FARMERS' CABINET,

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AND

AMERICAN HERD-BOOK,

DEVOTED TO

AGRICULTURE, HORTICULTURE

AND

RURAL AND DOMESTIC AFFAIRS.

BY JOSIAH TATUM.

Perfect Agriculture is the true foundation of all trade and industry.—LIEBIG.

Vol. XII.—1847—1848.

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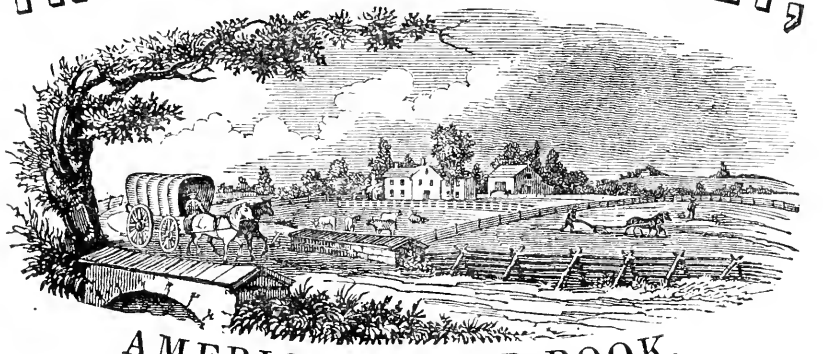
THE FARMERS' CABINET,

AND



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BY JOSIAH TATUM,

EDITOR AND PROPRIETOR,

No. 50 North Fourth Street,

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The Question of Breadstuffs—The Demand and the Supply.

Extract of a letter to the Editor of Bicknell's Reporter, dated

Liverpool, July 3rd, 1847.

FOR a month past the papers of England and Ireland have teemed with contradictory reports of the present and prospective results of the potatoes "set" this year; some affirming that the disease which was so very destructive last year, has reappeared, and that, most likely, the same disastrous effects will result from it; others stating in equally as positive a tone that there is not the slightest ground to fear any evil to the present planting of potatoes from the "aphis vastator" of Mr. Smee, or any other insect or cause of disease—that the plants in every section of the country look exceedingly healthy, and from a thorough investigation, in many parts of the land, they are induced to believe that the disease will not appear this year, or if it does, it will do but little injury. These reports may be traced to various causes. One set of newspapers is endeavouring to prepare the public mind for what may be the truth—the total destruction of the plant—and the other, fearing the present effect on breadstuffs and trade, endeavours to disguise the truth, or at least, to lessen the evil, by denying at present the appearance of the disease, and then, as the summer advances, to hint remotely at the likelihood of its again preying on the "unfortunate potatoe," as it is called by some. So far, this has been the course with several influential papers that I could name. A month since the idea of disease was laughed at, but the opinion is gradually gaining ground that the potatoe is affected as it was last year, and that the quantity destroyed will be equally as great of this year's crop as of last. Indeed the fact of the disease cannot, with truth, be denied. Even the new potatoes brought to market tell the story too plainly—they appear much spotted and eaten away, and when boiled have a sweet and disagreeable taste, as well as being dark in colour. The disease has, as I feel certain from my own observations, made its appearance in a decided form, and if I am able to form an opinion, it will be more virulent this season than in any previous one, from the fact of its appearing in June this year, and not until a much later period in former years.

As vast numbers of people in the United States are interested in agriculture, it will

be well to inquire what will be the probable effects of a failure of the potatoe crop in Great Britain this year, and whether the demand for breadstuffs which has existed for some time past will be likely to continue. In the first place it is an admitted fact that much less land is under culture of potatoes this year than previous ones. This information has been gathered from undoubted sources. Throughout the north of Ireland, the quantity of potatoes planted in the present year is rather less than one-fourth; in some parts of the south and east, in answer to inquiries addressed to gentlemen cognizant of the facts, I learn that "one-fortieth," "one-seventieth," "one-half," and "one-fourth" has been planted—in the west the proportion will barely reach one-fourth of the usual quantity; and to put down the whole of Ireland as one-fourth, is a full estimate. In Scotland the cultivation of the potatoe has been almost wholly abandoned, except in the immediate neighbourhood of the large towns and cities, so that I think not more than one-fifth is planted in potatoes. In England the proportions are as various as in Ireland. In some sections the land in potatoes equals one-half the usual quantity; in others one-fourth, or one-sixth, so that if I assume one-fourth as the average, I do not think I wander far from the truth.

Mr. McCulloch, in his admirable work, "Statistical Account of the British Empire," estimates the cultivation of "potatoes, turnips, and rape," to extend over 2,000,000 acres in England, of which 1,200,000 at least are usually planted with potatoes. The same work estimates this plant to occupy 2,000,000 acres in Ireland and 200,000 in Scotland. From which estimates I make the following table:

	Land usually cultivated with potatoes.	Cultivated this year.	Uncultivated or otherwise appropriated.
	Acres.	*Acres.*	*Acres.*
England	1,200,000	300,000	900,000
Ireland	2,000,000	500,000	1,500,000
Scotland	200,000	40,000	160,000
	3,400,000	840,000	2,560,000

From this, which is, I believe the most correct estimate that can be made, it will be seen that 2,560,000 acres usually devoted to the cultivation of the potatoe, are, this year, devoted to other purposes or remain uncultivated.

One of the most important questions connected with the annual failure of the potatoe, is the comparative number of persons that can be supported upon a given surface planted with potatoes and any grain that may be substituted. From several interesting works relating to this subject that have come under my notice, I learn that the average yield of an acre of potatoes in Ireland is 400 bushels of 60 lbs., whilst the same land under wheat would produce 28 bushels of 60 lbs., or of oats 64 bushels of 40 pounds. Thus:

1 acre of potatoes produces	24,000 lbs.
1 " wheat	1,680 "
1 " oats	2,560 "

The Commissioner of Patents in his Report to the Congress of the United States establishes the fact that one pound of wheat will furnish as much nourishment as four pounds of potatoes; therefore as one acre of potatoes produces equal to 6,000 lbs. of wheat, it follows that this quantity of land will support as many persons as three and a half acres of wheat. This calculation of the relative amount of nutritious matter in wheat and potatoes, is an extreme one, as many intelligent writers on the subject make the proportion as one to three, instead of one to four, as I have asserted. I am not able to give the same exact data for calculating the relative nourishment which oats bear to potatoes, but will take as a starting point the generally received opinion in Ireland, that one pound of oat meal is equal to three pounds of potatoes. The loss of oats in grinding is about five-fourteenths—hence I draw the following conclusion, that the yield of an acre of oats ground will be equal to 1646 lbs. meal,—then one pound of oat meal being equivalent, in nutriment, to three times that weight of potatoes, it follows that one acre of the latter will furnish as much food as four and eight-tenths acres of oats. These calculations, if based upon proper data, establish the fact that, in order to support a population whose principal food has been the potatoe, on grain, the quantity of land must be increased in the proportion of at least three and a half acres of wheat or four and eight-tenths acres of oats. The immense increase in the cultivation of the potatoe during the last quarter of a century, from being a garden vegetable, has enabled Great Britain to support a rapidly increasing population, at even less prices that when this plant was almost wholly unknown. This increased population still remains, but how are they to be fed? The potatoe has been failing for three years past, and now is too uncertain to be depended upon as an article of food. Hence we see that it occupies less land than formerly, that many have wholly cast it aside as producing a profitless crop. This sudden abandonment of the potatoe is virtually an abandonment of three and eight-tenths or two and a half acres in every four and eight-tenths or three and a half acres,

accordingly as wheat or oats are substituted. So that whether the potatoe crop be good or bad this year is an unimportant matter, when the fact of the extent to which the cultivation of the potatoe has been abandoned, is brought under consideration. By the first table in the article, it will be seen that 2,560,000 acres usually planted with the potatoe, are this year devoted to other purposes, principally to the Swedish turnip, so that the articles substituted will not be of much value in sustaining human life. The crop of potatoes in Great Britain last year, bad as it was, yielded over 12,000,000 tons of good tubers. In this year I find but 840,000 acres planted. So that admitting this land produces 400 bushels to the acre of good sound potatoes, the yield will still be less than that of last year by more than 3,000,000 *tons.* If the plants prove diseased, the deficiency will be increased the amount of the disease—hence it will require 1,300.000 acres of oats, or 1,000,000 acres of wheat to have been cultivated over the usual quantity, to place this country in as good a position as she occupied at the gathering in of the harvest last year, as well as the difference between the amount of stock on hand last June and this June. Official documents furnish me with the following figures:

Stock on hand—June 5th, 1846.		June 16th, 1847.
Wheat,	qrs. 1,477,922	qrs. 10,780
Barley,	106.284	1,012
Oats,	175,653	3,949
Rye,	34	——
Peas,	25.315	312
Beans,	66,644	700
Indian Corn,	2.773	1,905
Buckwheat,	334	328
Flour,	cwts. 1,298,683	cwts. 29,355
Oatmeal,	" 673	" ——
Corn Meal,	" 22	" 1,125
Equivalent in grain	qrs. 2,226,710	qrs. 27,694

The same documents enable me to give the amount of grain, &c., taken for consumption from June 5th, 1845, to June 5th, 1846, and from June 5th, 1846 to 1847—as per under—

Foreign grain and flour taken into consumption from	June 5, '45 to '46.	June 5, '46 to '47.
Wheat	qrs. 99,162	qrs. 2,520,793
Barley	97,361	846,166
Oats	477,309	1,444,531
Rye	5	18,474
Peas	90,714	223,994
Beans	184,559	342,413
Indian Corn	184,048	1,802,384
Buckwheat	223	37,975
Flour	cwt. 726,132	cwt. 4,824.875
Barley Meal	——	20,099
Oatmeal	65,846	16,880
Rye Meal	——	2,629
Indian Meal	——	383,664
Buckwheat Meal	——	296
Equivalent to total Grain,	qrs. 1,359,386	qrs. 8,435,730

Showing that no less than 8,435,730 qrs. —equal to the produce of 2,000,000 acres of land—of foreign grain have been consumed during the past year. The aggregate imports from June 5th, 1846, to June 5th, 1847, have been as follows:

	qrs. 6,692,709
Stock on hand June 5th, 1846,	2,226,710
	8,919,419
Deduct quantity consumed	8,435,730
leaving	qrs. 483,689

now on hand. So that the difference between the past and the coming twelve months may be summed up thus:

Deficiency in yield of potatoe crop	Tons 3,000,000
Difference between amount of foreign grain on hand, June 5th, '46 and June 5th, '47,	Qrs. 1,743,021

From the first item, however, must be deducted the produce of the 2,560,000 acres hitherto appropriated to the potatoe, and principally now to the cultivation of the turnip, carrot, and other green crops, which, so far as food for mankind is concerned, is of little value. Looking fairly at all these tables and calculations, I am led to believe that the demand for breadstuffs, from the United States, which probably amounted the past year to about one half the quantity brought into the United Kingdom, will be fully as great the coming season as the past.

For much of the foregoing information I am indebted to the London Economist, which publication has lately devoted much space to the subject of the potatoe, its cultivation, and probable extinguishment.

A few evenings since Lord John Russell in an able speech on the Irish Railway Bill, expressed his belief that the potatoe would fail this year, as it had done for the past two years, and that the famine which had already cut off hundreds of thousands of human beings, was, as yet, in its infancy. In adverting to the prospective condition of Ireland, he made use of the following language: "Take the condition in which Ireland may be in future. Some people say that the quantity of potatoes planted this year is one-fourth, one-fifth, or one-sixth, of the usual quantity. But whatever may be the amount, the potatoe crop is in the utmost peril. *There is at least a reasonable fear that a great portion of that crop may perish.* The people, however, though there was not that appearance for some time, have exerted themselves latterly with great industry to sow the ground that hitherto produced potatoes, with different kinds of corn, and a great deal of land has been sown with turnips, which will produce a far greater amount of

green crop than hitherto. But it has been calculated *that with respect to nourishment, you would require three acres of wheat to replace one acre of potatoes.* Then, can any man look to the condition of Ireland during, I will not say the ensuing six months, but, for the ensuing five or six years, without very considerable apprehensions that the suffering of those people may be extreme. That country now contains people to the amount of many millions, living in the most wretched habitations, and feeding upon the lowest and cheapest description of food. I conceive that this condition has been influenced, not by the policy of the Government existing at the present moment, but by Governments long since passed away. I think it but justice to Ireland to assist them by every means in rescuing its people from their present state, and that therefore the House ought to agree to the proposition now before it."

The effects and extent of the famine in Ireland may be seen in the desolation and almost total destruction of a large village called South Reen, in the west part of the county of Cork, which, the Southern Reporter says, in the early part of the year was composed of sixty-two houses, and contained 320 inhabitants, and now has but 50 inhabitants and eight small hovels remaining, the rest of the people having died of starvation, and the houses having been broken up to furnish coffins for the dead and fuel for the living. This is one among many such places.

With respect to the coming harvest, accounts generally agree that it will be late, but fully an average. This I think will be found to be the case with wheat, but not with oats, which, in almost every section that I have seen, look thin. The weather has been extremely variable. In the month of May, for three consecutive days, the thermometer stood in London at 88, at 50, and 75 degrees, being a *fall* of 38 degrees in 24 hours, and a *rise* of 25 degrees in the following 24 hours. Rain has fallen nearly every day, in greater or less quantities for a month past, and the mercury has kept so low, that fires and overcoats feel quite comfortable. In fact the weather is like our March.

The fluctuations in the corn market within the past two months have been extraordinary. The following were the prices on

	May 5th.	June 29th.	July 3rd.
Indian meal per bbl.	31 a 33s.	20s.	20 a 20s. 6d.
" corn white qr.	70 a 75	39 a	39 a
" " yellow	68 a 72	38 a	38 a
Flour per bbl.	47 a 49	34 a 36	32 a 34

The slightest cloud obscuring the sun for an instant only, seems to produce a change in price either up or down as it may be. Sometimes there is too much rain, up go the rates—then comes a day of sunshine, and its effects are seen as well at the stock market in advancing consols, as at Mark Lane in depressing grain, and so it will be until the gathering in of the harvest.

The Relief Commissioners of Ireland in the Report just presented to Parliament, state that 1,923,361 rations, at an average cost of 2½d. (5 cts.) each are daily distributed, and that 2,622,684 persons are in the receipt of gratuitous relief. This will give some idea of the extreme distress prevailing in that island.

Yours truly,
M. T. M.

Dr. Franklin's Mode of Learning to Swim.—Choose a place where the water deepens gradually, walk coolly into it till it is up to your breast, then turn round, your face to the shore, and throw an egg into the water, between you and the shore. It will sink to the bottom, and be easily seen there, as your water is clear. It must lie in water so deep as that you cannot reach it to take it up but by diving for it. To encourage yourself in order to do this, reflect that your progress will be from deeper to shallower water, and that at any time you may, by bringing your legs under you, and standing on the bottom, raise your head far above the water. Then plunge under it, with your eyes open, throwing yourself towards the egg, and endeavouring by the action of your hands and feet against the water, to get forward till within reach of it. In this attempt you will find, that the water buoys you up against your inclination; that it is not so easy a thing to sink as you imagined; that you cannot but by active force get down to the egg. Thus you feel the power of the water to support you, and learn to confide in that power; while your endeavours to overcome it, and to reach the egg, teach you the manner of acting on the water with your feet and hands, which action is afterwards used in swimming to support your head higher above water, or to go forward through it.—*American Agriculturist.*

Clubfoot in the Horse.—A fine black wagon horse, the property of Mr. Millet, miller, of Newton St. Cyprus, was some time since sent to Mr. Tremlett's kennel to be slaughtered, being considered incurable, having a distortion of the foot from a contraction of the sinew, which made him walk on the front of his hoof, with the heel elevated perpendicularly. Being an animal in such good condition, Mr. Tremlett was un-

willing to destroy him. He therefore requested Mr. Read, veterinary surgeon, to examine him; who decided that the only chance of rendering the animal useful would be the division of the great flexor tendon of the leg. Accordingly the operation of tendotomy, or dividing the tendon, was performed. Ten days after the operation he walked flat on the sole of his foot: one month afterwards he was put to the plough. He is now as useful as any horse on the farm, and performs all the duties a horse is required to perform. Four months have elapsed since the operation was done; a fair trial has therefore been given to test the utility or inutility of the operation.—*Western Times.*

Loss of Beef in Cooking.

Beef is the staple animal food of this country, and it is used in various states—fresh, salted, smoked, roasted, and boiled. When intended to be eaten fresh, "the *ribs* will keep the best, and with care will keep five or six days in summer, and in winter ten days. The middle of the *loin* is the next best, and the *rump* the next. The *round* will not keep long, unless salted. The *brisket* is the worst, and will not keep longer than three days in summer, and a week in winter." In cooking, a piece of beef, consisting of four of the largest ribs, and weighing eleven pounds one ounce, was subjected to roasting by Mr. Donovan, and it lost during the process two pounds six ounces, of which ten ounces were fat, and one pound twelve ounces water dissipated by evaporation. On dissection, the bone weighed sixteen ounces, so that the weight of meat fit for the table was only seven pounds eleven ounces, out of eleven pounds one ounce. It appears that when the butchers' price of ribs is 8½d. per lb., the cost of the meat when duly roasted is 11½d. per lb., and the average loss arising from liquefaction of fat and evaporation of water is 18 per cent. With sirloins, at the price of 8½d. per lb., the meat cost, when roasted, 1s. 1 1-6d. per lb., at a loss of 20¼ per cent. A loss of 18 per cent. was also sustained on boiling salted briskets; and on salted flanks at 6d. per lb. the meat cost 7¾d. per lb., at a loss of 13 1-5 per cent. In regard to the power of the stomach to digest beef, that which is eaten boiled with salt only, is digested in two hours and forty-five minutes. Beef, fresh, lean, and rarely roasted, and a beef-steak broiled, take three hours to digest: that fresh and dry-roasted, and boiled, eaten with mustard, is digested in three hours and thirty minutes. Lean fresh beef fried takes four hours to digest, and old hard salted beef boiled does not digest in less than four hours and fifteen minutes. Fresh beef suet boiled takes five hours and thirty minutes to digest.—*Combe.*

Comparative Nutritive Powers of Green and Dry Fodder for Cattle.—A communication has been made to the Paris Academy of Sciences, by M. Boussingault, on the comparative nutritive powers of green and dry fodder for cattle. Hitherto the received opinion was, that natural or artificial grasses, on their being converted into hay, lost a portion of their virtues. To determine this point, M. Boussingault fed a heifer alternately, for ten days at a time, upon green or dry food, and weighed the animal after each ten days. He found no difference in the average weight; and therefore comes to the conclusion, that the hay made from any given quantity of natural or artificial grass has the same nutrition as the quantity of green food from which it was made.—*London Athenæum.*

Irrigation.

We have repeatedly in the course of our editorial labours, adverted to this subject, and take pleasure in introducing the following very clever extract from *Stephens' Book of the Farm.* Many situations offer facilities for enriching land, and greatly adding to its productiveness, by this method, which are suffered to remain unimproved: and it were well to recollect that every advantage *unappropriated*, is, according to Poor Richard's theory, so much *lost*.—Ed.

The mode in which water acts in producing the effects witnessed in water-meadows, has not yet been completely ascertained. It is not the sediment in the water that alone works the charm, for clear water produces similar results; though, no doubt, enriching ingredients carried by the water encourage the growth of plants more rapidly than clear water, as witness the produce of foul-water meadows in the neighbourhood of Edinburgh. Professor Low has these observations on the theory of the process: "The *theory* of the process of irrigation," says the Professor, "has not been satisfactorily exp'ained. That the effect is not produced by the mere supply of deficient water, appears not only from the period at which the water is admitted, and when in our climate the soil is always saturated with the fluid, but from the circumstance that *the effect is not produced when the water is allowed to stagnate*, and sink down in the soil, but *when it is kept in a current over it.* When the water is suffered to stagnate, the soil tends to produce carices, junci, and other sub-aquatic plants; but when it is kept in motion, and drained off at intervals, the finest grasses peculiar

to the soil and climate are produced. Neither does the fact of the deposition of mud, or other fertilizing sediment, explain the phenomenon; for however such depositions may increase the effect, it is likewise found that water, without the least perceptible sediment, may be employed with success. It has been supposed that the water acts beneficially by maintaining the soil at a higher temperature. Water, at a temperature of 40°, is of greater specific gravity than at a lower temperature; and hence as the water tends to the freezing point, the warmer portion of it is next the ground. Much, however, cannot be ascribed to this cause, in a current so shallow and constant as that which passes over the watered meadow. It is probable, therefore, that the main effect is produced by a mechanical action of the water, acting upon and bringing nourishment to the fibrous roots of the plants."

