by no means unpalatable, and, as indicated by analysis, is probably equally as nutritive to any. For making the forms of bread for which buckwheat flour, rice, and the related things are used, it is employed, viz: waf- fles, griddle-cakes, muffins, etc., the Ivory flour seems to be well adapted." Mr. Henderson does not speak from actual experiment of the bread qualities of the Millo maize, but is of the opinion that in this respect it will be found to resemble Indian corn. He claims that both of these plants are enormously productive, rather indifferent as to roil and culture, and almost independent of the seasons after the soil has been prepared and the crop started off. Owing to the extraordinary seasons of this year it has not been practical to test their capacity to resist drought, and a sufficient number of reports of experimenters has not yet been received to form any decided conclusions in reference to productiveness under ordinary circumstances. But Mr. Henderson is of the opinion that the reports will show that both maize are far better than the grain crop now grown in this State. The Millo maize is quite late in maturing, requiring favorable culture and the full season from planting time (April) until frost to mature in north Georgia; but this difficulty will be easily met by the adding effect of planting home-grown seed a few years. This plant appears to be unusually productive of foliage, will bear two or more cuttings, and promises to be very valuable for sowing and general forage purposes.

Economy on the Farm.

The farm, in all the various details of rural and domestic life, prudence and a just economy is the most important lesson that can be learned. The earth itself is composed of atoms, and in the most gigantic fortunes consist of aggregated items, insignificant in themselves individually considered, but majestic when contemplated in unity. There is no way in which need not be overcome. Debt, with but little hope of its removal, is a millstone dragging us down and crushing the life-blood out of us. Be careful, therefore, in incurring any pecuniary responsibility which does not present a clear deliverance with the advantages which a wise use of it ought always to insure.

A farmer who purports a good farm and can pay down one third of the price, give a mortgage for the other two thirds, and possesses the heart and resolution to work it faithfully and well, enters upon the true path to success. He will labor with the enthusiasm of one who has first been forgiven, who will bless his indebtedness and bring him nearer to the goal when he shall be disqualified and becomes a freeholder in its most cheering sense. But without due economy in every department, in the dwelling, as well as in the barns and in the fields, this gratifying experiment goes. It may be unnecessary to a man in life, or may be indefinitely postoned. A prudent oversight, therefore, over all the operations of the farm, in order that everything may be done that ought to be done and nothing he wasted, will exert a powerful influence in placing a family on the high road to an early independence.—Chicago Telegraph.

Rules Adopted by the Hay Trade.

Following are the rates adopted by the Hay Trade in New York, Brooklyn, and Jersey City under the directions of the Manhattan Hay and Produce Exchange:

No. 1 Prime Hay—Shall be pure timothy, properly cured, bright, natural color, sound and well baled.

No. 2, or Good Hay—Shall be timothy, not more than one quarter mixed with red top and blue grass, properly cured, bright color, sound and well baled.

No. 3, or Medium—Shall include all timothy not good enough for No. 2, proportionately mixed with blue grass, red-top and clover, sound and well baled.

No. 4, or Shippin Hay—Shall include all hay not good enough for other grades, and may be natural meadow, free from wild or bog, and must contain over one-third clover, sound and well baled.

Clover Hay—Shall be medium grown, properly cured, good color, sound and well baled.

No. 6 Feed, or Rejected Hay—Shall include all hay badly cured, muddy, stained or unsound in any way.

Rules for Inspection—All certificates of inspection shall give the number of bales and grade of each bale inspected.

The expenses for inspection shall be 10 cents per ton, and when requiring less than 2 cents per ton for grading, weighting, and unloading cars of hay, the expenses to be paid half by the buyer and half by the seller.

All hay or straw shall be pressed with wood not to exceed three pounds per bale. All hay or straw wooded in excess of three pounds per bale, the total weight of wood will be deducted. This rule will take effect January 1, 1883.

Effects of Broom-Corn on the Soil.

Professor Shelton, of the Kansas State Agricultural College, gives his views concerning the corn culture of broom-corn on the fertility of the soil in a recent paper, the "Industrialist." He says:

"Ultimately, the effects of such crops as broom-corn, hemp, flax and perhaps easter-beans, which furnish no stock feed, or very little, will be seriously felt in Kansas in the loss of fertility sustained by these crops upon which they are cultivated. The fact that broom-corn is a hoad or cultivated crop makes it much less dangerous than is flax, which receives no cultivation during the period of its growth. The general rule for every farmer who has a farm 100 acres or larger to scorch his land 3 times in 5 to 10 years upon a considerable scale that cannot be used wholly or in good part as stock feed. This has been the rule of really successful farmers the world over, and at a near day will be the rule in Kansas also."