Although it may be very true, as Mr. Stephens observes, that "however authors may disagree on this interesting subject—the theory of irrigation,—I believe all experimentalists acknowledge that early winter watering is necessary to produce early and abundant vegetation; in what way this operates is, as to practical purposes, less material;" yet it is always satisfactory to man to be able to give a reason for what he does. To this view I shall add another theory of irrigation, that has been suggested by Professor Rennie, late of King's College, London. It is believed by some vegetable physiologists that plants excrete certain matter from their roots, which proves inimical to the health of other plants of the same kind. Hence it is concluded that grasses do not continue permanently in a healthy state in the same site, because they are in time injuriously affected by their own excretions, which, encouraging the growth of plants of a different nature, such as mosses, they spring up and extirpate the grasses. It is supposed to be probable that *every species of grass is not alike affected by its own, or the excrementitious matter from other grasses*, and therefore some species withstand the poison longer than others. Now the water of irrigation, in its descent through the soil and subsoil, washes away or carries off in solution the injurious excrementitious matter exuded by the grasses, and thereby cleanses the soil in which they are growing, free of it. Hence the perennial verdure of irrigated meadows.

In order to arrive at a satisfactory explanation of this subject, and believing that both this theory, as well as the one given by Sir Humphrey Davy, referred to by Professor Low, contains truth, I proposed some time ago a conjunction of the two theories; and the compound theory certainly explains the four great points of irrigation, namely, that it supplies moisture to the soil in dry seasons and in tropical climates; it affords protection to plants against the extremes of heat and cold; it disseminates manure in the most minute manner to plants; and it washes away injurious matter from the roots of plants. The benefits derived from irrigation I therefore maintained are purely mechanical, and doubted the correctness of Sir Humphrey Davy's opinion, when he says that "in the artificial watering of meadows the beneficial effects depend upon many different causes, some *chemical*, some mechanical," because chemical action only commences *after the act* of irrigation has ceased, as the nature of the following particulars attending irrigation will show. No doubt, the effects of the substances, whatever they may be, which are deposited by the water of irrigation, may be chemical, as well as those of manure applied to grass by the hand of man. But the act of the water in depositing fertilizing materials, can be no more chemical than that of the instruments used in spreading dung upon the soil. The truth is, that whenever the water of irrigation, or the substances contained in it, act *chemically* upon the grass or soil, while subjected to the process, that moment irrigation proves injurious to the plants. The chemical action and the injury are both evinced by the same phenomenon, namely, the existence of white scum floating on the water. "If the weather should be mild," observes Mr. Stephens, "and you suffer the water to run over the meadow *too long without intermission*, a white scum is generated, which *is very destructive to the tender grass.*" The particulars of irrigation I referred to are these: "The operation of water bringing matter into minute subdivision; the sediment which it contains when used in irrigation being minutely distributed around the stems of the plants; water protecting plants in irrigation against the extremes of heat and cold, by completely covering and embracing every stem and leaf; and the supplying of moisture to the soil and washing excrementitious matter out of it, are all purely mechanical operations." For, "*could the hand of man* distribute manure around the roots and stems of grass as minutely and as incessantly as turbid water; could it place a covering of woollen texture upon each blade and around each stem of grass, as completely as water can embrace each plant and keep it warm; could it water the grass as quietly and constantly as the slow current of irrigation; and

could it wash away hurtful matter from the soil as delicately from the fibres of the roots of grass as irrigating water, there *would be no need of irrigation;* the husbandman could then command at will verdant pasturage for his flocks and herds, throughout the year, and in the driest season. *His mechanical* agency would be as effective as irrigation; but constituted as the relative state of things at present is, between man and the action of physical laws, he employs irrigation as an instrument of his will, and induces nature to assist him in maintaining his live stock by an application of her peculiar mode of acting, under his own guidance, but in which she undoubtedly displays her superiority over him, both in perseverance and dexterity."

Great Yield of Wheat.

Having sometimes seen in the Cecil Whig, accounts of extraordinary agricultural productions, I am induced to contribute my mite to the good cause, by forwarding an account of my present wheat crop.

The ground was in oats last season, and almost as soon as it was taken off, the manure was hauled out, stubble broken up, well harrowed, and then left until the 25th of August, when I commenced sowing the Mediterranean wheat upon it at the rate of a little more than two bushels to the acre, and ploughing in pretty deep; then ran a large harrow over it, and left it. I think I have discovered several important advantages from thus early sowing, and ploughing in. In the first place it gives the wheat an early start, and consequently a strong and vigorous root, and it is not near so liable to be thrown out by the winter frost, and as was the case with mine, the first growth was to all appearance destroyed by the fly, but this proved to be no injury to the plant, which having an early start stooled out wonderfully from the root, as will appear from the samples I have sent as the produce of two grains, tied up separately. There are 55 stalks to one, and 54 to the other, and I presume they will yield about 3000 grains of good sound wheat. Yesterday I shelled out the heads of a single grain numbering 52 stalks and counted them carefully; they numbered 1307 grains. I have the produce of another grain numbering 58 stalks, which I have no doubt will yield 1500 grains of wheat. This may appear almost incredible, and I could hardly believe the evidences of my senses that such could be the result, but I took the several parcels as they were pulled up by the roots in the field, and washed them till there was scarcely a particle of dirt remaining, and then examined them very minutely, and the result was as I have described it; it was only the product of one grain. I have, I believe, without a solitary exception, obtained better crops of wheat by ploughing in, than when I harrowed in. Wheat sown late, and harrowed in, has but a poor chance against the winter and spring frosts.

Peter Askew.

Brick Meeting-house, Md.

Woollen Rags.—Woollen rags, the clippings of woollen cloth obtained from the factories under the name of *shoddy*, and wool dust, and woollen refuse of every description, make a most valuable manure. Indeed, none ranks higher in value. Besides its own intrinsic efficacy, it becomes mixed or strongly impregnated with oil, used in the processes of manufacturing. Its effects are not immediate, and therefore it is not to be considered as a forcing manure, but they are very durable; and when spread upon grass land, its efficacy is great and permanent. It is deemed, in the highest degree, rich in all the elements of vegetation. It is considered extremely valuable as an application to hop-grounds. The hop-growers in Surrey informed me that it was to be preferred to any other manure. It is deemed best to mix it very copiously with earth or mould; and in this way it should be repeatedly shovelled over, in order to assist its decomposition.

Mr. Hannam, in his excellent little treatise upon waste manures, states the case of a farmer, who, on applying eight tons of shoddy compost per acre, obtained nine tons of hay, in a small hilly field, which before never gave him four tons. It is transported in large sacks, and is a regular article of merchandise.—*Colman's Tour.*

Show me the cottage, the roses and the honeysuckles on which are neatly trimmed and trained, and the garden behind is well stocked with culinary herbs and a few choice flowers, and I will speedily find you a cottager who never wastes his time or his money, or debases his mind, and learns the "broad road which leadeth to destruction," in the contamination of an ale-house. If the garden is neat, one may rest assured that the cottage, however humble it is, is the abode of contentment and happiness; and that however simple the fare may be, it is wealth and luxury in full store to the inmates, because they are satisfied with it, and grateful for the possession of it.

Dodman says "a very little care and judicious selection of sorts will insure pears *daily* from the end of July till May."

Interesting Agricultural Facts.

Read before the Farmers' Club and communicated to the Farmer and Mechanic for publication.

BY H. MEIGS, ESQ.

The care of enlightened and patriotic men has caused the introduction of precious plants and animals into countries, which had never, since creation before possessed them.

Lucullus first introduced cherries into Italy, from Pontus, and he first planted them in his princely gardens in Rome, where they have ever since flourished, as greatly as they had done in Pontus.

The Malus Pyrus, or rather Epyrus, (the pear) from Epirus. The peach (Malus Punica) from Carthage. The apricot (Malus Armeniaca) from Armenia. The quince (Malus Cydonia) from Syria—these after having been naturalized to the climate of Italy, were afterwards transplanted by the Romans, into all the countries conquered by them. The tree from which the first sweet oranges were raised in Portugal, is, perhaps, still living in China, and they bear the name of China oranges, for they were not natives of Portugal.

Rice was first introduced into Carolina about the year 1740.

In England, about the year 1500, there were no musk melons, sallads, cabbages, turnips, carrots, nor any of those garden roots so important now to the people. Long after that, the cauliflower was introduced, which now grows so finely in England. About the years 1525 to 1550, hops and pippin apples were first introduced; gooseberries, also currants, roses, July flowers, carnations, asparagus, oranges, beans, lettuce, plums, musk roses, tulips, and artichoke. About the year 1769, the rhubarb plant was deemed so naturally confined to Tartary, that the Emperor of Russia regulated the quantity brought to market and the price of it, much in the same way that the Dutch have done cloves and mace, and they made England pay annually nearly a million dollars for it, and it now grows in England to great perfection, and as easily as the common dock.

As to birds, the peacock was introduced into England from the East Indies, the pheasant from Asia Minor, and it flourishes in England.

Our barn yard fowls were brought originally to England from Asia. Our horses are from Barbary, Turkey, Persia, Andalusia of Spain, and from Arabia, and they flourish among us. James I. introduced the cattle.

Before the reign of Tiberius it was supposed that the silk worm could exist only in China and Persia. But about the times of Augustus and Tiberius some enterprising man carried the eggs to Greece, where they were found to hatch and thrive perfectly well. They afterwards were carried to Asia Minor, but it was several ages before they were naturalized in Italy by the Francs.

Good Advice to Boys.

Be *brisk, energetic and prompt!* The world is full of boys,—and men too—who drawl through life, and never decide on any thing for themselves—but just draggle one leg after the other, and let things take their own way. Such people are the dull stuff of the earth. They hardly deserve as much credit as the wooden trees; for trees do *all the good they can*, in merely growing, and bearing leaves and seeds. But these drawling, draggling boys, do *not* turn their capacities to profit, half as far as they might be turned; they are unprofitable, like a rainy day in harvest time. Now the brisk energetic boy will be constantly awake, not merely with his bodily eyes, but with his mind and attention—during the hours of business. After he learns what he has to do, he will take a pride in doing it *punctually* and *well*—and would feel ashamed to be *told*, what he ought to do without telling. The drawling boy loses in five minutes the most important advice; the prompt, wide-awake boy never has to be taught twice—but strains hard to make himself up to the mark, as far as possible out of his own energies. Third-rate boys are always depending upon others; but *first-rate boys depend upon themselves*, and after a little teaching, just enough to know what is to be done, they ask no further favours of any body. Besides it is a glorious thing for a boy to get this noble way of *self-reliance*, *activity*, and *energy*. Such an one is worth a hundred of the poor draggling creatures, who can hardly wash their own hands without being told, *each time*, how it is to be done. Give me the boy who does his own work promptly, *and well*, without asking—except once for all, at the beginning—any questions; the boy who has wits about him, is never behind-hand, and don't let the grass grow under his heels.—*Farmer and Mechanic.*

Manure for Strawberries.—The best top-dressing for strawberry beds is a little leaf mould, pointed in with a fork, early in March. A good addition also is nitrate of soda, three ounces to each square yard, sprinkled over the surface at the same season. Bonedust and charred turf, pointed in with a fork in October, have also been found highly beneficial.

Preservation of Timber.

Timber is sometimes seasoned by previous total immersion in water. It has been held that this process favoured the thorough drying, by dissolving out certain deliquescent salts which are found in the sap, and prevented after-shrinking. However this may be, it is quite certain that in warm countries especially, it is advantageous to sink fresh-cut timber in water, with a view to prevent it from splitting, apparently in consequence of drying too quickly. The old Venetians sank for a season in the sea, the oak timber which was destined for the construction of their galleys. Elm and beech, in particular, are said to improve greatly by the process of submersion in salt water, and to dry afterwards perfectly by simple exposure to the air.

Duhamel advises strongly, that in ship-building all timber from trees already on the decline should be rigorously rejected; and this the rather, that the most careful examination often fails at first to perceive any alteration in the heart-wood of such trees, although it never fails to show itself by and by at a sufficient interval after the felling. This is undoubtedly a precept which it would be well to bear constantly in mind; but timber does not always carry within itself the germs of its speedy decay; and that which has been seasoned with the most scrupulous care, and was originally of the best quality, does not escape the rot when it is placed under unfavourable circumstances, any more than that which was of inferior worth and less carefully treated.

Wood appears to perish or decay through three principal and appreciable causes, which all require similar conditions to come into play, viz., stagnant air, sufficient warmth, and moisture. Like the generality of organic substances, wood, when moistened in contact with the oxygen of the air, and under the influence of a sufficiently high temperature, undergoes decomposition of a kind which has been compared to a slow combustion, upon which we shall find occasion to say more by and by. It is with a view to escape this kind of decay as much as possible that timber is never, or ought never, to be employed in the construction of ships and buildings until it has been thoroughly seasoned.

Besides this first cause of decay, which may be prevented in a great measure by using certain precautions, wood has still two redoubtable enemies, insects and certain plants of the family of the cryptogamiæ. In one case, the wood perishes because it is fed upon by certain animals which live and grow at its expense; in the other it decays because it serves as the soil to one crop of fungus after another which luxuriate on its surface, while their roots penetrate deeply into its interior. There is nothing in either accident which excites astonishment, now that we know the intimate constitution of wood. We know, in fact, that among the number of soluble principles which impregnate the woody tissue, there is an azotized matter analogous in its composition to those that exist so abundantly in all the ordinary esculent vegetables. There is, therefore, in wood ample nourishment for the insects which we find living on it; and if I state now—reserving to myself the opportunity of demonstrating the fact—that all organic azotized matter becomes an active manure by decaying, we shall understand how it happens that plants, which have the power of living in dark, warm, and damp places, wax and multiply in the joistings of houses, and in the ribs and planks of ships, causing a *dry rot*, which separates the integral layers of the wood, and reduces the strongest beams to dust.

The rapidity with which wood is, in some circumstances, devoured by insects, is almost incredible. Some years ago the thermites, or white ants, spread in such strength through the docks and arsenals of Rochelle and Rochefort, that in a very short space of time serious damage was done. A learned entomologist, M. Audouin, commissioned by the ministry to take information on the subject, reported that the ravages committed by these insects had been very considerable. But it is principally in warmer climates, where the temperature is steady throughout the year, and where there is no winter, that the thermites occasion the most alarming injury. At Popayan, for example, it is difficult to meet in a building, even of recent construction, with a piece of wood which is not gnawed and ant-eaten. The hardest and most compact woods do not always resist the attacks of these insects, which, further, do not spare every kind of odorous wood, cedar for instance. In such countries it is altogether impossible to preserve books and papers. I remember, in connection with this matter, that having received instructions to examine the archives of Anserma, one of the oldest towns in Popayan, in 1830, I found nothing but books illegible and in pieces; nevertheless, the date of the documents, which it was my business to consult, could not have been older than the year 1600.

The dry rot, which results from the development and growth of cryptogamic plants upon wood, is the curse of navies. Mr. Knowles is of opinion that this disease of

timber has been known from the most remote antiquity; he believes that he can even recognise dry-rot in the sore called house-leprosy, mentioned in the 14th chapter of Leviticus. A ship attacked by dry-rot, becomes in a very short space of time unfit for sea. The Foudroyant, of 80 guns, is often quoted as an instance of its destructive powers: launched in 1798, she had to be taken into dock and almost rebuilt so soon as 1802.

The fungi which induce dry-rot have been studied by Sowerby. Mr. Knowles signalizes two species in particular; one of which he describes under the name of *Xylostroma giganteum*, the other under that of *Boletus lacrymans*. The Xylostroma does not extend beyond the part where it is developed; but the Boletus, on the contrary, is propagated with frightful rapidity, and disorganizes deeply and to a great distance around the texture of the wood where it once appears. These fungi are generally found on board ship, between the planking and the ribs, in damp situations, and where the air is scarcely, if ever, changed.

The temperature most favourable to the development of dry-rot has been found to lie between 7° and 32° cent. or 45° and 90° F. These are the extreme limits: below the minimum, vegetation languishes; above the maximum, the fungi droop. With this piece of information it was hoped that vessels might be freed from dry-rot by raising the temperature sufficiently. The trials were made in winter in the "Queen Charlotte," the air in the lower part of the ship being raised as high as 55° cent. or 130° F. But the general result did not answer expectations; for although the fungi were destroyed in the lower part of the vessel, it was found that their growth was rather favoured in places at a certain elevation above the kelson. The warm air, in fact, as it rose through the timbers became robbed in its course, and deposited the greater portion of the moisture which it had taken up at a lower level. Above the orlop deck, consequently, there was just about the temperature and the quantity of moisture most favourable to the development of the fungi. The evil was therefore only transplanted, not destroyed. It was now proposed to heat the "'tween decks" at the same time as the hold, making use of due ventilation; but this method of proceeding has not been put into practice.

The extreme slowness of the growth of trees, stands in strong contrast with the rapidity of their decay when they are reduced to the shape of timber and employed in constructions of almost every kind. In countries well advanced in civilization, every description of industry tends to consume timber, at the same time that an increasing population is every day contracting the extent of forest land, and diminishing the number of trees grown. In some countries, indeed, it is certain that the production of wood for all purposes, firing, &c., &c., is no longer in relation with its consumption. The price of the article, necessarily high, is therefore tending continually to rise; and it is not surprising that various measures have been suggested and essayed of giving this perishable material greater durability.

The well-known great durability of certain trees, the teak, ebony, lignum-vitæ, &c., naturally led to the conclusion that the fatty or resinous matters which they contain have the property of preserving the wood against the greater number of the ordinary causes of decay; and unctuous and resinous matters appear in fact to have been the means most anciently employed to preserve wood from the air, from moisture, and from the attacks of insects. But it is scarcely necessary, at the present time, to say that these varnishes only accomplish the object proposed in their application in a very imperfect way; paint and varnishes crack, rub, or scale off with the slightest friction; nor do they always remove the causes of internal decay; on the contrary, by preventing more complete dryness, they sometimes even provoke or favour them, when applied to tender, that is, imperfectly seasoned wood. Merely laid on the surface, indeed, it has always been seen that varnishes of any kind were but indifferent protectors; that a really good preserver ought to penetrate the substance of the wood, and unite with the tissue itself. But herein lay the whole difficulty; how was the needful penetration to be effected? for the number of chemical substances, from which good effects might reasonably be anticipated, is pretty considerable,—unless, indeed, we find ourselves prevented from using them by the consideration of the price; for it is imperative that any preservative proposed be extremely cheap.

For a long time the only process for effecting the penetration of timber by substances proposed for its preservation was to macerate them for a longer or shorter time in a solution of the substance. But this means was found as tardy of accomplishment as it was ordinarily imperfectly effected; to have got to the heart of logs of large scantling, years would have been required. Any delay, however, in such circumstances, is of itself a cause of enhanced price of the article. By and by a variety of processes, the element in one being pressure, in another exhaustion, were put in practice, and very

satisfactory results obtained. M. Breant showed, that by means of strong pressure he could fill the largest logs from one end to the other with any unctuous or resinous substance proposed, in the course of a few minutes. M. Moll, a learned German, proposed creosote introduced in the state of vapor by forcing, as an effectual means of preserving timber, which it probably would be found; but the high price of the antiseptic, were there no other objections, would necessarily be an obstacle to its general employment. The same objection applies to the bichloride of mercury,—Kyan's patent; and arsenic is inadvisable from its deleterious effects upon the animal economy. Some workmen are said to have lost their lives in consequence of working timber which had been impregnated with a solution of white oxide of arsenic.

It had been observed that vessels engaged in the lime-trade lasted long; and then it was naturally thought that by impregnating the wood to be used for ship-building with lime, it would be rendered more durable. But the result did not answer expectation; the timber treated with lime did not even seem to last the usual time.—*Boussingault's Rural Economy.*

From the Farmers' Library.

A Productive Farm.

Mr. Mordecai Abraham is a neighbour of mine, living upon rented land, and pays $1 50 per acre for ninety-six acres. He has just given me the following items as the amount of his crop for the year 1846. His farm has been worked exclusively by himself and son, with a team of two horses.

	Bushels.
28 acres Winter Wheat	858
9 acres Spring Wheat	164
39 acres Corn	2,050
5 acres Oats	300
¼ acre Potatoes	50
A patch of Onions	7
Total,	3,429

In addition to the above, Mr. A. had one and a half acres of flax, which was a good crop, but not saved for want of time; and three to four acres of spring wheat which he was unable to harvest. He also had nine acres of good timothy hay, which was well saved; and one hundred and sixty bushels of apples, one-half of which were sold for fifty cents per bushel.

The wife and daughters made a piece of silk—enough for 11 handkerchiefs, which sold for $1 50 each, and they have kept a hand-loom in motion for most of the season.

For harvesting and threshing, Mr. A. paid 161 bushels of wheat, which, with the $144 rent, shows the amount to be deducted from the above, in estimating the value of the labour of the family.

I send you this for the purpose of showing your readers abroad what *two men* and *two horses* can do in the way of furnishing something to eat, when they set themselves to work upon our prairies. The land upon which the above crop was raised is not above a medium quality of the lands in this region; and I verily believe there are 30,000 sections or square miles in the State which are as productive as the farm in question. If I am right in this opinion, there are then 120,000 quarter sections which might be made as productive as the one upon which Mr. Abraham raised the above crop. Again, we have some 20,000 square miles not so fertile, which may be set down at half the productiveness of those first named—equal to 40,000 more quarter sections—making in all 160,000 farms of equal productiveness with the above. Now if you will take the trouble to *cipher up* how many people could live comfortably upon the provisions raised by Mr. A. as before stated, and then multiply that number of people by 160,000, you can, I think, give a pretty shrewd guess how many human beings can be fed upon the productions of Illinois when the same shall be brought into tolerable cultivation.