The Agricultural Interests of the Country.

Washington, November 23.—George B. Loring, Commissioner of Agriculture, has submitted his annual report to the President. Two a half million packages of seeds have been distributed and 200,000 copies of special reports printed by the
The statistical division estimates the following as the yield of 1882: Corn, 1,650,000,000 bushels; oats, 470,000,000 bushels; barley, 45,000,000 bushels; rye, 20,000,000 bushels; buckwheat, 12,000,000 bushels. The chemical division has devoted its work largely during the year to the investigation of the sugar-producing plants, and its labors have been most successful. The work of the division was submitted to the National Academy of Science for investigation by that body, and a committee was appointed for that purpose. The report of this committee contains a review of the results of the work of the division, and in addition, a special publication. The report of the veterinary division showed less disease among domestic animals (Texas fever excepted) than in many. Examinations into the fibers of wool and cotton have been made, and two species of Colorado, for use in artesian wells. In the forestry division, increased activity has been shown, a special agent having been appointed to collect information west of the Mississippi. The report will soon be submitted.

Small Potatoes.

At a recent session of the San Francisco (Cal.) Academy of Sciences, Mr. J. J. LENNON, who spent six months in the mountains in the Mexican frontier among Apaches and cowboys, announced that he had brought up five boxes of new plants, and that he had found two or three new kinds of native potatoes, all of which were growing on an average of 10,000 feet high. They were about the size of walnuts. This was regarded as an important find that might throw some light on the nativity of that potato, as the real home of the "Rumphy," as they are familiarly styled, has not yet been established. They were reported to have been found in Peru in 1850. Sir Walter Raleigh found some and sent them to England, but they have only been known to the poor man on his table for a century.

Preserving Garden Flowers.

The time has arrived when it is wise to part with many garden pots which have given us so much pleasure during the growing season. Such partings always bring regret; and in spite of "nowhere to keep them," people will try if something cannot be done at any rate. It is believed that it is not so much the individual cold which kills usually hardy plants, as it is the drying influences of a very cold atmosphere, and hence many find a very little covering sufficient to save the plants, if the covering is kept, to keep them from dying out.

We know, for instance, that a raspberry or a grape vine, which would probably be destroyed if left bare ground in its natural way, can be safely preserved by being lopped just beneath the surface; and it is found that roses better over to the ground and covered with earth, so shaped as to throw off the water, will enable them to get through the winter unscathed. A friend once told us that verbenas were much harder than supposed. He put dry leaves over the bed and then covered the leaves with a board, and they did not injure by the hardest frost.

The above is sufficiently important, however, that green succulent matter would not by confinement, as well as hard wood get injured by frost; and we would suggest to all who may be disposed to preserve anything in this way the importance of cutting away half ripe wood or succulent green foliage before enrolling the plants for winter.

Pamphlet flowers, the ostrich leaf like spikes of which are so commonly seen in gardens, cause much discussion as to the best means to protect. Some take them up and put them into a tub of earth and will keep them through the winter, but those who succeeded in keeping them over winter in the open ground have finer plants and larger and more numerous spikes. Some of our neighbors have turned a barrel over the stocks to keep out the water, flinging in dry leaves to prevent the wood from rotting, and sometimes the plants will be lost treated in this way, generally it is a success. The "rocket" plant does well on either of the plans named for the pamphlet grass.

Dahlias, tuberoses, glacuro, and such like summer flowering roots, have no trouble at all. When they are dug for the purpose of doing so soon as the frost has injured their flowers and spoiled their blossoning for the season, and, after drying a little, put them in a little moderate and dry place secure from the roots. --Germantown Telegraph.
ing through the collard. Summer one hour, with half a sliced onion and four tablespoonsful of soaked rice in it, or until the rice is soft. Be careful that it does not stick. Strain through the soup-lice into the pot, add pepper and salt, if needed—finally a cup of hot milk in which it has been stirred and cooked for one minute to two beaten eggs.