E. Harkness.

Fruit Farm, Peoria co., Feb. 1847.

Ploughs.

Although the Dutch and Flemish made considerable improvement in the plough as early as the sixteenth century, and their example was followed up by the Scotch and English, bringing it to a high state of perfection, in Blythe's Rotherham plough, as early as 1730, I cannot learn that it received any attention on the part of American mechanics, with a view of its improvement, till after the close of the Revolution. Indeed, till quite recently, the ploughs in general use throughout the United States were extremely rude and highly primitive in their construction. A winding tree was cut down, and a mould board hewed from it with the grain of the timber running as nearly along its shape as could well be obtained. On to this mould board, to prevent its wearing out too rapidly, were nailed the blades of an old hoe, thin straps of iron, or worn-out horse-shoes. The land-side was of wood, its base and side shod with thin plates of iron. The

share was of iron with a hardened steel point. The coulter was tolerably well made of iron, steel-edged, and locked into the share nearly as it does in the improved lock-coulter plough of the present day. The beam was usually a straight stick. The handles, like the mould board, split from the crooked trunk of a tree, or as often cut from its branches: the crooked roots of the white ash were the most favourite timber for plough handles in the Northern States. The beam was set at any pitch that fancy might dictate, with the handles fastened on, almost at right angles with it, thus leaving the ploughman little control over his implement, which did its work in a very slow and most imperfect manner.

It will be proper to give some account of the improvement made in ploughs in England and Scotland, before proceeding to the consideration of the improvement in America.

James Small, a Scotchman, constructed a plough on true mechanical principles, and was the inventor of the cast iron mould board for it as early as the year 1740. He was extensively engaged in the manufactory of ploughs and other agricultural implements in Berwickshire, Scotland, for a great number of years. His ploughs are still considered as a standard for the elements of good plough making, notwithstanding the improvements since his death up to the present day.

The basis of Small's improved plough was the Rotherham plough, which had been quite generally adopted. His improvement consisted in the better form of the mould board and *particularly* in making it of *cast iron.* His plough, rendered cheaper by the easier construction and the greater certainty of the regular form of the mould board, obtained a general use in all the north of England and in Scotland. In its turn Small's plough became the basis of the improved Scotch plough, so widely known and used now in both England and Scotland.

From the year 1740, when Small first introduced the cast iron mould board, there seems to be no evidence that any other part of the plough was made of cast iron until the year 1785, when Robert Ransome, of Ipswich, England, introduced the *cast iron* share. This was an improvement of vast importance and was soon followed by others. From the facility and economy with which parts requiring nicety and uniformity in their form can be made and multiplied to any extent when cast, cast iron superseded wrought iron wholly in the plough.

The next improvement in the cast iron parts following Ransome's cast iron share, was made by a plain farmer in Suffolk county, England. It consisted in making the bottom of the land side of cast iron. This was immediately followed by making the whole of the land side of cast iron, and soon after the first introduction of the cast iron share, ploughs were produced of cast iron in all parts of their bodies.

Thus about the year 1790 the plough in England was perfected to the point, that it was made entirely, in its body, of cast iron.

A single improvement yet remained to be effected, viz: a greater hardness in the share; and this was made by Robert Ransome, who in 1803 took out a patent for *case hardening*, or what we term, *chilling* the points and edges of the share. When in England, in 1841, I became acquainted with his son and successor in business, Mr. Allen Ransome, in whose admirable work on ploughs and agricultural implements, the curious reader will find full particulars in regard to this interesting subject.

It will thus be seen that the *cast iron* plough is wholly an English invention.

The first person in America, of whom I find any record as having taken up the plough with a view of its scientific improvement, was Thomas Jefferson of Virginia, late President of the United States. He invented a new mould board, an account of which he first gave to the French Institute; but more minutely describes it in a letter to Sir John Sinclair, in 1798. Having never seen this plough of Mr. Jefferson, I am unable to give any opinion as to its merits; but understand, indirectly, that it was a great improvement upon those generally then in use in Virginia and further south.

We now come to a very important improvement in the material and manufacture of ploughs in America, which so cheapened their construction, that those for one horse, strong and well made, after the most improved patterns, can now be had in New York at $2 to $4 each, and a two-horse plough from $5 to $7; thus placing this most useful of all agricultural implements, within the means of every farmer, however limited they may be. If the farmers are not furnished with good ploughs now, the fault is their own entirely.

The important improvement which I allude to, is, the cast iron plough complete, which as near as I can ascertain, was made about the year 1796, by Mr. Newbold,* an

* This, we apprehend, was Charles Newbold, of Springfield, in Burlington county, an ingenious man, who gave much time to the improvement of the plough, and died within a few years up the North River.

We well remember the barbarous wooden mould board of our boyhood, with pieces of iron hoop nailed

ingenious farmer of Burlington, New Jersey. His was undoubtedly the first cast iron plough ever used in the United States, and to him should be awarded the honour of its introduction, although thus far it has been generally accorded to Jethro Wood of New York, who had the shrewdness to get out a patent for one in 1814. He undoubtedly derived his idea from Mr. Newbold—who took no interest in getting it into general use—or from those of English manufacture, and was never entitled to the least merit as the originator or improver of the cast iron plough. Mr. Newbold made his improvement without any knowledge of the progress in the same direction, in England.

Mr. Peter T. Curtenius, of the city of New York, kept ploughs for sale as early as 1800, the shares of which were cast iron; but whether these were got up by himself or made from Mr. Newbold's patterns, I have not yet been able to ascertain. These ploughs were highly approved, as may be seen by reference to an article on the subject, by Col. John Smith, in volume first, page 173, of the Transactions of the Society of New York for the promotion of Agriculture, Arts and Manufactures, the second edition of which was published in 1801.

Mr. Newbold's plough not having obtained a general use, even in his own neighbourhood, the old wooden mould board and wrought iron share still prevailing for many years after the introduction of his complete cast iron plough, others took up the subject in part.

Mr. Peacock, of New Jersey, made a great improvement in ploughs as early, I am informed, as 1805, by substituting the cast iron for the wooden mould board. The form of this, however, and the manner of putting his plough together were very imperfect.

In the year 1808, Peacock's plough was so far improved as to be made share and mould board both of east iron; and in various forms was extensively used in the vicinity of New York, on Long Island, and in New Jersey, under the name of the Peacock plough. This was six years prior to the first patent obtained by Wood.

Mr. Edwin A. Stevens, of Hoboken, New Jersey, took up the plough in 1817, and for nearly four years devoted his ingenious talents to its improvement. He often tested it with a very accurately arranged dynamometer, and in various other ways, and against the best ploughs within his reach, and at length succeeded in making it so perfect that it found great favour with the public, and has been a standing model for most of the best ploughs since manufactured in the United States. He informs me that he took his idea of a cast iron plough from Mr. Newbold's invention.

Mr. Stevens patented his plough on the 23rd of April, 1821, and was the first in this country to make use of the process of *cold chilling* the base of the land-side and lower edge of the share—a most important improvement—which was also embraced in his specification for a patent.

Mr. Davis of the District of Columbia, Mr. Bergen of Long Island, N. Y., and Mr. Nourse of Massachusetts, have improved the mould boards and other parts of the plough more or less, for particular purposes; and so far as I can learn, have done the same independent of any knowledge of each other at the time. These gentlemen are consequently entitled to more or less praise for their improvements.

There are probably one hundred different kinds of ploughs to be found in the United States, each of which has its advocates, and is entitled to more or less merit. To undertake a description of these would be tedious, I shall therefore content myself with a brief summary of such as are best adapted to particular purposes.

1. *The Root Breaker.*—This is a powerful implement, made without mould board, something like a subsoil plough. It has a thick, strong coulter running down from the beam, locking firmly into the point, which is wrought iron, steeled at the end. The object of this plough is, to operate in newly cleared forest land, for the purpose of cutting up the roots of the trees and preparing it for cultivation. It will sever roots three inches in diameter with ease, and after once passing over the ground, the common mould board plough can work it freely.

2. *The Prairie Plough.*—This, like the one above, is used for breaking up a virgin soil; but as it is the thick fibrous roots of grass centuries old that are to be severed, instead of those of forest trees, its construction is entirely different. Those now most approved, have their mould board and point terminating flat and wide. The point is of wrought iron, steel-edged, and must be kept very sharp in order to work well. Like the Root Breaker, it requires a powerful team to move it.

3. *Sod and Stubble Ploughs.*—Among the best we know for this purpose, are the different kinds made by Messrs. Ruggles, Nourse and Mason, of Worcester, Massa-

on it—the beam and handles partly as long as a row of corn; and we well remember too, the introduction of Peacock's plough, that opened a new era in the practical part of a ploughboy's life.—Ed

chusetts. Their improvements are quite numerous, one of the most important of which, is their recently patented dial-clevis. Combining this with the draft-rod, it enables the ploughman to run his plough close along side of a fence or ditch, or turn up wet meadows, or rice lands, with the off as well as the near animal treading on the unbroken ground, instead of the open, miry furrow. It also enables him to guage the running of his plough more exactly in its work than any other clevis I have seen.—*New York Agricultural Transactions*, 1846.

From the Farmers' Library.

Mr. Phelps's Durham Cow Victoria.

MESSRS. EDITORS,—In redemption of the pledge made you when last in your city, and in obedience to the wishes of our mutual friends, who have solicited it for your columns, I send a brief notice of my Durham cow Victoria.

She was calved on the 30th day of March, 1841, and slaughtered on the 6th day of January, 1847, being five years, ten months, and seven days old—has had four calves at three premature births, none of which have been reared.

Her standard height was	4	feet	8	inches.
Length from horns to tail	7	"	4	"
Breadth across the hips	2	"	1½	"
Size in the girth	7	"	9	"
Weight on foot				1890 lbs.
Net weight of quarters			1312	lbs.
" " hide			98	"
" " rough tallow			176	" — 1586
Loss in slaughtering,			304	lbs.

She would probably have weighed 2,000 lbs. had she been kept until maturity.

Journalizing the weight of animals having become somewhat fashionable, I will add that I marketed with Messrs. A. D. & H. Reed, of Farmington, the present season, fifteen hogs, averaging 416 lbs., the lightest weighing 332 and the heaviest 524 lbs.

WILLIAM J. PHELPS.

Elmwood, Peoria co., Feb., 1847.

TO SAVE HORSES FROM FIRE.—"I recommend first, to *blind* the animal *thoroughly*, and second, to unloose or cut the halter, and the terrified animal will, *with kind and gentle usage*, at once suffer himself to be led past, nay, even *through* the raging element. I have myself been benefitted by possessing the knowledge of this plan, and have satisfactorily and practically put it to the test, after all other means that could be thought of—both gentle, persuasive, and compulsory—had been tried in vain."

Potatoe Disease.

AT an agricultural discussion at Albany, a few months since, S. Cheever remarked that he had "read much; examined much; experimented much on this subject, and all his investigations had only confirmed him, that this terrible disease was one of those inscrutable dispensations of Providence, sent in its wisdom; sent for its own mysterious uses; and its causes are yet hid from the mind of man. We only know that it exists. It had been supposed to show itself only in this soil or in that, and yet where one person has proved to his own satisfaction, that it was only in this combination of circumstances that it was evinced, it has shown itself in its direct opposite. It was like the cholera, which came and went, no man knew why or whither, but its dreadful work, all saw. It passed over in its destruction, going as it came. He had suffered very little in his own experience, but had seen its effects, and had seen its varied phases, its eccentric features, so much so as to establish to his belief, the truth, that the potatoe disease was a calamity, with no known cause. All Europe had endeavoured to investigate the origin of it. It had been discoursed upon, experimented upon by scientific men abroad, to a greater degree than any other recent subject, and yet the result of all these elaborate and scientific researches had been to establish the truth, that the real causes were hid in the mysteries of a Providence that has motives unknown to men.

American Institute—Farmers' Club.

April 20th, 1847.

ROBERT LAWRENCE, Esq., in the chair—H. Meigs, Secretary. Mr. Meigs read the following translation made by him from the *Revue Horticole:* Paris, 1847.

Growth of Potatoes in the earth without stalks or leaves.

Lefevre remarks that the winter culture of potatoes ought to attract the attention of the learned and the practical agriculturists to this curious problem.

Question.—Can the potatoes continue to grow in the earth when the vegetation of their stalks and leaves is suspended by cold? To this question practical men say there is no difficulty, for they find that the potatoes often develope in cellars and in the banks where they are deposited, young potatoes. Besides, what are potatoes but swelled roots or stems?

Last year Mr. Francoeur gave a statement to the Royal and Central Society of

Agriculture, of an experiment he had made after the method of Mr. Chaugarnier.

Potatoes planted about the end of August, gave him a crop at the end of the ensuing winter.

A discussion arose in the society on this subject—and it seems to have been agreed that these potatoes had, in the spring, attained their full size.

Monsieur Masson, in the experimental garden of the Society, planted in August, 1846, the Marjolin potatoes; the growth of the stalks was very slow; at the time of hilling them there were no young potatoes. The cold weather having come, he covered the potatoe bed with dry leaves, and at that time the young potatoes were not larger than the finger's end. Frost came on shortly after; the stalks were completely disorganized, but the vegetation of the potatoes in the earth, nevertheless continued. We recollect that Mr. Vilmorin proved the same facts twenty years ago, when he introduced the Marjolin potatoe by the name of the kidney.

Mons. Naudin.—Agriculture is, in our day, a very complicated science, borrowing for the most part from every other. Besides a knowledge of vegetable physiology which it claims imperiously from every one who takes that career, it also demands an exact appreciation of the different soils, of climate, of local circumstances which often powerfully influence the productions of the earth. We must understand the effects of various manures—what kinds of animals we ought to raise, &c., and in fact, in order to be a good farmer one ought to be a meteorologist, mineralogist, chemist, natural philosopher, and an economist. And it is to these grave and important questions, that the professor of the garden of plants at Paris takes such pains to call the attention of people.

France, says he, is one of those countries in Europe which demonstrates best this great truth, that agriculture is a complex art. With her vast plains of the tertiary formation, her masses of granite mountains, her oceanic regions in the west, her oriental provinces participating in the continental climate of the centre of Europe, with such a varied mineralogical nature of soil, and above all, with her north and south regions—what a study does she present for the philosopher and for the learned farmer.—*Farmer and Mechanic.*

From the Cultivator.

Results of Industry.

The following furnishes a good example of what may be accomplished in farming by laborious industry and perseverance. There are probably many such in our country, and it is proper that they should be held up for the encouragement of others. The writer of this article, it should be remembered, is located in a region which many look upon as very unfavourable to agriculture.

I commenced clearing land from a wilderness estate in 1820; the growth was heavy hard wood of beech, maple, birch, with some hemlock and spruce. I felled but little each year, at first, as I had neither ox, horse, nor man to help me, unless I hired or exchanged my own labour for them;—the latter I often did. I practiced clearing every movable thing from the land, sowing it with some kind of grain and grass seed. It scarcely ever failed to produce a good crop of grain, and afterwards grass in abundance, for ten, and sometimes for fifteen years. I have cleared, with the assistance of my own sons, principally, about one hundred acres of woodland. I have about twenty-eight acres well cleared of stones, which is in a good state of cultivation. My stock consists of oxen, cows, and young stock, to the number of twenty to twenty-five, one horse, and about forty sheep. I have plenty of hay for my stock, and sell from five to ten tons yearly. My barn, previous to 1846, was 40 by 50 feet, standing where the ground sloped to the southwest, about four feet in fifty. In 1846 I built an addition on the lower side of the old part, one hundred and two feet long and thirty wide. I have dug a cellar under the old part seven feet deep—dug a trench still deeper for drain under the wall, which is substantially built under the two sides and upper end of the old part, leaving the lower end immediately connected with the space or cellar under the new one, which is from six to ten feet deep,—without a single post to interfere with carting,—as the floor over it, with its contents, is supported by king posts. My cattle are watered under the new barn from a well. Young stock is fed at racks under the barn. The cattle are chiefly tied over the cellar of the old barn, and are kept abundantly littered with straw, &c. The manure is thrown into the cellar through a scuttle.

John McGlauflin.

Charlotte, Maine, March, 1847.

Fuel in Paris.

It is quite cold to-day, and I have been obliged to have a fire; I therefore purchased two francs' worth of wood. There is a *marchand de bois* across the street, who occupies not a spacious wood-yard, as you would probably imagine, but a small shop, and that shop, small as it is, is large enough to stow

many thousand francs' worth of this precious article. They would no more think of exposing it to the depredations of the needy and unprincipled, in the open air, than a silversmith with us, would pile up his wares in a yard; why, while the *marchand de bois* was looking away, some scoundrel might fill his pockets and be off. For two francs I got twenty-three sticks, short sticks, rather small; and for two sous each I purchased two bundles of kindlings in fagots. It is, I believe, about a franc and a half for fifty pounds. When a fellow was going to buy a foot, they hardly thought him sane, and inquired if he would pay on the spot. The shop of the *marchand de bois* is decorated outside with paintings of piles of wood in perspective, presenting a perfect El Dorado, like the piles of gold in the broker's windows, only less real; they sell also *charbon de terre* and *charbon de bois*. They also sell—it will make you laugh to hear—small pine cones, four for a sous, for fuel. In the winter they burn English coal, which is dear too, mixed with wood. The forests in France are mostly consumed, and great complaints are made of the high duty on English coal. —— astonished his barber by telling him he had burnt up while camping out, many thousand francs' worth of wood in one night! Their manner of sawing wood expresses the value they put upon it; instead of subjecting it to the rude contact of a saw-horse, they hold it carefully in their hands, and rub it up and down the saw; the sawdust is of course carefully preserved; they would as soon waste gold dust. A good deal might be said on the influence which the scarcity of fuel has had on the French character, driving them to the café and the spectacle, from the fireside.—*Paris Corres. Salem Gazette.*

Mice.

The harvest mouse is the smallest of all known British quadrupeds, only one-sixth of the size of the common house mouse, for two harvest mice placed in a scale will not do more than weigh down a single halfpenny. Its little nest is beautifully constructed of leaves, and sometimes the softer portion of reeds. About the middle there is a small hole, just large enough to admit the point of the little finger. This is the entrance to the nest, which the mouse closes up when it goes in quest of food; and yet this fairy structure, which a man might enclose in the palm of his hand, and which might be tumbled across the table like a ball without disarranging it, often contains as many as eight or nine little mice; for even when full grown the whole length of the head and body scarcely exceeds two inches. During the winter months it retires to its burrow under the ground, unless it should be fortunate enough to get into a corn-stack. It is one of the prettiest of our English animals, and may be kept in a cage like white mice, where it will amuse itself for several minutes at a time by turning round a wire wheel. Its chief food is corn, although it will occasionally feed upon insects.

How the harvest mouse contrives to give nourishment to eight or nine young ones in that round confined little nest, was a puzzle to that clever naturalist Gilbert White; and as he could not resolve so difficult a question, he imagined that she must make holes in different parts of the nest, and so feed one at a time. It is very amusing to watch the habits of this beautiful little creature in a cage; to see how she will twine her tail around the wires, clean herself with her paws, and lap water like a dog: it is the little tomtit of animals. Even the common mouse, which is so great a pest to our houses, is an elegantly shaped little animal, although it is such a plague in the cupboard and in the larder. Wherever man goes, it follows him; let him build ever so princely a mansion, he is sure to have the little mouse for a tenant. He walks in we cannot tell how, and when he has once obtained possession, he is in no hurry to start again. He helps himself to whatever he can get, without asking any one's permission; and he never saw a carpet in his life that he thought was too good for himself and his little companions to play upon.—*Rural England.*

The Potatoe.—Whether indigenous to Peru, or imported from the neighbouring country of Chili, it formed the great staple of the more elevated plains under the Incas, and its culture was continued to a height in the equatorial regions which reached many thousand feet above the limits of perpetual snow in the temperate latitudes of Europe. Wild specimens of this vegetable might be seen still higher, springing up spontaneously amidst the stunted shrubs that clothed the lofty sides of the Cordilleras, till these gradually subsided into the mosses and the short yellow grass, *pajonal*, which, like a golden carpet, was unrolled around the base of the mighty cones that rose far into the regions of eternal silence, covered with the snows of centuries.—*Prescott.*

The object of a rotation, is the production of the greatest profit in crops with the least exhaustion of the soil.

Agricultural Exhibition.

Premiums offered by the Philadelphia Society for promoting Agriculture, for the Exhibition, to be held at the Lamb Tavern, on the Lancaster turnpike road, one mile west of the Schuylkill, on Thursday and Friday, the 14th and 15th of October, 1847.

Horses.—For the best thorough-bred Stud Horse, $10.
For the next best do. Colman's Agricultural Tour.
For the best Stud Horse adapted to the field and road, $8.
For the next best do. Colman's Tour.
For the best thorough-bred Brood Mare, $8.
For the next best do. Colman's Tour.
For the best mare adapted to the field and road, $8.
For the next best do. Colman's Tour.
For the best Horse Colt between two and four years old, $6.
For the next best do. Colman's Tour.
For the best Filly or Mare Colt, do. $3.
For the next best do. $1.
For the best Horse Colt between one and two years old, $4.
For the next best do. Washington's Letters on Agriculture.
For the best Filly or Mare Colt, do. $4.
For the next best do. Washington's Letters.

Neat Cattle Over Two Years Old.—For the best Durham Bull over three years old, $10.
For the next best do. Colman's Tour.
For the best do. between two and three years old, $8.
For the next best do. Colman's Tour.
For the best Bull of Devon blood, $8.
For the next best do. Colman's Tour.
For the best Ayrshire Bull, $8.
For the next best do. Colman's Tour.
For the best Alderney Bull, $8.
For the next best do. Colman's Tour.
For the best Durham Cow over four years old, $8.
For the next best do. Colman's Tour.
For the best do. between two and four years old, $8.
For the next best do. Colman's Tour.
For the best Durham Heifer between two and three years old, $6.
For the next best do. Colman's Tour.
For the best Heifer of mixed breed between two and three years old, $4.
For the next best do. Washington's Letters.
For the best Heifer of Native breed, $4.
For the next best do. Washington's Letters.
For the best Cow of Devon blood, $6.
For the next best do. Washington's Letters.
For the best Ayrshire Cow, $6.
For the next best do. Washington's Letters.
For the best Alderney Cow, $6.
For the next best do. Washington's Letters.
For the best Cow of mixed blood, $4.
For the next best do. Washington's Letters.
For the best cow of Native breed, $4.
For the next best do. Washington's Letters.
For the best yoke of Working Oxen, reference being had to their performance, $10.
For the second best do. $6.
For the third best do. Colman's Tour.
For the best fat Ox or Steer, $6.
For the next best do. Colman's Tour.
For the best fat Heifer over three years old, $4.
For the next best do. $2.

Neat Cattle Under Two Years Old.—For the best Durham Bull between one and two years old, $6.
For the next best do. Colman's Tour.
For the best Devon Bull, do. $4.
For the next best do. Washington's Letters.
For the best Ayrshire Bull, do. $4.
For the next best do. $2.
For the best Alderney Bull, do. $4.
For the next best do. $2.
For the best Bull Calf between four months and one year old, of each of the above breeds, $2.
For the best Durham heifer between one and two years old, $6.
For the next best do. Washington's Letters.
For the best Devon do. $4.
For the next best do. $2.
For the best Ayrshire do. $4.
For the next best do. $2.
For the best Alderney do. $4.
For the next best do. $2.
For the best Heifer of mixed breed, do. $4.
For the next best do. $2.
For the best Heifer of Native breed, do. $4.
For the next best do. $2.
For the best Heifer Calf of each of the above breeds, between four months and one year old, $2.

Sheep.—For the best Bakewell or Leicester Buck over one year old, $4.
For the next best do. $2.
For the best do. under one year old, $2.
For the next best do. $1.
For the four best Ewes over one year old, $4.
For the four next best do. $2.
For the four best Ewe Lambs between four and twelve months old, $2.
For the next best do. $1.
For the best Southdown Buck over one year old, $4.
For the next best do. $2.
For the best do. under one year old, $2.
For the next best do. $1.
For the best Merino Buck over one year old, $4.
For the next best do. $2.
For the four best do. Ewes over one year old, $4.
For the next best do. $2.
For the four best Ewe Lambs between four and twelve months old, $2.
For the next best do. $1.
For the four best do. Ewes, $4.
For the next best do. $2.
For the best Cotswold Buck over one year old, $4.
For the next best do. $2.
For the best do. under one year old, $2.
For the next best do. $1.
For the two best do. Ewes over one year old, $4.
For the next best do. $2
For the two best do. Ewe Lambs, between four and twelve months old, $2.
For the next best do. $1.
For the best improved Buck of mixed breed, over one year old, $2.
For the next best do. $1.
For the four best Ewes, do. $2.
For the next best do. $1.

Hogs.—For the best Boar of any breed, over one year old, $4
For the next best do. $2.
For the best Boar do. over six months and under one year, $4.
For the next best do. $2.
For the best Sow do. over one year old, $2.
For the next best do. $2.
For the best Sow do. over six months and under one year, $4.
For the next best do. $2.
For the best Boar Pig between two and six months old, $3.
For the next best do. $2.
For the best Sow Pig do. $3.
For the next best do. $2.
For the five best Pigs, under two months old, $4.
For the five next best do. $2.

Poultry.—For the best pair of Jersey Blue Fowls, $2.
For the next best do. $1.
For the best pair of any other improved breed, $2.
For the next best do. $1.
For the best pair of Capons, $2.
For the next best do. $1.
For the best pair of Turkeys, $2.
For the next best do. $1.
For the best pair of Geese, $2.
For the next best do. $1.

For the best pair of Ducks, $2.
For the next best do. $1.

Agricultural Implements.—For the best Plough, the merits thereof to be decided by trial, $10.
For the next best do. Colman's Tour.
For the best Drill Machine, $4.
For the next best do. $2.
For the best Straw or Hay Cutter, $4.
For the next best do. $2
For the best Horse Power Straw or Stalk Cutter, $6.
For the next best do. Colman's Tour.
For the best Corn Sheller, $4.
For the next best do. $2.
For the best Wheat Fan, $4.
For the next best do. $2.
For the best display of Agricultural Implements, $10.
For the next best do. Colman's Tour.
Suitable premiums will be given for any improved Implement of merit, not included in the above.
The Ploughs intended for trial must be at the Exhibition during the whole time. Premiums will be awarded to the best ploughmen:
For the best, $5.
For the next best, Colman's Tour.

Agricultural Produce.—For the best five pounds of fresh butter, a silver Butter Knife, value $5.
For the second best do. Colman's Tour.
For the third best do. $2.
For the best Firkin or Jar of Salted or Preserved Butter, not less than 20 lbs., a Silver Butter Knife, value $5.
For the next best do. Colman's Tour.
For the best sample bushel of Red Wheat, $3.
For the next best do. $1.
For the best do. White Wheat, $3.
For the next best do. $1.
For the best sample bushel of Rye, $2.
For the next best do. $1.
For the best sample bushel of Flint Corn, $2.
For the next best do. $1.
For the best do. Gourd Seed Corn, $2.
For the next best do $1.
For the best do. Mixed Corn, $2.
For the next best do. $1.
For the best sample bushel of Oats, $2.
For the next best do. $1.
For the best sample bushel of Potatoes, $2.
For the next best do. $1.
For the best bushel of Sweet Potatoes raised in this State, $2.
For the next best do. $1.
For the best display of Agricultural Produce generally, $3.
For the next best do. Colman's Tour.
A suitable premium will be given for any new variety of Grain of improved quality.
A statement of the mode and manner of making and preserving the different kinds of Butter, will be required of competitors. The preserved or salted butter must have been put up at least two months previous to the Exhibition.
M. S. Powell, Seedsman, 23 Market street, above Front, Philadelphia, will take charge of any samples of Seeds intended for the Exhibition.
A Ploughing Match, for the trial of Ploughs and Ploughing, will take place on the second day of the Exhibition, the 15th of October, at nine o'clock.
☞ Stock entered for the foregoing Premiums cannot compete for others.
No animal that has previously taken the Society's first premium, will be allowed to compete in the same class.
Ample evidence will be required as regards the pedigree, age and character, of all stock entered for premium.
All premiums uncalled for within six months from the time of holding the Exhibition, will be considered as donations to the Society.
The Judges are authorised to withhold premiums where the object is not entitled to distinction; and where but one of a class is exhibited, they will award such premium as they think it merits. Those persons who intend bringing animals for competition, must inform the Committee of Arrangement before 10 o'clock on the first day of the Exhibition.
Premiums to be confined to animals owned exclusively in this State, except where assurance is given that they will be allowed to remain here at least nine months.
All Stock, &c, contributed, must remain on the ground during the two days of Exhibition.

ROBERT T. POTTS,
ISAAC W. ROBERTS,
DENNIS KELLY,
AARON CLEMENT,
DAVID GEORGE,
DAVID LANDRETH,
GEORGE BLIGHT,
MANUEL EYRE,
A. L. ELWYN,
A. S. ROBERTS,
Committee of Arrangement.

July 22, 1847.

The Horse.—I will state a few things that I have learned, and they may be of benefit to your readers. A horse that is driven on hard roads is liable to get stiff in the joints. In 1833 I had an animal, which after driving three or four days, got quite lame. An old Baltimore teamster told me to wash the mare's legs in a tolerably salt brine, which was done accordingly, three times a day for the balance of the journey. The stiffness disappeared in a few days, and I drove the mare 1,400 miles afterward, and there was no more trouble on that account. What pleased me most was, the mare had a very poor foot to hold a shoe, when I started. It was very brittle and hard. It would break out when a nail was put in. But it grew together at every shoeing. A blacksmith in New England remarked to me that her foot had a singular appearance; where he pared it was soft and tough. I account for it in this way; salt will attract moisture from the atmosphere, which keeps the foot moist all the time; and salt has nearly the same effect that grease has on a foot or a piece of timber. The drippings from salt on a floor if continued long, cannot be got off; the wood becomes moist and tough, and so with a horse's foot. After washing the legs, turn up the horse's foot, clean the bottom, pour the hollow full of brine and hold for a few minutes to soak the bottom. The practice of rasping the foot all over to toughen it is abominable.—*Farmer & Gardener.*

To Prevent Lamps from Smoking.—Soak the wick in strong vinegar, and dry it well before you use it; it will then burn both sweet and pleasant, and give much satisfaction for the trifling trouble in preparing it.

Don't give your boys the worst tools and then scold because they cannot do as much as *men.*

Fresh Peaches in Winter.

EARLY in April we had the pleasure of receiving from Samuel Wyman, Esq., of Baltimore, two tin cans, hermetically sealed, holding about two quarts each, bearing the following printed label:

"*Fresh Peaches*, put up in the natural state, without sugar, and suitable for a dessert, to be eaten with sugar and cream, etc. *Warranted to keep twelve months in any climate.* Put up by Edward Wright, 16 Hill street, Baltimore."

Mr. Wyman informs us that these peaches, which were of large size, were grown by himself; that he has made repeated trials of this, Mr. Wright's mode of preserving, with the details of which he is unacquainted; and adds, "I feel constrained to say that this process of preserving, whatever it may be, maintains the natural taste and flavor of the fresh fruit, in a degree far superior to any other with which I am acquainted."

On opening the cans, we found the peaches *halved*, and apparently lying in their own juice. When cut up with sugar, they are as nearly as possible like the fresh fruit in appearance and flavor, and to our own palate infinitely more delicious than any "preserved" fruit, as the term is usually applied—that is, to fruit "embalmed in sugar," and which retains none of the freshness of the natural state.

The process we should imagine to be a simple one, and is no doubt much the same as that employed by the French in preserving truffles, etc., though we think the specimens much more completely preserved than the so-called fresh fruit which we have seen sent from France.

We understand quite a business is carried on in this preserved fruit in Baltimore. The secret would, if as easily carried into practice as we should suppose, be worth a good deal to the country at large.—*Downing's Horticulturist.*

Strawberries and Milk.

A LETTER from H. C. Seymour, Esq., superintendent of the New York and Erie Railroad, to Mr. Marsh. the Secretary, says:

"The milk train of Tuesday night—22nd instant—took to New York 80,000 baskets of strawberries. These baskets are intended to contain one pint each; but say that three baskets contain one quart, which is quite within bounds. Then we had 26,667 quarts, or *eight hundred and thirty-three bushels.* These strawberries will no doubt weigh 65 pounds to the bushel, but say 60, then we had *twenty-five tons of strawberries alone.* The boxes and baskets weigh as much more, so that the freight was at least *fifty tons.* By the same train we had 28,000 quarts of milk, which weigh—a pint a pound—*twenty-eight tons*, and including cans, 35 tons; making a freight of *eighty-five tons* of strawberries and milk. The milk by both our trains equals fifty tons—50,000 qts.—daily; and including cans, 63 tons. The Rockland county people receive nearly $3,000 a day for their strawberries."

The New York Journal of Commerce remarks—"The value of such an avenue of communication to the city, can scarcely be estimated. It gives us the good things of the country in cheapness and abundance."

On Thursday, the 24th, 52,492 baskets of strawberries were received in New York by the Erie Railroad.

Twenty-eight thousand quarts of milk per day is *ten million, two hundred* and *twenty* thousand quarts a year, which, at *six cents a quart*—the *average* price previous to the opening of the New York and Erie Railroad—amounts to $613,200 per year, for an inferior article; but since the opening of this road the average price of *good* milk has been four cents—making an annual saving of $204,400 to the people of the city on *milk alone!!* to say nothing of the "*strawberries.*"

If such advantages result to the city from *one* item of provisions, when the road is only *one-fifth* completed, what may not be anticipated when the communication is opened to the lake and to the fruitful west? Who can estimate them? The economy of living and of transportation alone will be equal, in *five* years, to the *entire cost* of the road, even if it exceeds *ten millions* of dollars.—*Rail Road Journal.*

Pattern Farmer in Belmont County.

A correspondent of the Ohio Cultivator gives the following description of a new mode of fencing which he had lately met with in his rides, and we think it is so *rich* that our readers should not be deprived of it.—ED.

THE owner is a young man whose father died a year or two since, and left him a good farm; he has built a new house in a field close to the State road, and the fence encloses the *yard and garden.* The *modus operandi* is this: at the two front corners of his house, which is one story high, the logs project out about two feet; on these he lays a pole or two, pointing towards the road, and at the outer end he drives a dogwood fork in the ground, some three feet high, and on it lays the other end of the pole, and so on till

enclosed. It is the cheapest and *most convenient* fence I ever saw! The house being in the field, the cow can come to the door, the woman can just stoop a little, pass under the pole and she's at the cow's side; the hogs can come under the pole and eat at the door, and the cow cannot disturb them, and the owner can feed them without going out of the house. He keeps no out-houses, not even a pig-pen, or hen-house, consequently no manure accumulates in his way; he gathers his corn as he *uses* it from the field, thereby depriving the rats of a living from him; his other grain is no trouble to him, for the neighbours' cattle generally gather it on the shares, they take the three-thirds—he is now so completely fixed, he can rest nineteen-twentieths of his time from toil, and which I am told he actually does—happy man! The cause of all this—last winter he became a subscriber for the Ohio Cultivator; but—he never reads it.

Root Pruning and the Management of the Pear Tree.

The very finest pears I have ever seen or tasted have been produced on pear trees grafted on the quince. I use no stocks but the pear and the quince; the former for orchard trees, or for those who prefer the pear stock; the latter solely for garden trees, principally to form prolific pyramidal trees, for which they are unrivalled both in beauty and fertility. I can illustrate the good effects of root-pruning very forcibly in my specimen orchard.

About thirty years ago, my father planted some rows of pear trees in a portion of the nursery, then a recent purchase; these were all common sorts of pears, standards, grafted as usual on the pear stock. They grew most luxuriantly for some eight or ten years, when their leaves began to change from their usually vivid green to a light yellow; in a year or two this yellow tint increased till their foliage was really of a bright straw colour; the trees soon after all died, so that, at the end of fifteen years, not a tree was left on this portion of the nursery, the subsoil of which, I must add, is hard white clay, full of chalk stones; this peculiar soil occupies a very small space, not more than a quarter of an acre, as the neighbouring soil is a tender, sandy loam.

When I came to years of thinking, the untimely fate of these pear trees was often present to my mind, for I remembered so vividly with what pleasure I had filled my pockets from them. I at that time also found that, to be able to know anything about pears, I must have a specimen tree of every kind that I cultivated. No other but this "pestilent spot" of earth happened to be just the place most eligible as a site for my specimen ground. What could I do? I did not then think of root-pruning, but I thought that I should find some way or other to avert the untimely fate of my trees; I therefore planted them in the usual way, digging the holes about two feet in depth, and mixing some manure and compost with the earth taken from the holes, but leaving the hard clayey subsoil below, to the depth of two feet, untouched. I watched my trees narrowly after four or five years, as I then expected to see traces of the effects of the clay soil upon them. I think some eight years must have passed and gone before their foliage turned yellow. My first thought said, remove them to a different site and soil; second thought, take them up and give them some fresh compost, they will last a few years, and you can then find a good place for them; third thought, if you can renovate them for a few years by taking them up and replanting, why not do this periodically, so as to keep your trees healthy; the site is good,—make the soil equally so; fourth thought, what occasion is there to remove the tree? cut its principal roots, leaving those that are fibrous; and so I became a pruner of roots.

In my specimen ground are several standard pear trees from eight to ten years old; these terminate long rows of standards, left to grow as nature dictates, both root and branch, except occasional thinning of their heads. These, it must be recollected, are among my root-pruned specimen trees, a great number of which are from twelve to fifteen years old. They have had their roots pruned three times within these eight years, the last time in December, 1844. They are now full of health, and foliage, and fruit,—in fact, all that I can wish them to be. The standard trees, with roots unpruned, have their leaves yellow, and are, I fear, hastening to death.—*Hovey's Magazine of Horticulture.*

Prices of Breadstuffs in Europe for thirty years past.

Hon. Charles Hudson, of this State, in a speech at the last session of Congress, condensed the following review of the prices of bread-stuffs in Europe for the last thirty years:

But our purpose is, at present, more particularly to show from Tooke's history of prices, the state of the crops, and the grain

market of England for the last thirty years, the prices stated being in shillings sterling, per quarter of eight bushels each, or 480 lbs.

In 1816: There was a lamentably deficient harvest, and wheat rose from 55.6 per quarter in February, to 74.11 in June, 82.1 in August, 90.10 in October, 103.7 in December.

In 1817: There was almost a famine in France, and large purchases were made in England, late in the spring, for the French government. The price was 104 in January, and rose to 112.8 in June; but from the fine weather both in France and England after that time, it fell in July to 102.6, in August to 86.5, and in September to 78.8.

In 1818: The price was 84.10 in January, 89.8 in April and 86.6 in July, 81.3 in August, and 80.8 in December.

In 1819: The average price was, in January, 79.3, in June, 68.10, in December, 66.3.

In 1820: It had risen in August to 72.5; but in December it fell to 54.6.

In 1822: Early in the season the price of wheat was about 50; but in December the average price was 38.11.

In January, 1823, the average price was 40.4; and rose in June to 62.5; and fell again in October to 46.6; in December it rose again to 50.8.

In March, 1824, it was 65.6, but declined to 65.4 in December.

In May, 1825, it was 68.9; in September, 66.7, in December, 63.

In January, 1826, it was 60.3; and fell in March to 55.7; and closed in December at 55.8.

In 1827, it was in January, 53.5; in July, 59.6; in August, 57.11; in September, 55; in December, 50.2.

In 1828, it was in May, 55.3; in June, 54.9; in July, 54; in November, 73; in December, 71.8.

In 1829, much of the crop being of bad quality, sold for 50; best quality brought an average of 72.6.

In 1830, in January, it was 54.4; in April, 63.11; in August, 70.5; in October, 60.10; in December, 64.11.

In 1831, in February wheat sold for 71.10; in August it was 61.11; in December, 58.3.

In 1832, it was 61.5 in July; in December, 52.6.

In 1833, it was 51.1 in January; and 51.6 in June; in August, 53.5; in December, 47.10.

In 1834 it continued to fall from 45 in the early months throughout the year, till, in December, it sold for 39.6.

In 1835, wheat sold in April for 37.10; in July, 41; but it fell again in December to 35.4; being but little more than one-fourth of what it brought at the close of the last century.

In 1836, in January, the price was 36; in June, 48.11; in October, 46.4; in December, 57.9—an advance of seventy per cent. upon the price of December, 1835.

In 1837, it fell again, till in May it was 52.10; in June, 54.9; in August, 57.5; in September, 54.11; in December, 51.3.

In 1838, in January, 53.5; in February, 55.5; in March, 56.6; in August, 73.8; in September it fell to 64.9; but it rose again till, towards the last of December, it was 78.4.

In 1839, in January, it reached 81.6; in in April it fell to 70.1; in July and August it was 71.8; in December, 66.11.

We have Tooke's prices no later than this year, and therefore have only the price, on the 1st of November, to 1843, as given in Parliament by Lord John Russell, as follows: In 1840, November 1st, 63; in 1841, November 1st, 63.2; in 1842, November 1st, 50.

In 1843, the price in February was 51; in June, 49; in August, 62; in December, 51.8.

In June, 1844, it was 55.8; in August, 40.1.

In 1845, in June, 47.10; in August, 57; in December, 58.6.

In January, 1846, it was 56.3; in March, 54.10; in August, 47.5; in October, 58.10; in November, 62.3; in December, 60.3.

In 1847, up to the present time, January 2nd, 64.4; January 20th, 73.3; February 6th, 73.10; February 13th, 71.10; February 27th, 74.6; March 20th, 75.10; March 27th, 77; April 10th, 74.—*Massachusetts Ploughman.*

Good and Bad Farming.