**STewed Fillet of Veal.**—Lard the fillet on top with strips of salt pork; lay a few slices of corned ham in the bottom of a saucepan; on these the veal; cover with sliced ham and a cup of pepper, salt, and a pinch of mace; pour in a cup of yesterday's soup, weakened with water. Cover closely and stew two hours, turning the meat at the end of the first hour; take up and keep the meat hot over boiling water; add some browned flour and a tablespoonful of wine to the saucepan when the veal has been strained out, boil fast and hard until it is thick, and of a glassy brown. Pour on the veal, set in the oven, the larded side upward, and shut the door for a few minutes to "glaze" it. Garnish with light and dark green celery tops. Lay the ham about it.

**Steak.**—Boil in plenty of salt water for twenty-five minutes. Drain chop very fine, put back in the saucepan with a teaspoonful of sugar, a little pepper, salt, and mace, and a few spoonfuls of milk or cream. Beat and toss until it is like a thick gravy cat, and pour out upon slices of fried bread.

**Boiled Beets.**—Soak all night. In the morning, put in a saucepan, cover with water; scald over them, when dished, a little good drawn butter.

**Mashed Potatoes.**—Prepare as usual, without buttering.

**Queen's Toast.**—Cut thick slices of stale baker's bread into rounds with a cake-cutter and fry to a nice brown in hot oil. Dip each slice into boiling water and drain off the grease; sprinkle with a mixture of powdered sugar and cinnamon, and pile one upon the other. Serve a sauce made of powdered sugar, dissolved in the strained juice of a lemon and thinned with a glass of wine. Put a very little upon each pound. Butter sauces are too rich for queen's toast.

**Brown Grits Soup.**—Cut each grit into three pieces, and put on to boil in stock made of the remainder of your mutton soup, diluted with water and strained. Simmer all together one half hour.

**Chop the videog.**—Put the liver, Make what is called a "coon", by putting two tablespoonfuls of flour to a pint of wine, and it bubbles, stirring in a tablespoonful of browned flour, and continuing to stir until they are well mixed and smooth. Add, spoonful by spoonful, half a cup of boiling soup, then the pounded liver; the ginger, juice of a lemon, and a half glass of brown sherry. Stir all this into the soup, and boil up two hours. Have in the tureen the yolks of four hard boiled eggs, each quartered with a keen knife, and pour the soup over them.

**Mixed Turkey and Eggs.**—Cut all the meat from the bones of the turkey. Put the bones, skin, skin and bones of the turkey, and six quarts of cold water. Set at the back of the range, and let it simmer down to two quarts. Season, and set way in your stock-pot.

Divide the meat intended for to-day into four large pieces, season, and start cutting it, and the skimmed gravy: add as much drawn butter; season the beaten eggs: pepper and salt; put in the mixed turkey; set back over the fire, and stir until very hot. Cover the bottom of a pudding dish with wine crumbs, form the mixture; stew crouns on top, and bake to a light brown in a quick oven. Serve in the bake dish.

**Steamed Potatoes.**—Peel and cut into small squares. Lay in cold water half an hour; cool under cold water; a little salt. When done—or about half done, if they get cold, and when this begins to simmer, a tablespoonful of bolet rolled in flour, pepper, salt, and a little minced parley. Boil gently one minute, and pour into a dish.

**Celery.**—Wash, scrape, and cut off the green leaves. Arrange the best stalks in a celery glass. Put two or three green pieces into to-morrow's soup-stock while boiling; and if you have time eat up the rest into short bits, and put in a jar or wide-mouthed bottle of vinegar to keep, and make a most palatable pickle.

**A Plain Rice Pudding.**—One large cup of rice, 2 quarts of milk, 8 tablespoonfuls of sugar, 1 teaspoonful of salt, 1 great spoonful of melted butter; antmeg and cinnamon to taste. Soak the rice two hours in a pint of milk. Add, then, the rest of the milk and the other ingredients. Bake, covered, two hours; brown, and eat cold.

**Live Stock.**

**Cotton-Seed Meal as Stock Feed.**

The Commissioner of Georgia says that the true policy of the farmers of Georgia is to encourage the manufacture of cotton-seed oil at such rates as may prevent sawmills from using the oil, and thus make it practically, as food for stock. Chemical analysis proves that the meal is exceedingly rich in both flesh-forming and fat-forming constituents. The one defect to be overcome is the fact that this substitute is too concentrated and must therefore be fed in comparatively large quantities to keep its weight in order.

**Boil Potatoes.**—Boil for an hour and a half. Drain, dry them in the oven for half an hour. If you like, you may rub them with butter and brown them; they are then called "parched potatoes." Serve them with a sprig of parsley on each plate.