Look at the contrast between a good farmer and a bad one—between a neat thrifty cultivator of the soil, and a slack and slovenly one. The buildings of the one, whether large or small, are all in good repair. The premises about them are clean, and unencumbered by piles of rubbish and brush. His wood is cut and placed under cover in proper season. His tillage and mowing fields are clean of weeds, bushes, and stones. His walls and fences have no unsightly gaps. His fruit trees are well trimmed and well cultivated, and are kept free from cattle and caterpillars. His barn-yard or barn-cellar evinces the high value he places on manure, by the care he bestows in making and saving it, and his lands from year to year, show that they experience the full benefit of a right application of it. He is at work, boys

and all, before the sun. While he finds time for the discharge of his political and other public duties, he spends little or none of it by the way-side, in discussing the affairs of the nation or the gossip of the village. He takes a newspaper to tell him how the government and the world jog on, and an agricultural paper to give him an idea of the improvements to be made in his own occupation.

The buildings and premises of the other exhibit many a symptom of neglect and premature decay. A barn door, perhaps, for loss of hinges, is propped up by rails or stakes. The frame work of a shed is all that remains of what was once a shelter for his stock. Brushwood and trunks of trees lie in fantastic confusion about his doors, whilst the skeletons of departed carts, and wheels, and sleds, and ploughs line the road side for a considerable distance, as you approach his dwelling. Walls and fences are so enveloped in bushes, as to be almost imperceptible. His barn-yard is washed and drained by a convenient declivity, leading either to the road side or a neighbouring stream. His tillage land is impoverished by repeated croppings and a stinted allowance of food. Thistles, johnswort and mullein, or some similar specimens of vegetation, hold title to his mowing fields by right of uninterrupted occupation. He rises not before the sun tells him it is day. He is generally behindhand in his work. His crops suffer for want of due care and harvesting. He carries to market an inferior article, gets an inferior price, and then complains to everybody he meets of hard times, and the hard life a farmer has to lead. Of course, he is quite ready to lay the blame upon any shoulders but his own, and the government, either state or national, has very often to bear no small share of it.

By a process recently invented, the rays of the sun, striking upon a person's countenance, portray, in an instant of time, an exact miniature of his features. The same art has also been applied to give a faithful birdseye view of groups of objects and men. Every attitude, every lineament is struck off, in a twinkling, with all its beauties or blemishes, just as they are in the originals. Suppose the Daguerreotype were employed to seize the striking points of each farm in this county, and that the pictures, thus produced, were suspended on these walls for inspection. Would there be no contrasts exhibited in the panorama? No features which would willingly be erased? No whole pictures which would gladly be turned face to the wall?

No farmer who has any pretensions to the name, when he looks upon the two extremes to which his noble art may be elevated or degraded, would hesitate which to choose for the object of his endeavours. If he elect the good farmer as the model of his imitation, he will need something more than mere wishes and resolutions,—than sudden starts and occasional exertions, to realize in his character the enviable distinction of a skilful cultivator of the soil. It is not the work of a day or of a year, but of many years, truly to earn and deserve this title. It is laborious, patient, persevering and intelligent working, that is to do it. He must take an honest pride in his profession; never to be ashamed of his hard hands, homespun frock, or toilsome occupation. His motto should be, "Whatever is honest is honourable," and farm labour is pre-eminently so. His heart and his head, as well as his muscles and sinews, must be in his work. He must endeavour not only to make his farm profitable, to gain from it the most he can at the least expense, but to keep it in a constantly progressive state of improvement. He will have his attention awake at all times, to the means of effecting this. He will not lay out for cultivation more ground than he can manure well, cultivate well, and leave in better tilth than he found it. He will remember another axiom of the good farmer, "that whatever is worth doing at all, is worth doing well." He will ever bear in mind, too, that his own farming, however excellent and successful, may still be made better and more profitable.—*Address of A. W. Dodge, Esq., before Barnstable Agricultural Society.*

The Woodpecker.

In more than fifty orchards which I have myself carefully examined, those trees which were marked by the woodpecker—for some trees they never touch, perhaps because not penetrated by insects—were uniformly the most thriving, and seemingly the most productive; many of these were upwards of sixty years old, their trunks completely covered with holes, while the branches were broad, luxuriant, and loaded with fruit. Of decayed trees, more than three-fourths were untouched by the woodpecker. Several intelligent farmers with whom I have conversed, candidly acknowledge the truth of these observations, and with justice look upon these birds as beneficial; but the most common opinion is, that they bore the trees to suck the sap, and so destroy its vegetation; though pine and other resinous trees, on the juices of which it is not pretended they feed, are often found equally perforated.

Were the sap of the tree their object, the saccharine juice of the birch, the sugar maple, and several others, would be much more inviting, because more sweet and nourishing, than that of either the pear or apple tree; but I have not observed one mark on the former, for ten thousand that may be seen on the latter. Besides, the early part of spring is the season when the sap flows most abundantly; whereas, it is only during the months of September, October, and November, that woodpeckers are seen so indefatigably engaged in orchards, probing every crack and crevice, boring through the bark, and, what is worth remarking, chiefly on the south and south-west sides of the tree, for the eggs and larvæ deposited there by the countless swarms of summer insects. These, if suffered to remain, would prey upon the very vitals, if I may so express it, of the tree, and in the succeeding summer give birth to myriads more of their race, equally destructive.

Here, then, is a whole species, I may say, genus of birds, which Providence seems to have formed for the protection of our fruit and forest trees from the ravages of vermin which every day destroy millions of these noxious insects that would otherwise blast the hopes of the husbandman, and which even promote the fertility of the trees; and, in return, are proscribed by those who ought to have been their protectors, and incitements and rewards held out for their destruction. Let us examine better into the operations of nature, very many of our mistaken opinions and groundless prejudices will be abandoned for more just, enlarged, and humane modes of thinking.—*Wilson's Ornithology.*

Bay-side Farming in Talbot Co., Md.

The following Report from a district in which are much enterprise and improvement in farming operations, we publish with pleasure at the request of a friend.—Ed.

The Committee on "Bay-side Farming," appointed by the Trustees of the Agricultural Society for the Eastern Shore of Maryland, beg leave to report, in part:

That they have had the interesting subject referred to them, under consideration for several months past, and have found some difficulty in their investigations, in consequence of the want of facts on which they can rely. They have, at last, been obliged to depend upon tradition and their own limited observations.

That great improvements have been made in the Agriculture of this beautiful region is manifest to all who have any acquaintance with it, and your Committee will endeavour to show how they have been brought about.

The waters of the Chesapeake bay, Miles river and Choptank, nearly embracing this peninsula, afford large annual supplies of sea-ware, or sea-ores—and their banks contained large quantities of decomposed oyster shells, now nearly exhausted. It is believed that the first man in the district who used sea-ores to any considerable extent, as manure, was the late Lloyd Tilghman, Esq., as far back as sixty years; but he does not appear to have had many immediate followers. About thirty years ago much attention was drawn to crops of corn and wheat grown by Mr. William Hambleton, on land proverbially poor; principally by the use of these materials, aided by a well-littered farm-yard. This example had a powerful effect. It showed, clearly, that increased products were within the reach of all; and the use of these valuable articles, so long neglected, extended rapidly. Wherever they were within reach they were used, and invariably with success. Many who had no bank-shells resorted to lime from oyster-shells collected from creeks and rivers washing their shores, and this practice still continues with good effect.

The confining of cattle during the whole of the winter season on large accumulations of rich earth, pine rushes, straw, &c., in yards with permanent or temporary shelters, about the same time became more general, and appeared to suggest the penning of them on similar heaps during the summer—now almost universal.

Your Committee consider this a great improvement on the "ambulatory" cow-pen of the last generation.

The pen is generally from thirty to forty yards square—half-worm fence staked and capped, with bars or a rough gate; a good foundation of marsh or rich soil is covered over with pine rushes ready to receive the cattle in May. In this pen they continue to be confined every night until late in October, the pen receiving fresh stuff about once a fortnight. In this way the bank, under favourable circumstances, becomes more than two feet deep, and is hauled out before winter, when the fields are firm, ready for spreading in the spring. Such a heap, with the winter crop of manure, is frequently sufficient to dress over the field intended for corn. The pen is generally made in that field, and supplies of earth are obtained from the woods and from turning rows, or low places ploughed up as drains, wherever required. In lands so level as those in the

Bay-side, the removal of the rich soil on a head-land is important; it acts as a broad though shallow ditch, and discharges much water after heavy falls of rain, while the leads serve to conduct it off without obstructing cultivation. They are generally about three feet wide and the usual depth of ploughing.

A little more than twenty years ago the rich deposits of earth found at the heads of creeks began to be hauled out as manure. It appears wonderful that these natural compost beds should so long have been overlooked. They have been used to great extent and with unfailing advantage.

No marl has been found in the district, except in the neighbourhood of the Royal Oak, on the lands of Major Dawson, Captain Moister and Mr. Townsend, who use it with much success.

Our waters afford an annual supply of fish-manure in the Skate. They arrive, unfortunately, at a busy season. Some are taken by farmers who have seines, while others buy of those who make a business of catching them for sale.

Ashes and guano in a few cases have been imported from Baltimore and applied with satisfactory results. Ashes can be laid down on our shores at a cost of twelve and a half or thirteen and a half cents. An enterprising practical farmer, Mr. Edward Covey, last year purchased and applied no less than 5,500 bushels, and this after ascertaining their value from several years' experience. Your Committee consider this a fact of great value. It is difficult to introduce manures which require a direct outlay of money; yet it is obviously proper, by all reasonable means, to enrich our lands that our labour be not wasted.

The manner of using sea-ores is various. Some put them in large heaps to be distributed at leisure; others dress their cow-pens with them, or drop them in the field to be spread at some distant day. The best way is to double-list* them in at once on corn land to be crossed and planted next spring; thus evaporation is avoided and labour saved.

Your Committee think it unnecessary to describe the mode of cultivation farther than to remark that it is much more thorough than formerly, and altogether in ridges. Few omit to sow clover-seed; but little clover is cut for hay. It is either grazed off or turned in. Plaster of Paris is not used, no benefit having been found from repeated experiments.

The four-field system, without fallow, is thought to be the best for the improvement of land, a field of clover lay to be added when in sufficient heart to bear the change—making one in corn, two in wheat and one in pasture. This is believed to be the most profitable course of husbandry, and is followed by the best and most successful farmers in the district. The old modes of securing the corn crop and fodder still continue. The seeding of wheat commences the first week in October and ends early the next month. Some of those who have no fallow are enabled to house their corn before they begin to seed wheat.

In conclusion, your Committee, in the absence of records of crops, are under the necessity of resorting to conjecture; and they hope that they will not be deemed extravagant when they express the opinion that the products of the Bay-side district have been, within the last twenty or thirty years, quadrupled.

All which is respectfully submitted.

S. Hambleton,
W. H. Harrison.

Talbot Co., Md., Feb. 15th, 1847.

* In this level country the cultivation is uniformly in narrow ridges, and the backing of four furrowslices together in the furrow between two of the ridges is called "Double-Listing."

Horticultural Premiums.

The Pennsylvania Horticultural Society offers at its Autumnal Exhibition, to be held on the 15th, 16th and 17th of next month, the following premiums. The usual monthly displays this summer have been no less attractive than last, continuing to offer to the admirer of rare plants a delightful gratification, very much at the expense and trouble of others, and to the lover of fine fruit and vegetables, the temptation of *trying his hand to raise them* —Ed.

Grapes (*Native*).—For the best, named collection to be exhibited, $5.

For the second best, do. do. $3.

For the best, six bunches, Isabella, to be exhibited, $3.

For the second best do. do. do. $2.

For the third best do. do. do. $1.

For the best do. Catawba, do. $3.

For the second best do. do. do. $2.

For the third best do. do. do. $1.

For the best do. Elsinborough, do. $3.

For the second best do. do. do. $2.

For the third best do. do. do. $1.

For the best do. of another variety, do. $3.

For the second best do. do. do. $2.

For the third best do. do. do. $1.

Grapes, (*Foreign*) *raised under glass.*

For the best, named collection to be exhibited, $5.

For the second best do. do. do. $3.

For the best Hamburgh, four bunches to be exhibited, $3.

For the second best do. do. do. $2.

For the best Hansteretto, four bunches to be exhibited, $3.
For the second best do. do. do. $2.
For the best, Frankenthal, do. do. $3.
For the second best do. do. do. $2.
For the best Chasselas, do. do. $3.
For the second best do. do. do. $2.
For the best White Muscat of Alexandria, four bunches, $3.
For the second best do. do. do. $2.
For the best Frontignac, four bunches to be exhibited, $3.
For the second best do. do. do. $2.
For the best St. Peter's, do. do. $3.
For the second best, do. do. do. $2.
For the best of another variety, do. do. $3.
For the second best do. do. do. $2.

GRAPES, (*Foreign,*) *raised in the open air.*

For the best named collection to be exhibited, $5.
For the second best do. do. $4.
For the third best do. do. $3.
For the best, four bunches, of a black variety to be exhibited, $4.
For the second best do. do. do. $3.
For the third best do. do. do. $2.
For the best do. of a white variety, do. $4.
For the second best do. do. $3.
For the third best do. do. do. $2.

PEACHES.—For the best, one bushel to be exhibited, $7.
For the second best do. do. $5.
For the third best do. do. $3.
For the best, one peck do. $3.
For the second best do. do. $2.
For the third best do. do. $1.
For the best, two dozen do. $2.
For the second best do. do. $1.

NECTARINES.—For the best, one dozen to be exhibited, $2.
For the second best do. do. $1.

PLUMS.—For the best, two dozen to be exhibited, $3.
For the second best do. do. $2.
For the third best do. do. $1.

MELONS.—For the best, three in number to be exhibited, $2.
For the second best do. do. $1.

WATER MELONS.—For the best, Spanish variety, three in number, $3.
For the second best do. do. $2.
For the third best do. do. $1.
For the best of another variety, do. $3.
For the second best do. do. $2.
For the third best do. do. $1.

PEARS.—For the best and most numerous, named varieties, $8.
For the second best do. do. $6.
For the third best do. do. $4.
For the fourth best do. do $2.
For the best Seckel, half a peck to be exhibited, $3.
For the second best do. do. $2.
For the third best do. do. $1.
For the best Doyenne blanc or Butter, one peck to be exhibited, $3.
For the second best do. do. do. $2.
For the third best do. do. do. $1.
For the best of another variety, half a dozen to be exhibited, $2.
For the second best do. do. do. $1.
For the best, half a peck, a different variety, do. $2.
For the second best do. do. do. $1.

APPLES.—For the best and most numerous, named varieties, $8.
For the second best do. do. $6.
For the third best do. do. $4.
For the fourth best do. do. $2.
For the best, one bushel to be exhibited, $3.
For the second best do. $2.
For the third best do. $1.
For the best, one peck do. $2.
For the second best, do. $1.

QUINCES.—For the best, half a peck do. $3.
For the second best do. $2.
For the third best do. $1.

POTATOES.—For the best, one bushel do., $5.
For the second best do. $4.
For the third best do. $3.
For the fourth best do. $2.
For the fifth best do. $1.
For the best American Seedling, of superior quality, $5.
For the best Sweet, one bushel to be exhibited, $3.
For the second best do. $2.
For the third best do. $1.

BEETS.—For the best, one dozen do. $2.
For the second best do. $1.

CARROTS.—For the best, two dozen do. $2.
For the second best do. $1.

SALSIFY.—For the best do. $2.
For the second best do. $1.

ONIONS.—For the best, four dozen do. $2.
For the second best do. $1.

CABBAGE.—For the best, six heads do. $3.
For the second best do. $2.
For the third best do. $1.
For the best do. Red Dutch, to be exhibited, $2.
For the second best do. do. do. $1.

LETTUCE.—For the best do. to be exhibited. $2.
For the second best do. do. $1.

ENDIVE.—For the best, blanched, six heads do. $2.
For the second best do. do. do. $1.

CHARD.—For the best, six plants do. $2.
For the second best do. do. $1.

CHARDOON.—For the best do. blanched, do. $2.
For the second best do. do. $1.

Celery.—For the best do. blanched, do. $2.
For the second best do. do. $1.
Celeriac.—For the best do. do. $2.
For the second best do. do. $1.
Egg Plants.—For the best, six fruit do. $3.
For the second best do. do. $2.
For the third best do. do. $1.
Tomatoes.—For the best, one peck do. $3.
For the second best do. do. $2.
For the third best do. do. $1.
Maize, or Indian Corn, *for table use.*—For the best, three dozen, $2.
For the second best do. $1.
Cranberries.—For the best, one peck, cultivated, to be exhibited, $2.
For the second best do. do. do. $1.
Pumpkins.—For the best two largest, $2.
For the second best do. $1.
Peas, Green.—For the best and largest quantity to be exhibited, $2.
For the second best do. do. do. $1.
Vegetables.—For the best display, $8.
For the second best do. $6.
For the third best do. $4.
For the fourth best do. $2.
For the fifth best do. $1.
Honey.—For the best do. $5.
For the second best do. $3.
For the third best do. $2.
Dahlias.—For the best, 20 blooms, named varieties to be exhibited, $3.
For the second best do. do. $2.
For the best American seedling, parti-coloured, $2.
For the best American seedling self-coloured, $2.
For the best ten blooms, by amateurs, named varieties, $3.
For the second best do. do. do. $2.
For the best bloom do. do. $2.
Roses.—For the best display of six named varieties to be exhibited, $3.
For the second best do. do. do. do. $2.
Russellia juncea.—For the best specimen in flower, in a pot, $1.
Manettia glabra.—For the best specimen in flower, in a pot, $1.
Hoya carnosa.—For the best do. $1.
Verbena.—For the best do. $1.
Verbenas.—For the best, three varieties in pots, to be exhibited, $3.
For the second best do. $2.
Ferns.—For the best display in pots, do. $2.
Petunias.—For the best two specimens, do. $2.
Achimenes.—For the best display to be exhibited, $3.
Orchideæ.—For the best do. $3.

Designs formed of cut flowers, etc.—For the best and most appropriate, $40.
For the second best do. $30.
For the third best do. $20.
For the fourth best do. $15.
For the fifth best do. $12.
For the sixth best do. $10.
For the seventh best do. $9.
For the eighth best do. $8.
For the ninth best do. $7.
For the tenth best do. $6.
For the eleventh best do. $5.
Bouquets—*To be confined to those suitable for the centre-table.*
For the best and most approved, $7.
For the second best do. $5.
For the third best do. $3.
For the fourth best do. $1.
For the best, of indigenous flowers, &c., $5.
For the second best do. $3.
For the best Basket of Flowers, $5.
For the second best do. $3.
For the third best do. $2.
Wreaths.—For the best pair, for festooning, $7.
For the second best do. $5.
For the third best do. $3.

Hints to Men of Business.—Be punctual and attentive. Let your word be sacred, and your engagements inviolable. Keep your accounts straight. Many a man has lost a fortune by carelessness. The little time and trouble it takes day by day, to keep debit and credit, and file away bills that have been paid, is nothing to be compared to the future benefits. No man is perfect, and the most honest may forget that you have adjusted your account, and present his bill again. If you feel sure you have cancelled the debt, you may not convince your creditor of the fact. But if you have preserved his bill receipted, there can be no mistake or further trouble about it.—*Exchange paper.*

It is a pretty general opinion among Bee raisers, that the swarms should not be kept in a Southern exposure during the winter. The bees are apt to be tempted to leave the hive, and thus become chilled and disabled from returning, before they are aware. In summer they should not be exposed to the sun, but shaded.

The Vine prefers hilly, stony ground, with an eastern or southern aspect, and its roots like to penetrate into the crevices of rocks. Uncultivated it produces less, but lives for ages, and its trunk may acquire a prodigious volume. Cultivation, in making it more fruitful, shortens its life.