**Cotto.**—Put one quart of milk in a small saucepan, add a level tablespoonful of flour, and cook until thick. Then add one quart of cream, and season with pepper and salt, according to taste. Pour over the meat, and let it simmer for half an hour. This will keep over the fire for several hours. It is a dainty, nutritious dish; and in England their wool has, now a separate class at the fairs.

**Pasting and Soiling Hogs.**

The hog is a grass eating animal by nature, and its health is therefore promoted by the use of grass as a part of its food. The grass gives bulk and porosity to the contents of the stomach, and thus aids digestion. If the hogs are to be pushed in fattening, finishing them off in the fall, then you may be kept in a dry room or yard, and the green, uncooked grass brought to them each day and given in three small feeds, in small rakes over the troughs. In this way they will not get much under food, and what falls out of the rack will drop into the trough, and thus be saved. Some years since, we found the best plan in feeding clover to hogs in a pen, was to run it through a straw-cutter, and then feed two quarters of the cut clover, mixed with its ration of meal, to each pig three times per day. We adopted the plan of cutting the clover in the morning, and mixing the proportion of meal with it that we desired the hog to have that night, and feeding it the next day. We then fed it in a yard 40 by 60 feet, and let it roll and come in contact with the meal. We found that the hogs now grew more rapidly than we ever before have experienced, and we were able to sell our hogs to the large market at a price that has never been known before.

**Growth of Cows.**

In order to winter a cow well, and have him come out a fine, shaggy, six-year-old animal in the spring, particular attention must be paid to his feeding during the first summer and autumn. If the mare's milk is at all deficient to keep the cow in good flesh and thriving steadily, it is best to have recourse at once to cow's milk. Skimmed milk answers very well for this purpose, especially if a little dry-seed jelly, oil with pepper, or one or two spoonfuls of sugar be added thereto. The table-spoonful of meal is not absolutely necessary, if used, when the milk is plenty, and morning and night, is enough to begin with when the calf is a month old. This can be gradually increased to a pint per day, by the time it is six months old, or double this if the calf be of the large farm breed. If it be done in this manner, the calf is sure to thrive.

Oats, also, may be given as soon as they can be eaten. Begin with a half pint night and morning, and go on increasing, according to the age and size of the animal, to four quarts per day. These, together with the meal above, should be supplemented with a couple of pounds of wheat bran, night and morning. The latter is excellent to prevent worms, and helps to keep the bowels in good condition.

Cobs should not be permitted to stand on a plank, cement, paved, or any hard floor the first year, as it is injurious to the legs, and it is sometimes the principal cause of running and jumping. Unless the yard where cows run in the winter has a sandy, or fine, dry, gravelly soil, it should be well littered, so as to keep their feet dry. Mud, or soft, wetish ground, is apt to make tender hoofs, no matter how well bred the calf may be. One reason why they break trusses and get their legs crooked is this, that they do not get food and legs in another in hoof, bone, muscle, and action, is be- cause it has a dry limestone or silicious soil. When the mare is at work, do not let the calf run with her, and if she comes back from her work beaten, allow her to get cool before sucking the colt, as her overheated milk is liable to give the foal diarrhcea.----

**National Live Stock Journal.**
Sheep.
American shepherds have much yet to learn in regard to the management of their flocks. For example, the sheep in Siberia are never exposed to much rain. Shelter and shade are provided for the flocks, and when this cannot be obtained for that is known to be injurious to the fleece. The greatest possible care is taken in the breeding. Men of experience are employed to go from farm to farm to examine the sheep and select the best rams that can be found. The ewe is examined as to their fleece-bearing properties, and all but the very best are sold off. The whole economy of the sheep farm is as perfect as intelligence and industry can make it. A ton of wool is worth $750 at 35 cents a pound or $330 at 25 cents. A ton of wool is worth about $750. The sheep feed on the best grass and the grass is of the finest quality, about the same for each, and is thus 25 times more for wheat and nearly 50 times more for corn than wool. This is worth considering, and shows how much better it is to turn corn into wool than to sell it.

Cattle Range of Wyoming.
The great cattle range of Wyoming, under the military protection of Fort McKinney, is about 800 miles square. In this area are now grazing 5,000,000 head of cattle, worth $3 per head, amounting to $12,000,000, and in which three millions of all that is known to be injurious to the fleece. The greatest possible care is taken in the breeding. Men of experience are employed to go from farm to farm to examine the sheep and select the best rams that can be found. The ewe is examined as to their fleece-bearing properties, and all but the very best are sold off. The whole economy of the sheep farm is as perfect as intelligence and industry can make it. A ton of wool is worth $750 at 35 cents a pound or $330 at 25 cents. A ton of wool is worth about $750. The sheep feed on the best grass and the grass is of the finest quality, about the same for each, and is thus 25 times more for wheat and nearly 50 times more for corn than wool. This is worth considering, and shows how much better it is to turn corn into wool than to sell it.

Training Horns.
If it is desirable to straighten a horn, you may frequently scrape with a piece of glass, or a knife, the bellow side, which will cause it to grow faster on that side; but, in that case, it must not be scraped deeply, for then it becomes weaker on that side, and will be turned for the weaker side. Some scrape the side towards which they wish to turn it, and others, who wish to turn it at once, and then scrape the opposite side just enough to make it grow faster, and that will turn it towards the desired side. If you wish to turn a horn up, scrape on the under side just enough to make it grow faster on that side. A very bad horn can be turned by rubbing it with fine sand paper, and then with pumice stone, and oiling it. But this artificial manipulation of horns is seldom necessary. The horns of well-fed cattle will generally grow in a more symmetrical shape if left alone.

The hair is sometimes oiled to give it a glossy appearance, but the best gloss is put upon the hair by rich and appropriate feeding. Nature, under proper conditions, does this work best.—National Live Stock Journal.

Poultry.

Poultry Nonsense.

It is safe to say that more silly writing finds its way into print on the subject of the poultry yard and the care of poultry, than upon any other that can be named. As a rule this nonsense is uttered by amateurs who have lately taken up the business of poultry trying to get a few hens for dimes and unable to distinguish a chicken from a turkey. The silliness does not all make its appearance in the country newspapers. Poultry journals, that are supposed to know and ought to know a good deal about poultry, are equally at fault. I know of no raising, admit articles into their columns that are simply advertising in their ignorance. We remember, for instance, one of the best known poultry journals contained a long article which was intended to prove that corn should not be fed to domestic poultry. He neglected to say that it ought to be fed exclusively to ducks by himself. The editor of that journal expressed no opinion of his own about the matter, probably because he knew not better himself.

In a well-known agricultural newspaper, published in a neighboring county, the Bools County Intelligencer, we saw this:—"The best way to prevent or cure cures in chickens is to commence feeding them on outdoor grain when they are old enough to swallow them—say two or three weeks old. The effort made by the chick to swallow the whole grain will kill the little red worms in the throat, which are the cause of the cures, and it is easier and safer to kill the worms in that way than to try to remove them from the throat with some sort of a horse pipe, as is sometimes done." The learned poultry editor of the above journal must have unusual luck in growing chicks which at the age of two or three weeks are capable of swallowing whole grains of corn. But even if he ever achieved that feat it is useless to state such a curious fact or reduce the flock in the fall to suit winter quarters— all have their charm, and exult the interest and sympathy of their faithful attendants. There is much complaint among physiologists that American ladies have health and beauty earlier than they ought to want for want of sufficient out of door air and exercise, and this occupation has, among his other benefits, that of sending them daily abroad into the pure, outer air, and inducing a love for rural, natural beauty not found among those whom no such beauty tempts from the fireside.—Littledy Int. Journal.

To Fat Enows or Chickens in Four or Five Days.

Set rice over the fire with skimmed milk, only as much as will serve one day. Let it boil till the rice is quite swelled out; you may add a teaspoonful or two of sugar, but it will do well without. Feed them three times a day, in common pans, giving them only as much as will quite fill them at once. Give them no water, for the purpose of curbing their appetite, for there is so much sugar in the bowl, that no nourishment can be conveyed to the foals, as that prevents them from fasting. Give them clean water, or the milk of rice to drink; but the last will be the latter is perfectly soaked, the better. By this method the foal will get a clear whiteness which no other food gives, and when it is considered how far a pound of rice will go, and how much time is saved by this mode, it will be found to be as cheap as barley meal or more so. The pen should be daily cleaned, and no food given for eighteen hours before poultry are killed.—Poultry Jour.

Winter Rations for Hens.