Pruning,

As practised in the garden, has for its object the regulation of the branches to secure the due production of blossom and maturity of fruit. If carried to too great an extent, that object is not attained, for every tree requires a certain amount of leaf-surface for the elaboration of its sap; and, therefore, if this be reduced too much, blossom buds are produced less abundantly, for leaves are more necessary for the health of the plant, and by a wise provision the parts less requisite for individual vigor are superseded by the parts more needed. On the other hand, if the branches are left too thick, they overshadow those beneath them, and so exclude the light, as to prevent that elaboration of the sap, without which no blossom buds are formed, but an excessive production of leaves, in the vain effort to attain by an enlarged surface that elaboration which a smaller surface would effect in a more intense light. "The season for pruning must be regulated in some degree by the strength of the tree; for although, as a general rule, the operation should not take place until the fall of the leaf indicates that vegetation has ceased, yet if the tree be weak, it may be often perforated with advantage a little earlier; but still so late in the autumn as to prevent the protrusion of fresh shoots. This reduction of the branches before the tree has finished vegetating, directs a greater supply of sap to those remaining, and stores up in them the supply for increased growth next season. If the production of spurs is the object of pruning a branch, it should be pruned so as to leave a stump; because as the sap supplied to the branch will be concentrated upon those buds remaining at its extremity, these will be productive of shoots, though otherwise they would have remained dormant, it being the general habit of plants first to develop and mature parts that are furthest from the roots. It is thus the filbert is induced to put forth an abundance of young bearing wood, for its fruit is borne on the annual shoots, and similar treatment to a less severe extent is practised upon wall fruit."—*Princ. of Gardening.*

The mystery of pruning consists in being well acquainted with the mode of the bearing of the different sorts of trees, and forming an early judgment of the future events of shoots and branches, and many other circumstances, for which some principal rules may be given; but there are particular instances which cannot be judged of but upon the spot, and depend chiefly upon practice and observation. Peaches, nectarines, apricots, &c., all produce their fruit principally upon the young wood of a year old; that is, the shoots produced this year bear the year following; so that in all these trees, a general supply of the best shoots of each year must be everywhere preserved at regular distances, from the very bottom to the extremity of the tree on every side; but in winter pruning, general shortening, less or more, according to the strength of the different shoots, is necessary, in order to promote their throwing out, more effectually, a supply of young wood the ensuing summer, in proper place for training in for the succeeding year's bearing.

Vines also produce their fruit always upon the young wood shoots of the same year, arising from the eyes of the last year's wood only; and must, therefore, have a general supply of the best regular shoots of each year trained in, which, in winter pruning, must be shortened to a few eyes, in order to force out shoots from their lower parts, only properly situated to lay in for bearing the following year.

Figs bear also only upon the young wood of a year old, and a general supply of it is, therefore, necessary every year; but these shoots must at no time be shortened, unless the ends are dead, because they always bear principally towards the extreme part of the shoots, which, if shortened, would take the bearing or fruitful parts away; besides, they naturally throw out a sufficient supply of shoots every year for future bearing, without the precaution of shortening.

Apple, pear, plum, and cherry trees bear principally on spurs, arising in the wood from two or three, to ten or twenty years old, the same branches and spurs continuing bearing a great number of years; so that, having once procured a proper set of branches in the manner already directed to form a spreading head, no further supply of wood is wanted than some occasional shoots now and then to supply the place of any worn out or dead branch. The abovementioned spurs or fruit buds are short robust roots from about half an inch to one or two inches long, arising naturally, first towards the extreme parts of the branches of two or three years old, and, as the branch increases in length, the number of fruit buds increases accordingly.

In pruning always cut quite close, both in the summer and winter pruning, which, in the summer pruning, if attended to early, while the shoots are quite young and tender, they may readily be rubbed off quite close with the thumb; but when the shoots become older and woody, as they will not readily break, it must be done with a knife, cutting them as close as possible; and all winter pruning must always be performed

with a knife. In pruning in summer, the necessary supply of regular shoots left for training in, should never be shortened during this season, unless to particular shoots, to fill a vacancy; for, by a general shortening in this season, all the shoots so treated would soon push again vigorously from every eye, and render the tree a thicket of useless wood. Therefore, all sorts, whether they require shortening in the winter pruning or not, should, in the summer dressing, be laid in at full length; but towards the end of August, the extreme points may be pinched off with great advantage. The sap is thus made to complete the growth of the shoot, and not to increase its length; and it is too late in the season for fresh shoots to be induced.

Summer pruning is a most necessary operation. Young shoots require thinning to preserve the beauty of the trees and encourage the fruit; and the sooner it is performed the better. It is, therefore, advisable to begin this work in May, or early in June, removing all superfluous growths and ill placed shoots, which may be performed with considerably more expedition and exactness than when after the trees have shot a considerable length. Where, however, a tree is inclined to luxuriancy, it is proper to retain as many of the regular shoots as can be commodiously trained in with any regularity, in order to divide and exhaust the too abundant sap. It will be necessary to review the trees occasionally, in order to reform such branches or shoots as may have started from their places, or taken a wrong direction; also that, accordingly as any fresh irregular shoots produced since the general dressing may be displaced; and, likewise, as the already trained shoots advanced in length, or project from the wall or espalier, they should be trained in close.

In the winter pruning, a general regulation must be observed, both of the mother branches, and the supply of young wood laid in the preceding summer; and the proper time for this work is any time in open weather, from the fall of the leaf in November, until March; but the sooner the better. In performing this work, it is proper to unnail or loosen a chief part of the branches, particularly of peaches, nectarines, apricots, vines, and other trees requiring an annual supply of young wood. First look over all the principal or mother branches, and examine if any are worn out, or not furnished with parts proper for bearing fruit, and let such branches be cut down to the great branch from which they proceed, or to any lower shoot or bottom part, leaving these to supply its place. Likewise examine if any branches are become too long for the allotted space, either at sides or top, and let them be reformed accordingly, by shortening them down to some lower shoot or branch properly situated to supply the place, being careful that every branch terminates in a young shoot for a leader, and not stumped off at the extremity. From the principal or larger branches pass to the shoots of the year which were trained up in summer, first cutting out close all foreright and other irregular shoots that may have been omitted in the summer pruning; likewise all very weak shoots, and those of very luxuriant growth, unless it be necessary to keep some to supply a vacant place. In this pruning, as in the summer dressing, it is of importance to have a strict eye to the lower parts of wall-trees, &c., to see if there is any present vacancy, or any that apparently will soon happen, in which cases, if any good shoot is situated contiguous, it should be trained in, either at full length, or shorten it to a few eyes, to force out two or more shoots, if they shall seem necessary; for precaution should ever be observed in taking care to have betimes a sufficient stock of young wood coming forward to fill up any casual vacancy, and substitute a new set of branches in place of such as are either decayed or stand in need of retrenchment.

Sometimes in wall-trees and espaliers there are many large disagreeable barren spurs, consisting both of old worn out fruit spurs, and of clusters of stumps of shortened shoots projecting considerably from the branches, occasioned by unskilful pruning, when retrenching the superabundant and irregular shoots which, instead of being cut out close, are stumped off to an inch or two long. At this season of pruning, it is advisable to reform them as well as possible, by cutting all the most disagreeable stumps close to the branches, leaving these at full length, especially if apples, pears, &c., and reserve an occasional supply of young wood in different parts, and thus, in two or three years, you may reduce such trees to a regular figure and a proper state of bearing.

Too severe pruning is greatly prejudicial to the health of some sorts of fruit. Plums and cherries, in particular, are often greatly damaged by a too severe discipline of the knife, these trees being very liable to gum by large amputations. It is, therefore, of importance to attend to these trees well in the summer pruning, to retrench all the superfluous and irregular shoots while quite young, and pinch others occasionally where wood is wanted to fill vacancies, so as to require but little pruning out of large wood in winter.—*Johnson's Dict'ry of Gardening.*

The Potatoe.

Solanum tuberosum.

This plant is a native of South America. Two English travellers, Messrs. Caldcleugh and Baldwin, were so fortunate as to meet with it lately in the wild state in Chili, and not far from Monte Video. It is probable that the cultivation of the potatoe spread from the mountains of Chili to the chain of the Andes, proceeding northward and obtaining a footing successively in Peru, at Quito, and upon the plateau of New Granada. This, as Humboldt observes, is precisely the course which the Incas took in their conquests. The potatoe does not appear to have been introduced into Mexico until after the European invasion of that country; and it is well ascertained that it was not known there under the reign of Montezuma, although there are not wanting some who maintain that the potatoe was found in Virginia by the first colonists sent thither by Sir Walter Raleigh. It is said that it was then brought into England by Drake; but it seems well established that long before Drake's time, namely, in 1545, a slave merchant, John Hawkins by name, had introduced tubers of the potatoe from the coasts of New Granada into Ireland. From Ireland the new plant passed into Belgium in 1590. Its cultivation was at this time neglected in Great Britain, until it was introduced by Raleigh at the beginning of the seventeenth century. When the potatoe came from Virginia to England for the second time it was already disseminated over Spain and Italy. It has been ascertained that the potatoe has been cultivated on the great scale in Lancashire since 1684; in Saxony since 1717; in Scotland since 1728; in Prussia since 1738. It was about the year 1710 that the potatoe began to spread in Germany, and that it there became a plant in common use; it had, indeed, before this time been cultivated in gardens; and had even made its appearance at the tables of the rich some time previously. The severe dearth of the years 1771 and 1772, seemed necessary to lead the Germans to cultivate this useful plant upon the great scale. From this time it was shown that it was a substitute for bread; and once fairly introduced, men were not long of perceiving the many recommendations which it possesses as an article of food. In fact, of all the useful plants which the migrations of communities and distant voyages have brought to light, says M. Humboldt, there is none since the discovery of the cereals, that is to say, from time immemorial, which has so decided an influence upon the well-being of mankind. In less than two centuries it may be said literally to have overspread the earth, or to have been welcomed in every country suited to its cultivation, so that at the present day it is found growing from the Cape of Good Hope to Iceland and Lapland. "It is an interesting spectacle," adds the illustrious traveller quoted, "to see a plant, a native of mountains situated under the equator, advance towards the pole, and growing even more hardily than the grasses which yield us grain, brave the inclemencies of the North." The potatoe, like all other tubers, is a collection, an exuberance which is evolved upon the subterranean stems. Its varieties, which are very numerous, present rather remarkable differences in regard to size, form, colour of the surface and of the interior, taste, and the time which they require to come to maturity.—*Boussingault's Rural Economy.*

The Cincinnati Horticultural Society, at the suggestion of N. Longworth, Esq., have offered two prizes of $100 each, for a new American seedling raspberry and strawberry, which, after thorough trial, shall prove superior to any now in cultivation. Mr. L. offers to pay one half of the premiums.

THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

Philadelphia, Eighth Month, 1847.

It is a very common observation founded upon the experience of every man who has even begun to grow grey-headed, and whose days have passed with tolerable comfort to himself, that as the wheels of time grow older, they increase in rapidity of motion. It seems but yesterday that we closed the tenth volume of our unpretending paper, and we find ourselves now commencing the twelfth. Of our readers and subscribers, we would have an increased number; we cannot afford to part with any. To them all we tender the good wishes of a *new year:* good crops—good prices, and good farming. We particularly invite our friends to exercise their quills, and give us matter to add to the originality, variety, and interest of our paper.

A late number of the *Southern Cultivator*, published at Augusta, Ga., brings to us the mournful intelligence that James Camak, its Editor, died at his residence in Athens, after a protracted illness, on the 16th of sixth month last, in the prime of his life, being aged about 52 years.

He was well and extensively known as an agricultural writer, and being gifted by nature with a mind of more than ordinary power, his perseverance and industry enabled him to surmount many obstacles, and procured for him a position of high respectability in his native State. His paper had scarcely its superior in the country. The Agricultural Press must acknowledge the loss it has sustained in the early death of such a man. The results of his practical philosophy and active philanthropy, will also be missed by a large community.

A New York correspondent of the *Pa. Enquirer*, under date of the 9th inst., says a committee of fifteen was recently appointed by the Academy of Medicine to examine into the effects upon the general health of the city, caused by the numerous milk manufactories, distilleries, &c., and particularly to report the effect on the human economy, of milk from cows fed on swill.

Wheat flour may be quoted at $5 50 to $6 per barrel, and wheat at $1 20 to $1 25 per bushel—corn 75 to 80 cents—oats 50 to 55 cents. Good old Timothy hay is worth $25 a ton—new, $20.

It is announced in a late number of the *Genesee Farmer*, published at Rochester, N Y., that it is hereafter to be enlarged from twenty-four to thirty-two octavo pages, the price to remain as heretofore.

We called a few days ago at the "Black Bear" in Fifth street, to look at a *loading rake*, which was contrived, as we are informed, by a person in this city, for the purpose of raking, and at the same time loading hay. The rake is attached to the wagon, both moving together; and instead of the hay being left in the winrow, it, with the rake is raised by means of pulleys, and emptied into the wagon.

A very handsome copy of *Dr. Gardner's Discourse*, pronounced in the third month of last year, before the *American Agricultural Association*, on the *Chemical Principles of the Rotation of Crops*, has been kindly forwarded by an unknown friend, and we have perused it with much interest.

There is scarcely a more important matter to the intelligent and ambitious farmer, than a proper rotation in his crops; one that shall be adapted to his location, his soil, and the market on which he depends for disposing of his surplus produce. *Here* we have corn, oats, wheat, grass: and not a few of our good farmers, have doubts respecting the expediency of following this system so exclusively as we do; but how to improve it, is yet to be explained.

The Talbot County Cattle Show and Fair, will be held at Easton, Md., on the 27th and 28th of tenth month next, for the exhibition and sale of live stock, agricultural implements, &c. Liberal premiums are offered both for stock and good farming. On the second day of the Show, a ploughing match will commence at 9 o'clock, A. M.

The kindness of B. P. Johnson, Secretary of the New York State Agricultural Society, has put us in possession of the premium list and regulations of the Society for the approaching Show, which, it has already been stated in the Cabinet, will take place at Saratoga Springs on the 14th, 15th and 16th of next month. Silas Wright will deliver the Annual Address at two o'clock in the afternoon of the 16th: immediately after which, the Reports of the Premium Committees will be read.

We would ask attention to the list of premiums to be awarded at the Annual Exhibition of our Agricultural Society, at the *Lamb Tavern* on the 14th and 15th of Tenth month next. Our farmers and agricultural implement makers, we trust, will see that we have a fine display of their stock, produce, &c., and thus give a further impulse to their noble calling. The list will be found on page 25.

A disease has appeared among the cattle in some parts of Salem county, N. J., which has been cause of much alarm, and is said to be similar to what appeared in the same neighbourhood a few years ago. Running at the nose, and drooping of the head and ears, are symptoms which attend the disease, and copious bleeding is found to be a principal remedy. We have been told of several farmers who have lost six or eight cattle, and some horses too, have died. It is thought to be contagious.

After the drought and coolness of the spring, we have since harvest, had copious rains and warm weather. The promise of the corn crop is abundant, and there is no lack of pasture. Butter is still, however, high—25 cents to 35 cents. Why is this, now in the midst of the grass season, when butter is mostly plentiful and cheap? Why, but because our farmers find it more profitable to freeze their cream than to churn it, and thus avail themselves of this rapidly increasing demand for the rich produce of the dairy. So be it. In ice creams or butter, we wish them well remunerated for every trouble. If they will only keep up the character of our good city for its butter, and improve it—for there is too much poorly made butter comes here—we will be satisfied to give a good price for it.

The Newcastle County Agricultural Society in Delaware, has offered a premium of $3, or a copy of the *Farmers' Encyclopedia*, to the best *shocker* of grain. This is a judicious proposal. Where wheat is cut before it is sufficiently ripe to place in the barn—and we believe it is always best so to cut it, if practicable—it must be shocked, and it is a nice art to shock well. Rye will stand almost any amount of rain in shock, but wheat requires abundantly more care. Secure shockers are not found in every field.

Our friend John Jones, of Wheatland, Delaware,—who, by the way, is one of Delaware's most enterprising farmers, and who drills in all his wheat and corn, has purchased the right for New Castle county, to Pennock's Patent Drill, and has generously offered to each member of the Agricultural Society, who has paid up all his dues, or to any person who may become such member before the next Exhibition, a right to have one Drill made for his own use.

THE quantity of rain which fell in the 7th month, 1847, was a little more than two inches and three quarters. 2.76 in.

Penn. Hospital, 8th mo. 1st.

Poudrette.

A valuable manure—of the best quality, prepared in Philadelphia, for sale at the office of the Farmers' Cabinet, No. 50, North Fourth Street, or at the manufactory, near the Penitentiary on Coates' street. Present price, $1 75 per barrel, containing four bushels each, or 35 cents a bushel. Orders from a distance, enclosing the cash, with cost of porterage, will be promptly attended to, by carefully delivering the barrels on board of such conveyance as may be designated. The results on corn and wheat have been generally very satisfactory. Farmers to the south and in the interior, both of this State and of New Jersey, are invited to try it. We are now ready to supply any demand for turnips, buckwheat, &c.

JOSIAH TATUM.

Philada. 8th mo. 16th, 1847.

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Joseph Rakestraw, Printer.

THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—Liebig.

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BY JOSIAH TATUM,

EDITOR AND PROPRIETOR,

No. 50 North Fourth Street,

PHILADELPHIA.

Price one dollar per year.—For conditions see last page.

For the Farmers' Cabinet.

Adulterated Milk.

To the Editor,—I noticed in the last No. of the Cabinet, a reference to a Committee appointed in New York, to enquire into the character and effects of certain manufactured milk, which is not a little complained of in this said city of Gotham. Since the issuing of the Cabinet, I have come across some remarks in the *Farmer and Mechanic*, at the severity of which I was not a little astonished: but I should be still more so, could I entertain no doubt of their justness. I send the extract, and hope to see it in the Cabinet, not because I suspect that we are imposed upon here with any such abominations, but that we may be on our guard, as it is too true, that what is perpetrated in one city, may also be in another. Adulteration of milk should be discouraged and frowned upon, and reprobated without benefit of clergy: no quarter should be shown it. We take it ourselves and we give it to our infants at their tenderest age, and the idea is revolting, that we may possibly be administering to them a drugged—a poisoned beverage, which we would not offer to a decent cat, if we knew its composition. Honest men should be dealt with for milk, and they should be paid a good price for it. We want not even pure water added to it; and if we did, we have our own hydrants. Excuse my earnestness, and believe me, &c. D.

Philadelphia.

Were a stranger perfectly unacquainted with the various tricks and deceptions of our city, to pass through the streets and with all the other paraphenalia of the life-movements and business of New York, notice the number, appearance and inscriptions on the thousands of milk wagons that are constantly passing through our streets, he would at once be struck with the idea, that probably in no city in the world, the people were so favoured with pure and wholesome milk as ours. We have vast numbers of vehicles, many of which are handsomely painted covered wagons, conspicuously labelled "Pure Orange County Milk," "Premium Dairy," "Pure Country," "First Premium," "Bloomingdale Meadow," "Pure Milk from Connecticut," &c., &c., together with numerous other attractive titles. Who uninitiated in the nefarious arts of the venders, would suspect that four-fifths of these vehicles contain the most abominable and deleterious compound that ever disgraced,—we had al-

most said,—the beasts to which they are attached, but more appropriately, the brutes by which this poison is sold!

Reeking from the inflamed and half-putrid, unnatural fountains of the diseased and swill-fed animals that produce it, odorous with the peculiar scent of the distillery, and nauseous from the filth of the miserable stalls where the cows are constantly imprisoned, this wretched, fevered, and poisoned liquid is served to the families of our citizens, carrying with it the germs of intemperance, disease and death, and very essentially contributing a generous part to the weekly bills of mortality in the city.

In these details we are not mistaken. The fact is obvious to all who will take the trouble to investigate the subject, and its truth cannot be controverted.

That we may not be mistaken in this matter, we will merely refer to *one milk establishment* in this city, without adverting to some score of others in its vicinity, where our "Pure Orange County" and "Premium Dairy Milk" is manufactured.

This establishment alone furnishes some 15,000 quarts per day, which may be distinguished from good milk by its peculiar smell. It carries with it the odor of the slops from which it is made, and no one, as we are assured, need be deceived by it, at least no one who is in the least acquainted with that odor.

The stalls in which the animals are confined, are made to occupy the smallest possible space; the ceiling is laid within a few inches of the cows' backs, giving no chance for the fresh air to find its way to the imprisoned beasts, which, having once taken their places, never stir from them till they are removed to be converted into beef, or what very frequently occurs, death from the unnatural and deleterious food and injurious keeping, and their bloated carcasses are given over as food to the hogs, which are, in their turn, to become "wholesome food" for the stalls of our markets.

The swill with which the cows are fed, already a thin and diluted substance, is still further diluted with water, and this is used *hot* to insure a more rapid operation of the *animal distillation*, or rather *filtration*, through the fevered and diseased animal to the milk cans of the still dairyman.

But such production is attained with the loss of the natural colour of that article, which now assumes a light blue complexion. To restore it to the rich yellow white, which is desirable, a process similar to that of the liquor distiller is resorted to, and the same substance is used to produce the effect that is applied to colour "pure spirits" and manufacture "Pure French Brandy" "*for medicinal purposes*," viz., burnt sugar. This colouring, however, is by far the most innocent article in the whole compound.

The distillers themselves, generally, do not engage in the milk manufacture, but construct the stalls and let them out to others, at about $4 per annum. These stalls, says the Tribune—in an article on this subject—are occupied by persons devoted to this branch of business, owning from one cow to fifty, according to their means. "Those who own cows enough have a wagon painted 'Pure Orange County Milk,' 'Bushwick Premium Milk,' or some equally attractive rural title, disguise themselves as countrymen, and sell the product of their own capital and labour to be consumed by the families of the city; those who have fewer animals sell their milk to the more extensive dealers.