Fanny Field, who is famous for her success in making her hens lay in winter, tells the Prairie Farmer, "I serve for them at this season of the year rice boiled and mashed up with wheat bran, or oat meal scalded with skim milk; or refuse from the kitchen boiled up and the soup thickened with bran; and when sweet apples are plenty, we boil them, and mix with corn meal—sometimes one thing and sometimes another; we don’t want the main thing all the time, and the hens don’t believe in it either. I don’t think that my hens need the noon feed because they are hungry, but I give them to make it value, and to keep them out of mischief, and to keep them warm at night. In winter I keep the pens under glass, and let them dig it out. This luncheon is generally oats or buckwheat, and once in a while sunflower seed. At night I generally feed corn, but if I could get wheat cheap enough, I should feed that at least half of the time. My hens have not the least idea of it. The bedding I use is very fine, and is supplied by fastening cabbage heads up where the hens can help themselves. Sometimes, when some body has time to attend to it, I give them a change of green food in the shape of raw turnips or sweet apples chopped fine.
THE LANCASTER FARMER.

[December, 1882.]

Two winters ago I took a new departure on the meat question, and now, instead of fussing to cook it and dealing out a little at a time, I just hang out a piece and let the fowls eat all they want. When they have met within their reach all the time there is, with the strangest）dignity of their eating together, I get cheap meat from the butcher and I am sure I have paid twice over the outlay. Crushed oyster shells, gravel, charcoal and crushed raw bones are kept in the houses all the time. The raw bone is an excellent gumbo, and I have been much pleased with the idea of a little straw out of which I would have thought of dropping from my chickens’ bill of fare. Where the crushed oyster shell cannot be obtained, lime in some other shape will do just as well. One of my neighbors had two of his rooms plastered this fall, and he saved all the old plaster off, and used it in the chicken houses who neglected to get a supply of gravel under cover before the ground froze up, must do the next best—feed their broken dishes to their fowls. Break them to bits of a suitable size, and it will do just as well as gravel. I believe in sailling all the soft food, and I used to put in a dash of pepper, sometimes mustard or ginger, once in a while, and I honestly thought the fowls were benefited thereby; but doubts are creeping in, and I am very much inclined to drop everything except the salt.”

Pekin Ducks.

There are according to the American standard of excellence, ten varieties of domestic ducks, to wit: The Aylesbury, Call Gray, Call White, Cayuga, Creted White, Black East Indian Colored Muscovy, White Muscovy, and the Rozen. Of the Muscovy, the Rozen is probably the most common, but I consider the Pekin as the most profitable. They were first imported into this country in 1773, since which time they have become very popular. Their color is a pure snowy white which makes them very handsome and attractive for small bodies of water or the like. They should have rich deep yellow colored bills and legs and perfectly free from any black spots. They can be raised anywhere that chicken can and do require much water until they are several months old. Their only necessity is a small trough of water, if they have a good grass range. It is a very beautiful sight to see them display in long lines through the grass in search of crickets and other animal matter. They mature very early and can be marketed in July and August at high prices. When they are kept from the weather about three weeks to hatch them out, at birth they are larger and stronger than other varieties and when developed weigh about eighteen pounds to the pair. They lay about one hundred and fifty eggs per year; a hundred per pair, but very little food, as when they have a good meal they will pick up enough to keep them in good condition, especially if they have access to the chicken yard, as they will eat what the chickens waste.—The American Poultryman.

LITERARY AND PERSONAL.

THIRD QUARTERLY REPORT OF THE KANSAS STATE BOARD OF AGRICULTURE.—The Quarterly Report of the Kansas State Board of Agriculture, for the quarter ending September 30, has just been issued. The report contains the area and product of principal crops, by counties, accompanied by market quotations of the Kansas City market for each month from January, 1877, to September, 1883, for the crops of which it is made.

In connection with the statistics on wheat are given instances of extraordinary yields given in each county in 1882, and the names of the varieties which have been the most successful this year.

The following crop tables, is an article from the pen of Prof. E. A. Popenoe, entomologist to the Board, and Professor of Botany and Horticulture in the Kansas State Agricultural College, at Manhattan, on the subject of “The chicken bug and the season,” giving the history of the operations of these pests during the past season, and the reasons why they were less destructive than was anticipated. The synopsis of the reports of correspondents on fruit indicates an unusually heavy apple crop, but most of the larger peach trees were injured severely, and male less than average crops.

The second division of the volume pertains to live stocks. Tables by counties, showing the numbers of each kind of farm animals for both 1881 and 1882, with a comparison, and the present condition of the livestock of the Kansas City market on cattle and hogs for a period covering six years. Mr. J. F. True, of Newman, Jefferson county, contributes an article on the feeding of cattle in Kansas. Mr. True is a well-known breeder and feeder of cattle, and is also a Drovers’ Exchange officer.

A summary by counties of reports of correspondents as to the condition of live stocks follows the article of Mr. True. Among the valuable points brought out in this summary are, the amount of open range, open range per head for the grazing of cattle, sheep and hogs, and their condition. Information given as to whether the herd law is in operation or not, and facts concerning the raising of sheep and swine.

Statements of the number of acres of public lands yet unapportioned, of corrected to date, follow the live stock tables. All of these and the other tables were formed from several reports, and is of much value to those who are seeking homes in the State.

The population of the State for 1881 and 1882, as taken by township assessors, is given in full, by townships and cities, followed by a summary by counties, showing increase and decrease in each county during the year.

Brief reports as to the principal features of the two State fairs held this year at Topeka and Lawrence precede the meteorological data of the quarter, which closes the volume.

The report on the allotments for distribution, and can be obtained by addressing the Secretary, Wm. Wims, Topeka, Kansas, and including the necessary postage, three cents.

HOWE’S LANCASTER CITY AND COUNTY DIRECTORY, containing the names of the inhabitants of Lancaster City and Columbia, together with a Business Directory of Lancaster City and County, to which is added a list of the farmers of Lancaster county and an appendix of useful information. Compiled and published by C. E. Howe & Co., Philadelphia, Pa., 531, Arch street. Price: $1.00. This is the legitimate successor of “Howe’s Lancaster Directory,” and is profusely illustrated in color. Its merits are, certainly, its whole, the best directory of Lancaster county that has ever been placed before the public, including quality of material, letter press, and general arrangement. The paper, type, and print are far superior to any heretofore used for such a purpose. Every retail and wholesale advertisement—indeed, wherever there is any available space it is filled by one or more advertisements. The back, the sides, the edges, and the face margins, of every page contain one or more advertisements, illustrate advertising, may it be, or fail to be, it is certainly entitled to the distinction of being the best Lancaster County Directory extant. One of the most interesting and useful features of the work, from an agricultural and domestic standpoint, is the list of the names and post-office address of all the farmers of Lancaster county, alphabetically arranged. It also includes the population of the United States according to the tenth census (1880), the population of Lancaster county, and the male voting population of each township and city, according to the recent enumeration. Also Lancaster City Street Guide: the officers of the General Government and of Pennsylvania, Lancaster city and county officers, including the councils and school board, the new fire department, the public buildings, the churches, cemeteries, educational in institutions, post-office department, stage lines, county post offices and postmasters, distances and rates of railroad fare, newspapers and periodicals, building associations, beneficent and secret societies, literary, scientific, and miscellaneous societies, together with the latest revised lists of their officers: all brought down and adapted to the years 1882 and 1883, in fact, appearing to be all that is necessary in a directory for the territory it covers at the present time.

LANCASTER REAL ESTATE CATALOGUE.—Allen A. Herr & Co., No. 101 East King street, Lancaster, Pa., issue monthly and send free to any address 49 pp. 8vo, containing properties for sale, in Lancaster county, at the lowest prices. Price, $0.08. A capital publication for those who desire to invest in real estate, and possess the wherewithal to do it.

EARLY GERMAN HYMNOLOGY OF PENNSYLVANIA, by Rev. J. H. Dubbs, D.D.; 27 pages, octavo.—A valuable and interesting pamphlet for the study of this interesting pamphlet by the author, for which we feel exceedingly grateful. It may be a weakness in us, but we all our life have had a leaning towards hymn and song lore, and, at “three score and ten,” we often catch carollers humming over such things as a tradition in the days of our earlyhood. We read this little work with more than ordinary interest, and, whilst doing so, we found it impossible to divert our mind of the constantly obtruded thought that the unwritten hymnology of “the table of contents” and “the table of music” might possibly form a prolific theme for a similar literary contribution. It is true they had not much “rythm” in their composition, and many of them very little “reason;” but, then, this may only have been an appearance to “undecorumsed” outsiders blinded by the familiarity of the words and tunes, as to the thought behind their hymns and songs with a sort that amply compensated their other defects.

BREEDERS’ JOURNAL, published by the “Breeders’ Live Stock Association,” at Beecryr, Ill.; $10.00 per annum. The object of this monthly journal is to stimulate “Economy of production, and value of product.” This is a very able and judicious periodical for the best interests of breeders, and contains an instructive, and liberally illustrated. The material and typography are of unexceptionable quality, and it is well to call attention to the fact that the contents, including all that legitimately comes within the sphere of that specialty, are free from advertisements.