"Beside the $4 yearly rent, the honest milkman pays for the distillery slops which his cows consume, at the rate of eight or nine cents for a barrel, which is the daily ration of one cow. He formerly paid six cents, but as the demand is now greater, the price has risen in obedience to the well known principle of political economy. To produce a barrel of this liquid of good quality requires a bushel of grain; but here, as in some other branches of trade, competition comes in to injure that honour which the proverb declares to exist even among thieves. The manufacturers of swill have, it is said, discovered that water may be used to increase the quantity of that as well as of other fluids which they produce. Taught by the sharp suggestion of interest, they have thus in shrewdness gone beyond that liquor dealer, who boasted that he had in his yard a simple pump which netted him $2000 a year. By means of hot water properly applied, the distillers convert a barrel of genuine slops into a barrel and a half. This enables them to supply a greater number of cows, and while for every bushel of innocent grain daily forced to yield its contribution of intoxicating spirits, they formerly provided sustenance for one animal, they now make two bushels do for three. Such is the ingenuity practiced in these establishments.

"When the cows begin to cease giving 'milk,' the time approaches for them to be slaughtered for the market. Indeed, they could not long exist after they had ceased to fulfil that function, which is a great channel for the escape of the disease induced upon them by the close confinement, and the food which the troughs daily wait to them from the distillery. When killed, their bloated flesh is said to have the appearance of whole-

some meat, but in cooking it shrinks into not more than a quarter of its original quantity; the difference consists of foreign or diseased matter, which passes off in the process."

These are facts notorious to some of our citizens, and should be understood by all, particularly those who feel an interest in the health of the community. The subject is one of deep interest, and the press, as the faithful guardians of the welfare of our citizens, should not be silent on the subject. Let it be shown to those who are now unmindful of the fact that the above is, in a great majority of cases, the base and villainous compound—the baneful and poisonous article purchased and used as "pure milk," and put into the mouths of our friends and our children; and further, that this very *drug*, for it cannot be called by a better name, is a most prolific cause of disease and death among a great part of the younger portion of the community. We say to all, *Beware of Distillery Milk Slops!*

Mexican Farming.

At the New York Farmers' Club on the 20th ult., a person by the name of Gregg, said that his acquaintance was with Northern Mexico, Saltillo, Monterey, Chihuahua, and where sheep are raised to a large amount, whence the city of Mexico obtains mutton. He understood and believes that five hundred thousand of these sheep are annually driven from Northern Mexico, south. This breed is excellent for its mutton. He never tasted better, and very little as good. The sheep are quite small, not more than half the size of the common sheep of the United States. Their fleeces are hardly finer than goat's hair, and are only used for coarse purposes. The wool hair is four to six inches long—some say it is a hybrid of sheep and goat. The animals are furnished in many cases with *two pairs of horns*, sometimes a few of them are found with *three pairs*. These sheep are generally valued at about one dollar each, and their mutton sells for three or four cents a pound.

In Northern Mexico there is no tillable upland. None but vallies and river bottoms, lands which lie so that they can be irrigated, are used for cultivation. Hogs are not used to any considerable extent—they are chiefly used for their lard. The meat of goats is very commonly used by the lower classes—and mutton by the higher classes.

Their cattle are rather smaller than those of our western country, and are remarkable for their long horns. He had seen many of them three feet in length. Indian corn is raised everywhere—cotton, wheat and sugar also are raised in considerable quantities. He saw some of the largest sugar cane growing near Monterey. He had seen stalks well jointed for eight feet in length, and they were about six inches in circumference. The sugar cane of Cuba is larger, but it grows seldom more than two or three years from the root, while the Mexican cane grows four or five years in succession from the root. The agricultural implements of the country are very badly contrived. Their plough is made of a couple of sticks of wood, seldom pointed with iron, drawn by oxen pulling by their horns. Common labourers are the same poorly paid—generally run in debt to the landlord, and not allowed to leave him in debt—which they are usually unable to pay. The pasture on the uplands is very fine, for where the grasses are dried up by the season they constitute *fine feed as hay*. The farms are fenced by chapparel—a term signifying a thicket. They make no butter, but a good deal of poor cheese. He never saw a Mexican have a churn. Some of our Yankees at Saltillo, who were connected with a cotton factory there, make and sell butter to good account. The markets at Saltillo are well supplied, but the great body of the people live poorly. They chiefly subsist on cakes made of Indian corn—and on beans. They use lime in boiling water to hull their corn, and then grind the grain to a paste, between two stones—something as a painter grinds paint. They make it into small round cakes, called *Tortillas*, and bake them on a piece of sheet iron, if they have it, or on a stone. Great crops of Indian corn are raised in the valleys of Monterey, Chihuahua and Mondova. Fine wheat is also raised all the way from Saltillo to Chihuahua. They get thirty and forty, and sometimes fifty bushels to the acre. They say that they sometimes *get an hundred fold!*

He said at Mier, some two years ago, an iron plough was introduced, but that it was brought before the Inquisition and sentenced to have its wood work burned and its iron thrown into the river.

Vermont Farming.—The largest farm in Vermont is said to be that of Judge Meech, at Shelburn, eight miles south of Burlington. A correspondent who has been over it, says this year he will mow over 500 acres and cut 1000 tons of hay. He keeps 300 sheep, and has now 400 head of neat cattle. A few days ago he sold fat oxen enough to amount to the sum of $2460 He has also sold this season 1000 bushels of rye.

Horses—Oxen.

To the Editor of the Farmers' Cabinet:

As his horses are the most expensive article in the farmer's outlay, after he has bought his land and built his house, it is of course of the first importance that he should be well instructed in all that relates to their keep and general management. In reading the following extract from Colman's Tour, I was not only of the mind that we might, in this country, gather some valuable hints from it, respecting the treatment of this animal, but that it would be to the general advantage if oxen were much more used among our farmers than they now are. I was also rather surprised at our superiority over the English in training these patient beasts. Nowhere, I apprehend, is the ox more thoroughly disciplined than in the old *Bay State*. If I may be allowed to wander from the horse to the ox, and from him again to the horse, without method or rule, just as my thoughts occur, I would here remark, that farmers in this country, spend too little thought or labour in the care of their horses. "A horse well groomed," I once heard an experienced old man observe, "was half fed:" and the writer of this is well satisfied, there is much reason for the saying. L. P.

Among the most improved animals in the kingdom, horses take a prominent place; and a circumstance of difference, in this matter, between England and the United States, which strikes one at first sight, may be called the division of labour among the horses. The American horse, in most of the States, is, generally, a horse of all work. Here, the horses are bred and trained for, and exclusively confined to, particular departments,—sporting, pleasure, travelling, draught or agricultural labour; and nothing is more rare, than the transfer of the animal from one department to the other. So we find the race-horse, the hunter, the carriage horse, the draught horse, the roadster, the saddle horse, the pony for children and ladies, the general hack, and the farm horse. This comes of the immense wealth of the people, and is adapted to give them the best advantages of each kind. It may surprise some of my friends, to tell them, that I have more than once found forty hunting horses in one gentleman's stable, for himself and his huntsmen; and in one instance, I found a stud of eighty horses, of different kinds, exclusive of the farm horses. The perfection to which these animals have been brought, the condition in which they are kept, the tenderness, and kindness, and care, with which they are treated, and the admirable manner in which they are groomed, are circumstances, here, all over the country, in the highest degree worthy of remark. I have already referred to them. Their hours of rest, of feeding, and labour, are observed with strictness; their stables are spacious, lofty, well-ventilated, and adapted to preserve, as far as may be, an equable temperature; they are carefully bedded, and cleanly littered, and whatever would be offensive, at once removed; they are thoroughly curried and brushed, and a horse brought into the stable in a state of perspiration, is never left until he is completely dried by rubbing; nor, in any case, have I seen a horse left to stand still, exposed to a cold draught of air. The treatment of them is most exemplary and creditable; and is no more than just to animals, incapable of taking care of themselves, to whom we are indebted for so much of pleasure and so much of profit. At the house of an eminent nobleman, whose hospitality I enjoyed, it was the invariable custom of the family,—ladies and guests, as well as the master,—about nine o'clock in the evening, to go, by a covered passage, into the stables, where thirty horses were kept, to see that the grooms and ostlers were at their post, that the horses were well, and cared for, and the stable in good order. Nothing could exceed the cleanliness and order in which everything appeared. At one of the principal breweries in London, where forty of the largest size dray-horses are kept, the manager informed me that, after six years hard service, the horses receive their freedom, are sent into the country, exempted from all labour, and kindly cared for during the rest of their lives. I confess, in observing these kind provisions and this extraordinary care, I have not been able to suppress the wish, that many of the bipeds, who share with these animals in the labour of the field,—not unfrequently performing the hardest part of it,—could experience, in their own persons, an equal care, and find in their cottages, on their return from a hard day's work, even a moiety of the comforts with which the stables of their co-labourers are provided. It would be doing great injustice, to say that this is not often done by many persons, who have no greater pleasure than in providing for the comfort and welfare of their dependants. It is only to be regretted that the practice is not universal.*

* No person can have passed through the highly improved territory of the Duke of Buccleuch, in Dumfriesshire, which the public road traverses for more than twenty miles, and observed the clean and comfortable cottages of the labourers, which constantly meet the eye; nor have seen the almost luxurious provision made by the Duke of Devonshire for his dependants,

In the breweries in London, and in the drays in the cities, horses of an enormous size are employed; and the same kind of horses are employed on many of the farms. The weight of one of them, ascertained in my presence, exceeded seventeen hundred pounds; and he was by no means extraordinary for size. I do not desire to see such horses introduced among the farmers of the United States. Their motion is slow and clumsy, and their keep expensive. In cities, where the vehicles are heavy, and the burdens of coal, and beer, and other goods, very great, they are well suited to the service for which they are used. As far as proportion, colour, and action, are concerned, they are, certainly, magnificent animals. With many farmers, these horses are raised, not as being preferred for farm labour, but for sale in the cities; and after being broken to service on the farm, are, at a proper age, sent to market.

But the horse best adapted to agricultural purposes is of a smaller size, a compact form, short, strong, and muscular limbs, full-breasted, and with round buttocks. There are three breeds of horses in the kingdom, distinguished for their valuable properties as farm horses; these are the Cleveland Bay, a horse of great strength, and good size and figure; the Suffolk Punch, a large and serviceable horse; and especially the Clydesdale horse, almost exclusively preferred among the excellent farmers of Scotland, particularly in the Lothians. I have seen nothing superior, in my humble judgment, to the last horse, for farm labour, combining good size, with compactness, strength, and action. In Ayrshire, the farmers, being of an opinion that their fine breed of horses was deteriorating, recently imported a stallion from Flanders. This horse was a model of compactness and strength. He was fifteen and a half hands high; his girth, behind his shoulders, was seven feet four inches, and seventy-five inches round his neck, at the base; he was twelve years old, and cost sixty guineas, in Flanders.

The farm horses in ploughing, are never worked more than eight hours a day. The ploughman feeds and cleans them at four o'clock in the morning. They are harnessed and the plough started at six o'clock. They are brought to the stable again at two o'clock, and fed, and thoroughly groomed, curried, cleaned, bedded, &c., and left for the night, at dark. The feed is almost always cut for them, or if given long, given in small quantities; and the oats and beans are crushed. On one farm, the allowance for a farm horse of the largest size was, two bushels of oats, and one peck of beans, and two trusses of hay,—fifty-six pounds each,—per week, in winter; in summer, green feed, vetches, clover, or rye grass, was substituted for the hay. The general allowance is a peck of grain, half oats and half beans, and fourteen to sixteen pounds of hay, per day. The army allowance for a horse is fourteen pounds of hay, ten pounds of oats, and seven pounds of straw, per day; "with hard work, less hay and more corn; with little work, less corn and more hay." The horses belonging to the Queen's Guards, which are often to be seen in the streets of London, and always on state occasions, are beautiful animals, and subjects of universal admiration. They are of a black colour, and bred, I believe, on the continent, purposely for the army.

The general rule is, to keep, on arable farms, a pair of horses for every forty acres; in some cases the proportion of land to the team is larger. One of the best farmers in Scotland allows seven horses for two hundred acres. His land is accessible, and extremely favourable for all farming operations. The cost of keeping a working horse—exclusive of interest or deterioration—he estimates at twenty-five pounds, or more than one hundred and twenty dollars per year. These expenses all have reference to the local prices of agricultural produce; and I give them rather as matters of curiosity, than of direct utility to my American readers. The amount of ploughing for a day's work is an acre of land, but in some cases, an acre and a half. One farmer speaks of ploughing, usually, seven acres in a week, with one pair of horses. The furrow slice varies from eight to eleven inches, and the distance travelled in such case, is from twelve to sixteen miles a day. It does not lie within my province to speak of other horses than those employed in agricultural labour.

Oxen are employed for farm labour to a small extent, and in few counties. On Lord Leicester's farm, at Holkham, so much and so long celebrated, they are used and worked in leather harness; and in some places I

in his picturesque village of Edensor; nor the humane provision made by the late Lord Leicester for his aged and decayed labourers, at Holkham; nor have witnessed the extraordinary and beneficent exertions of Lady Noel Byron, by allotments, loan, and benefit societies, and industrial schools, for the comfort, instruction, and improvement of her dependants and the poor; nor the beneficent and parental conduct of many, *many* others, to whom the strong and unaffected attachment of their labourers and dependants evinces the deepest sense of kindness, but whose names it might seem invidious to mention,—without a grateful acknowledgment of the goodness of Heaven, in making minds so just and generous the almoners of its bounty.

have seen them worked singly in harness. The general impression is, that they will not do so much work as horses, are not so easily trained, and are more expensive to keep; every one of which positions is, in my opinion and experience, erroneous. I believe these opinions arise out of an entire ignorance of the training of oxen. Nothing can be more awkward than the management of them, which I have seen here. As they are managed and trained in the best parts of New England, their docility is perfect; working without a driver, in the plough-field, as well as with one; performing as much work as a pair of horses, and performing it as well; costing comparatively nothing for harness, since a wooden yoke and bows, and iron chains, which will last for years, are all that are required; when well cared for until six years old, paying, by their growth, for the feed which they consume; and when kept in good condition, as they always should be, if ruined for work by any injury, or if at an age to be turned off for beef, exposing their owner to no loss. In everything but road work, I am quite satisfied that a pair of well trained oxen will perform as much work as a pair of horses, and at a much less expense. This was the opinion of an English ploughman, who lived some time in my service, and worked wholly with oxen. He had, before this, been used to horses, and a more skilful ploughman I have never seen on either side of the water. The use of oxen has become much less common than before the introduction of the improved breeds of cattle, which are now brought so early to maturity. Formerly, it was not the custom to send oxen to market, before five years old; now the Durham stock, and others, go at eighteen months to three years old. Under this arrangement, there is no opportunity to get any work out of them.

The Scotch plough with two horses abreast, and seldom use more than two. In many parts of England, horses are worked *tandem;* and I have sometimes seen five and six, at length, to a single plough. This is certainly excessive, and the turnings, in such case, most inconvenient; but the motive for putting the horses at length is, that, where the land is heavy, it may not be trodden hard.—*Colman's Tour.*

Fattening Poultry.—It is asserted in the "Transactions of the Society of Arts," that there is a great advantage in fattening geese, turkeys, and in short, fowls of every description, on potatoes mixed with meal. On this diet they are said to fatten in less than one-half the time ordinarily required to bring them to the same condition of excellence, on any kind of corn or even on meal itself. The potatoes must be boiled and mashed fine whilst they are hot, and the meal added, just before the food is to be presented.

Order on Farms.

One of the editors of the *Cultivator* in his recent peregrinations, visited the farm of John Delafield, consisting of 350 acres, in the neighbourhood of Seneca Lake. He was highly gratified with the system, order and neatness observable in every department. We make the following extract from his notes.—Ed.

Every person employed on the farm, is furnished with a printed card, comprising the rules and regulations.

It is expected that all persons employed on the Oaklands Farm, *will carefully attend to the following system:*

Regularity in hours.

Punctuality in cleaning and putting away implements.

Humanity to all the animals.

Neatness and cleanliness in personal appearance.

Decency in deportment and conversation.

Implicit obedience to the proprietor and foreman.

Ambition to learn and excel in farming.

Maxims of order and neatness.

1. Perform every operation in proper season.
2. Perform every operation in the best manner.
3. Complete every part of an operation as you proceed.
4. Finish one job before you begin another.
5. Leave your work and tools in an orderly manner.
6. Clean every tool when you leave off work.
7. Return every tool and implement to its place at night.

Children's Boots and Shoes.—The attention of every mother should be given to the state of her children's feet. How much subsequent pain, distortion and lameness, might be spared, if a little consideration were given in time to the child's shoes and boots. As a general rule, if proper length and width be given, all will be well; but this must be seen to frequently, as little feet will soon grow larger.

If shoes are worn, they should be easy across the toes, and of good form in the sole, hollowed and arched at the waist, and snug

at the heel—if boots, then the elastic the same as ladies'.

If the ankles are weak, a surgeon should be consulted without delay. I have benefitted many children by making an elastic lace boot, which, from the support it affords, compressing the muscles of the foot, and by bearing well up by means of a spring under the arch of the foot, has prevented lameness, and restored the feet and ankles to their natural form.—*Hall's Book of the Feet.*

Age of Poultry.

Farmers usually sell poultry alive, excepting in some parts of the country, such as the Borders, where geese are killed and plucked for the sake of their feathers before being sent to market. Poulterers in towns, on the other hand, kill and pluck every sort of fowl for sale, so that the purchaser has it in his power to judge of the carcass; and if he buys an inferior article at a high price, it must be his own fault. It is easy to judge of a plucked fowl, whether old or young, by the state of the *legs*. If a hen's spur is hard, and the scales on the legs rough, she is old, whether you see her head or no; but the head will corroborate your observation, if the under bill is so stiff that you cannot bend it down, and the comb thick and rough. A young hen has only the rudiments of spurs, the scales on the legs smooth, glossy and fresh coloured, whatever the colour may be, the claws tender and short, the under bill soft, and the comb thin and smooth. An old hen-turkey has rough scales on the legs, callosities on the soles of the feet, and long, strong claws; a young one the reverse of all these marks. When the feathers are on, an old turkey-cock has a long beard, a young one but a sprouting one; and when they are off the smooth scales on the legs decide the point, beside difference of size in the wattles of the neck, and in the elastic snot upon the nose. An old goose, when alive, is known by the roughness of the legs, the strength of the wings, particularly at the pinions, the thickness and strength of the bill, and the firmness and thickness of the feathers; and when plucked, by the legs, pinions and bill, and the coarseness of the skin. Ducks are distinguished by the same means, but there is this difference, that a duckling's bill is much longer in proportion to the breadth of its head than that of an old duck. A young pigeon is easily discovered by its pale coloured, smooth scaled, tender, collapsed feet, and the yellow, long down interspersed among the feathers. A pigeon that can fly has always red coloured legs and no down, and is then too old for use.—*Stephens' Book of the Farm.*

Portable Soup.

When one pound of lean beef, free from fat and separated from the bones, in the finely chopped state in which it is used for beef sausages or mince-meat, is uniformly mixed with its own weight of cold water, slowly heated to boiling, and the liquid, after boiling briskly for a minute or two, is strained through a towel from the coagulated albumen and the fibrine, now become hard and horny, we obtain an equal weight of the most aromatic soup, of such strength as cannot be obtained, even by boiling for hours, from a piece of flesh. When mixed with salt and the other usual additions, by which soup is usually seasoned, and tinged somewhat darker by means of roasted onions or burnt sugar, it forms the very best soup which can in any way be prepared from one pound of flesh. The influence which the brown colour of this soup, or colour in general, exercises on the taste, in consequence of the ideas associated with colour in the mind,—ideas of strength, concentration, &c., —may be rendered quite evident by the following experiment. The soup, coloured brown by means of caramel, is declared by all persons to have a much stronger taste than the same soup when not coloured, and yet the caramel, in point of fact, does not in any way actually heighten the taste. If we allow the flesh to boil for a long time with the water, or if we boil down the soup, it acquires spontaneously, when concentrated to a certain point, a brownish colour, and a delicate flavor of roast meat. If we evaporate it to dryness in the water-bath, or if possible at a still lower temperature, we can obtain a dark brown, soft mass, of which half an ounce suffices to convert one pound of water, with the addition of a little salt, into a strong, well-flavored soup. The tablets of so called portable soup prepared in England and France are not to be compared with the extract of flesh just mentioned; for these are not made from flesh, but consist of gelatine, more or less pure, only distinguished from bone gelatine by its higher price.—*Liebig's Researches on the Chemistry of Food.*

A Modern Farmer.

Ten years ago it was a goodly thing to visit the Philadelphia market, and see the excellent provision which the honest husbandman set forth to gratify the palates and increase the flesh of our citizens. Each

farmer appeared to be a proxy for the Goddess of Plenty, and poured forth from his *Cornucopia* the fat of the land, and the abundance thereof; flesh, fruit and vegetables,—tomatoes, plums and spring chickens —potatoes, strawberries, and sucking pigs. His stall was up-heaped with the bounties of nature—the shambles groaned with an overweight of nutrition. Long-bearded turkeys loomed forth in lengthened lines, luxuriously lucious; great geese gleamed out in greasy garnishment, stimulative of glorious feats in gormandizing gastromy; delicate ducks, deliciously dainty, dangled by dozens, and the anxious trenchman was puzzled how to choose from so many piles of portly poultry. Substantial solids were also there to please the purchaser, and add their quota to the support and gratification of the inward man. Beef, the fattest and fairest, veal, tender and delicate, mutton, fresh and juicy, pork, corn fed and substantial. In the white tub, the golden butter peeped out from amidst green and moist leaves; in the rustic hamper, white eggs were nestled among cut straw; peas, beans, beets, carrots, and other vegetables were gathered round in appropriate vessels. In truth, it was a goodly sight to see the farmer part with his treasures, to adorn the domestic feast and gladden the hearts of civic partakers—whilst he, in exchange therefor, was gladdened with shining stores of gold and silver.