POULTRY BULLETIN, devoted to the various interests of poultry, pigeons and pet stock. 10 pp. quarto, at $1.00 a year. Rossall & Gibson, editors and publishers, Des Moines, Iowa, a new candidate for public patronage, which it certainly deserves.

ROSEGARDEN INSTITUTE.—Corner of Broad and Spring Garden streets, Philadelphia, Pa. This institute has been organized for the purpose of furnishing all those who will attend the experimental school in mechanics, during the latter part of the last year. Perhaps the greatest obstacle to students from a distance would be the expense of living, and the Rose Garden Institute furnishes a rare opportunity to receive instruction in filigree, turning, driling, forging, and other mechanical hands.

We doubt the propriety of pronouncing the oft-repeated phrases of Robert J. Ingersoll, through the medium of the “prophet” and “reformer” inSales as well as any replies to them. It involves a load too heavy to successfully carry, by any journal seeking the true and right, and being thus prepared, it is not honest to intimate or diffuse such a theory which was truly intended for the real work. The publication of the journal ostensibly devoted to the diffusion of agricultural lore. It is fifty years since we first listened to the word "reform", and it has managed so that we at that time seemed to be more able and unanswerable than anything uttered by Ingersoll. He is not a saint, and his work has best; but, mongodb.com, and must be "sustained" in all its ideas, and not "ironically discerned," distasteful as such a "Pantheism" may be to Mr. Ingersoll. A theological propit ious to the religious, and the proof true by material testimony, or legal argu-
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IT HAS NO EQUAL

The Penn Harrow
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By removing the wire and wheel from the original you have a complete double "A" Harrow.

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handle it.

The Penn Harrow
ON ITS SLED.

Dissolution of Partnership
The partnership in the merchant tailoring house hereinafore existing between the firm of Rathvon & Fisher, is this day dissolved by mutual consent. All persons in any manner indebted to said firm, are respectfully ad
vised to make immediate payment to S. S. Rathvon, who is hereby authorized to receive the same, and all claims against said firm, will be presented for c-confirmation.

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It is recorded that this large and comprehensive book, intended in another column by J. C. McCurdy & Co., of Philadelphia, the well-known publishers of Standard works, has not only the newest and handiest, but also the best work of the kind which has ever been published. Thoroughly treating the great subjects of general Agriculture, Live-Stock, Fruit-Growing, Husband-.

PHILOSOPHY, and Home Life, telling just what the farmer and the farmer's boys want to know, combining Science and Prudence, stimulating thought, awakening inquiry, and interesting every member of the family, this book must excite a mighty influence for good. It is highly recommended by the best agricultural writers and the founding papers, and is destined to have an extensive sale. Agents are wanted everywhere. Jan-11

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In the fall of 1879 I bought a Cooley Creamer. I have used it ever since with entire satisfaction. It makes more butter of better quality, without half the labor, than the old process. A lady friend who has used one for about six months says it is "the best hired girl she ever had. I have also used the Davis Swing Churn for the last 16 months, and am highly pleased with it. It churns the cream at a higher temperature and brings the butter in a better condition than any other churn. I give the Davis Eureka Butter Worker a fair trial, and am happy to recommend it to others. I can work twenty pounds of butter with it in five minutes, and thus save a half-hour's work.

Yours truly,

Samuel S. Oclikett.

Mr. Holley, Burlington County, N. J., August 22, 1881.

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THE LANCASTER FARMER,

[December, 1882]

Founded Under the Auspices of the Lancaster County Agricultural and Horticultural Society.

Dr. S. S. Ratbannah, who has so ably managed the editorial department in the past, will continue in the position of editor. His contributions on subjects connected with the science of farming, and particularly that specialty of which he is so thoroughly a master—antiquarian science—some knowledge of which has become a necessity to the successful farmer, are alone worth much more than the price of this publication. He is determined to make "The Farmer" a necessity to all households.

A county that has so wide a reputation as Lancaster county for its agricultural products should certainly be able to support an agricultural paper of its own, for the exchange of the opinions of farmers interested in this matter. We ask the cooperation of all farmers interested in this matter. Work among your friends. The "Farmer" is only one dollar per year. Show them your copy. Try and induce them to subscribe. It is not much for each subscription to do but it will greatly assist us.

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No. 9 North Queen St., Lancaster, Pa.