Such were the scenes which our markets daily afforded, and such were the husbandmen of other days, and such husbandmen are there yet, but they are becoming rare. Go into our markets now and ask for the farmer, and you will be shown an individual whose air and apparel put you strangely in mind of a journeyman confectioner. In amazement you ask, is that a farmer? Yes, that is a farmer of the modern school; there is the provision he brings, in those tubs, and there is his stock, a ladle, a japanned tray, twelve saucers, and twelve leaden spoons. He is a real modern farmer, one who cultivates the soil and raises ice cream.

He finds the labour of tilling the stubborn earth comparatively profitless—his plough is broken, and his sickle rusted—wheat and corn do not cover his broad acres, because grass is more suitable for cows, and rich creams, riches to him when frozen, can thereby more easily be obtained. But few poultry cackle round his farm house, or run with eager bills to pick up the scattered grain. Nor does the cheerful maid sing at the churn, and rejoice as she views the golden lumps—nought is heard but the cracking of the ice, or the eternal see-saw of the freezer as it is stirred amidst rock salt.

Yet his marketing finds a ready sale, and his frozen creams are lapped up by hundreds. Nor is he to blame; he but supplies the demand made by the citizens. Meanwhile, housekeepers groan at the scarcity and dearness of produce. Milk and cream, to dwellers in cities, are daily becoming more watery, and will soon become fabulous, butter and cheese will exist only in legend—poultry, flesh and flour, are also becoming scarce. The cause is evident, so long as it is more profitable to the farmer to grow ice creams than cultivate the soil and increase his farm stock, so long will he turn his attention to such a valuable branch of agriculture. It may be a new thing to many, but it is undoubtedly true that the present high price of provisions is partly owing to the fact that so many farmers in the neighbourhood of our Atlantic cities have turned their attention wholly to the manufacture of luxuries to tickle the palates of our dainty loving citizens.—*Ledger.*

Management of the Manure Heap.

No one, who has been watching the progress of agriculture for the last few years, can for a moment dispute the importance of the foreign substances, which, like nitrate of soda and guano, have been introduced into husbandry. But admitting to the fullest extent, the value of these materials; admitting, too, the utility of some of the artificial manures compounded for sale; we must observe, that it is most absurd for the cultivator to put himself to the expense of purchasing them until he has utterly exhausted all the means which his farm affords him, of increasing the fertility of his land. Such substances should be employed *in aid* of ordinary manure, not *instead* of it. The art of farming and market-gardening consists, or should consist, in obtaining the greatest possible amount of food at the smallest possible expense.

Now, it must be obvious, that those manuring substances which are necessarily produced on a farm, are the least expensive of all things; to the careful collection and preparation of them should the good husbandman turn his attention in the first instance; and when all the resources of skill are exhausted upon that preparation, it is time to look abroad for assistance. Farm yard manure is, therefore, the first object of improvement; and it is to this great end that our remarks upon manures have of late been directed. The man who wastes his

farm-yard manure and buys other things, can only be compared to him who should leave his wheat upon the ground, and buys rice or maize to make good his prodigality. We assert, without fear of contradiction, that the farmer does, in the great majority of cases, commit a folly equivalent to this; not indeed, intentionally, but from not knowing better.

It is not, however, merely because of its cheapness, that farm-yard manure is the best of all substances for enriching land, but because it contains such a great variety of substances, among which each crop finds that which it most requires, and in the fittest state for becoming its food. "Fortunately," says Dr. Daubeny, in one of his excellent agricultural discourses, "we are provided, in the dung of animals, with a species of manure of which the land can never be said to tire, for this simple reason, that it contains within itself not *one* alone, but *all* the ingredients which plants require for their nutrition; and what is perhaps of equal importance, existing too, in that precise condition in which they are most readily taken in and assimilated." No wonder then, that the Royal Agricultural Society of England should have made the subject of farm-yard manure the subject of one of their prizes, and that we should in the meantime be turning our feeble efforts in the same direction.

It must be evident to those who have considered the subject, that the great points to attend to are, first, to reduce the animal and vegetable matter of manure to a decayed state; and secondly, to *keep* everything that results from this decay, whether fluid or solid, or invisible, after it has been obtained. It is of no use to catch the hare, if you do not hold her. The farmer lets his stock trample straw and manure together in the yard, and by degrees it becomes partially rotten; it is then thrown into heaps, and allowed to ferment; and then it is used. The market gardener carts the long stable-litter from town, throws it into a heap, lets it ferment, and then applies it to his land. In both these cases, rain and other fluids wash away one part, which runs to waste; the fermentation drives off another, which disappears in the air; and what is left is, at the most, about half as good as it should be. This cannot be the way to manage manure.

What *should* be done, is something like this: every husbandman should have a place for preparing manure. It should be a trench or ditch, large in proportion to the quantity of manure to be prepared. The bottom and sides should be made firm with clay or any other material that will prevent a waste of the water used in preparing the manure. This trench should fall towards one end; and at that end a hole should be made—which we will call A,—and well puddled or lined with clay, so as to hold water, into which all the liquid matter that runs from the manure should drain. By the side of the trench should be a pump and well, which might be so contrived as to throw water in a stream all over the manure, when necessary. All things being ready, a quantity of raw manure, consisting as usual, of straw and all sorts of impurities, should be placed in a layer at the bottom of the trench, well watered, and trampled down; by this means it will be enabled to decay faster than if it was dry, for the mass will begin to heat; what water the straw cannot suck up, will run into the hole A, out of which it should afterwards be drawn, and poured again over the heap. At the same time that the layer of raw manure is placed on the floor of the trench, there should be scattered among it a quantity of gypsum—plaster of Paris—if that can be had cheap, or else some powdered green vitriol: then the fluid which drains away will consist of those ingredients or their elements, water, etc. The object of adding such substances, is to prevent the loss of ammonia, an invaluable substance, which flies away from manure, if you let it alone, but which either the gypsum or the green vitriol holds fast, and keeps with themselves in the manure. Gypsum—plaster of Paris—is, in many places, the cheapest material; but the wholesale price of green vitriol is not more than five shillings per one hundred weight in the London market; and probably the material called *salt-cake*, and now worth about three shillings and sixpence per one hundred weight, would answer the same purpose.

When there is a fresh supply of raw manure ready, it should be placed in a layer over the first, mixed with gypsum or green vitriol, or some other "fixer," and well trampled down; then let it be thoroughly watered with the fluid in the hole A, if there is enough there; or with water from the pump, if what is drained into A is not sufficient. Water or drainings should be constantly added to these heaps, for it is of the first importance that the manure should be kept continually moist, in order to hasten its decay. In this manner the manure heap may be increased from time to time, as raw manure accumulates, until it is too high to be conveniently raised further, or to allow of water or drainings being easily poured over it. By degrees the whole mass will become a soft pasty substance; and when in that condition, will be fit to put upon the land, or to lie by till wanted. In the latter

case, however, care must be taken not to allow any of its "goodness" to be wasted out of it again; and reservoirs should be formed at the edge of it, to receive what does run from it, which should be poured over it again, or carried and used elsewhere.

If this plan were merely speculative, we should have nevertheless thought it worth proposing; but it is, in fact, the result of experience. It is essentially the same as that practiced by Mr. Schattenmann, and seems to us the best method of managing the dung hill that has been yet proposed. It has the great merit of saving everything, of wasting nothing, and of causing no other additional expense than that of the purchase of the gypsum,—which would probably be bought without being thus applied—or of a boy occasionally to attend to the watering the dung hills. Although we entertain no sort of doubt of the extreme importance of attending to these suggestions, and of the *ample return* they will make for any expense connected with them, we shall be quite satisfied if any of our readers will try them first in a small way, and then ascertain for themselves the relative effect per load of common farm-yard manure, and manure prepared in this more careful manner.—*Professor Lindley.*

Burlington County Agricultural Society.

First Annual Exhibition, at Mount Holly, October 20th, 1847.

Premiums will be awarded according to the following schedule:

For the best cultivated Farm, of not less than fifty acres, exclusive of woodland, regard being had to the quantity of produce, the manner and expense of cultivation, and the profits, $10.

Horses.—For the best Stallion, $5.
For the second best do., $3.
For the best Mare, $5.
For the second best do., $3.
For the best Gelding, $5.
For the second best do., $3.
For the best pair of Matched Horses, $5.
For the second best do. $3.
For the best pair of Work Horses, $2.
For the best Colt, under one year old, $3.
For the best Colt, under two years old, $3.
For the best Colt, under three years old, $3.

Mules.—For the best team of four mules, $3.
For the second best team, of two mules, $2.

Cattle, Blooded Stock.—For the best Bull, under three years old, $5.
For the best Bull, under two years old, $3.
For the best Bull, under one year old, $2.
For the best Cow, $5.
For the second best Cow, $3.
For the third best Cow, $2.

Cattle, Common Stock.—For the best Bull, under two years old, $5.
For the best Bull, under one year old, $3.
For the best fatted Calf, under six months, $3.
For the second best fatted Calf, do., $2.
For the best Cow, $5.
For the second best Cow, $3.
For the third best Cow, $2.
For the best Cow, Steer, or Heifer, fatted, $5.

Sheep.—For the best Buck, $3.
For the best Ewe, $3.
For the best Flock, not less than twelve, $5.

Swine.—For the best Boar, $3.
For the best Sow, $3.
For the best sucking Pigs, not less than six, $3.
For the best lot of Pigs, under nine months, not less than four, $3.

Poultry, Live.—For the best lot, not less than eight, $3.
For the best pair, $2.
For the best pair of Capons, $3.
For the second best pair of Capons, $2.
For the best Turkey Cock, $2.
For the second best Turkey Cock, $1.
For the best pair of Geese, $2.
For the second best pair of Geese, $1.

Dairy.—For the best Cheese, not less than thirty pounds, $5.
For the second best Cheese, not less than twenty pounds, $2.
For the best lot of Butter, not less than six pounds, $3.
For the second best lot of Butter, not less than six pounds, $2.

Fruit.—For the best sample of Apples, not less than ten named varieties, $2.
For the second best sample of Apples, not less than ten named varieties, $1.

Grain.—For the best White Wheat, not less than one bushel, $2.
For the second best White Wheat, not less than one bushel, $1.
For the best Red Wheat, not less than one bushel, $2.
For the second best Red Wheat, not less than one bushel, $1.

For the best Oats, not less than one bushel, $1.

For the best field of Wheat, not less than five acres, $5.

For the second best field of Wheat, not less than five acres, $3.

For the best field of Oats, not less than five acres, $3.

For the second best field of Oats, not less than five acres, $2.

For the best field of Indian Corn, not less than five acres, $5.

For the second best field of Indian Corn, not less than five acres, $3.

Potatoes.—For the best sample of Seedlings, $5.

For the best bushel of Potatoes, $1.

For the best Acre, $5.

For the second best Acre, $3.

For the best bushel of Sweet Potatoes, $1.

For the best specimen of any agricultural implement, a Certificate of First Merit.

For the best article of manufacture in iron, cutlery, glass, woollen, and cotton fabrics, and of manufactures generally, a like Certificate.

For the most satisfactory experiment, in converting green crops, or other vegetable matter, into manure, with full details, a like Certificate.

For the most satisfactory experiment in top dressing grass and grain, a like Certificate.

For the best experiment in increasing manures, a like Certificate.

Plank Roads.

Their construction and advantages, with observations on the present system of making public roads.

By George Geddes, Esq., Civil Engineer, Fairmont, Onondaga County.

Good roads are very important to the interests of agriculture. The surplus productions of the soil are valuable to the producer, just as they are near market, and if distant, the avenues for their conveyance, become a consideration of the first importance. The common roads of the country are very generally badly located, little or no regard having been paid to the grade; and the system by which they are attempted to be kept in repair, is such as must result in their being in bad condition a great portion of the year. The tax is an unfair one; for the persons who are to enjoy the benefits of the road do not pay for the repairs; but the persons who own property within the town or road district, are taxed in proportion to their property, without regard to the amount they are to use the road; and it often happens that in the vicinity of large towns the road districts are entirely unable to keep in repair a section of road, over which not only the produce of these districts is to pass, but the whole business of perhaps fifty such districts. The results of such a system must continue to give us bad roads; and the only remedy, is to adopt some course which shall result in taxing the travellers with the expense of keeping the road in order. No tax can be more equitable, if it be not in excess, than that of the toll gate.

The only thing to guard against, is the diversion of the money thus raised from the repairs of the road. In those sections of the country that are yet but sparsely peopled, it would be impracticable perhaps, to introduce a system requiring the payment of tolls from the traveller, as the expenses of collecting the tax would bear too large a proportion to the total amount. In such districts, the first settlers must open the roads, and continue to work them, until the amount of travel will justify the collection of toll. But in all those parts of the State that have been settled for any considerable period of time, we cannot too soon commence levying a tax upon those who use the roads, and expend the money thus raised, in the immediate vicinity of the gates, in repairing the roads. As the roads become better, we may lessen the rates of toll, being always strict in applying the receipts for the benefit of those who pay.

In some instances, it would be for the advantage of the public, to make a large outlay in order to have a good road before the receipts from tolls would be sufficient to make it. In such a case, the creation of a company, who will furnish the capital necessary to at once make a good road, and trust to the tolls to pay the interest and reimburse the capital within some fixed period of time, and besides keep the road in repair, will be for the public advantage.

Common road making, is a branch of engineering that perhaps has received less attention from scientific men, than almost any other. Canals, railroads, tunnels, and works of like splendor, are more attractive than the humble country road; and it has been trusted to a class of men who possess but small qualifications for the charge of so important an interest.

It might be impossible to determine the cost of all the roads in the State, so that the comparison might be made with the cost of the canals and railroads; so too, it might be impossible to make a correct comparison of the cost of the cars and boats, and the wagons and sleighs; but it is certain that the

sum total of the cost of railroads and canals, and the cars and boats, is vastly below that of the cost of the highways, and the wagons and sleighs that are used on them. The importance of the interest demands judicious legislation; and the application of the highest intelligence in the expenditure of the means provided. A proper system of laws would develope the skill necessary, and we must be content to wait for such legislation before we can expect to see such great skill exhibited in constructing roads. In every county, three commissioners should have charge of all the roads in their county; having in their employment a competent engineer, to direct the expenditure and superintend the erection of bridges, and all the repairs; this would soon produce a change vastly beneficial to the public.

The Revised Statutes contain a general law relating to turnpikes, in which the particular manner of construction is all specified, as though the revisers knew all that would ever be known about making roads. It is strange that it should have happened, that McAdam should have rendered himself so famous by teaching a system of road making precisely the reverse of the one determined upon by the revisers; but so it was.

They followed the old English plan, which required a bedding of stone upon which to place the facing of broken stone.

The peculiarity of McAdam's plan is, that there shall be no such foundation, but that the broken stone shall be placed directly upon the earth; experience having proved that, if there was a stone of any considerable size under the broken surface, it would in time rise up through it; *and he discarded every stone over four ounces in weight.*

Plank Roads have very recently been introduced into this country. According to the patent office report of January, 1843, they had their origin in Russia, and were introduced into Canada by Lord Sydenham, he being induced to try the experiment in consequence of the great cost, in the first instance, of McAdamising a road, and the expense of keeping it in repair.

The first road made of plank was near Toronto. The three miles nearest the city having been McAdamised; the plank road commenced at that distance from the city, and was extended some miles into the country. The plank road lasted eight years, requiring during that time merely nominal repairs. The McAdam road in the same time required an annual expenditure of four hundred dollars a mile in repairs—amounting in the eight years to $3,200 a mile, a sum much more than sufficient to replank a road. When the plank road required a new covering, one-half of the stone road was dug up and flung on top of the other half, and a track of plank eight feet wide was laid down in the place occupied by the stone. It happened that I visited Toronto at the time the plank road was rebuilding, and the eight feet track was being put into the stone road. The plank first used were sixteen feet long and three inches thick. They had worn out in the middle for a space of about seven feet wide—the ends of the plank being entire. The middle of the road had settled by the weight of the teams, and loads that had passed over it. The sills were sound enough to justify their use for another covering. I saw the eight feet track in use; and then expressed the opinion, that, as the narrow road was so much more evenly pressed down by the loads than was the wide road, it would be firmer, and that if more than one eight feet track was demanded by the travel, it would be vastly better to lay two eight feet tracks, than one sixteen feet, not only because they would settle more evenly, but that the facilities for passing would be greatly increased. A road sixteen feet wide, experience proved would be used in the middle. A wide load, going slowly along it, rendered it very difficult for a vehicle that was moving faster, upon overtaking the wide load to pass it. In making my report to the commissioners for the distribution of the stock of the Salina and Central Square Plank Road, at whose request I had visited Toronto, for the purpose of obtaining information upon this subject, I proposed two eight feet tracks for their road, and made my estimate of the cost accordingly. A year later I again visited Toronto, and to my surprise long planks were entirely abandoned. The road as it was extended into the country being made of a single eight feet track—having a smooth earth road to turn out upon, along side the plank.

The result of these examinations was, that we determined upon making a single track upon one side of the centre of the road, and wherever we had ordinary earth to grade twelve feet wide upon the other side of the centre. Over some light sand we laid two tracks, and in one instance for a short distance, we laid a sixteen feet road, owing to peculiar circumstances; so that we have a single plank track on one side of the road, and an earth road to turn out upon; and we have two tracks, four feet apart, of plank; and we have a wide plank road. The two separate tracks of plank are the most perfect road, and furnish the greatest facility for teams to pass. The eight feet track is next in convenience, for it being on the side of the centre of the road that gives

it to the loaded team that is going into town, —and the loading is chiefly going to town,— the unloaded team generally does all the turning out, while the loaded team travels on one side of the centre, and not in the middle of the road; while on the sixteen feet plank the traveller inclines to keep the centre, and the slow movements of the loaded team in turning out, very generally drives a light team off the ends of the plank upon sidling ground. When a team upon the single track is overtaken, it is much easier to pass it than it is when it is moving along the middle of the wide track; for the slow going team is on one side of the centre, in the case of the narrow road; and there is a twelve feet earth road on the other side of the centre, for the fast going team to pass by upon. The only way to make the wide track as convenient for passing as the narrow, is to grade an earth road outside of the ends of the plank; and that would add to the cost, and make the road bed so wide that it would be difficult to drain it well.

It has been proposed to fasten a scantling upon the middle of a sixteen feet track, leaving occasional vacancies for teams to cross from one side to the other, as a means of causing the travel to pass upon the ends of the track. This remedy for the evils of a wide single track, is expensive and objectionable from the inconvenience in crossing freely at any point.

Every view of the question results in this: that roads, that are not greatly travelled require but a single eight feet track, save over very soft ground; and that roads that require more than one such tracks, should have two narrow tracks in preference to one wide track. It is safe to say that whenever two tracks are demanded for the accommodation of the travel,—unless the necessity grows out of the fact, that the earth is very unsuited to road making,—that, that demand will surely justify the investment of the money the second track will cost; for it must be a very great amount of travel that will not be accommodated by a single eight feet track, with a carefully cared for earth road to turn out upon along side of it.

Experiments have been made to test the proper mode of laying the plank: "On the Chambly road the planks are twelve feet long, but laid diagonally, so as to make the road but eight feet wide. The weight of half the vehicle and load coming suddenly upon one end of the plank, and the other end not being kept down at the same time, the traffic constantly tends to disrupt the road, and the planks are loose, and spring from end to end." * * * "At Quebec part of the road has been planked, the plank being laid lengthwise. It was considered that the planks would stand better the friction, and when necessary, could be more easily taken up, and the road repaired. One strong objection to this mode of laying the plank is found to be, that the horses cannot keep their feet when much weighted, and are much exposed to falling, in consequence. Under all these circumstances most have approved the manner in which the planks are laid on the Toronto road." (Patent office report, 1843, page 129.)

In constructing plank roads, it is necessary to have the earth upon which the plank are to be laid, broken up and made fine, that they may touch the earth at every point. This is important, for if any space be left for air under the plank, or alongside the sills, dry rot follows. The sills should not be large; four inches square is sufficient. They should be perfectly bedded into the earth, and there should be broken earth under them, care being taken that they should not rest firmly upon rocks or other hard substances, that will not allow them to settle.

All earth formations of this nature will settle some, and the sills must be permitted to go down as the rest of the structure settles, or a space for air would be left between the plank and the earth, and the sills would thus support the plank; whereas the plank should rest upon the earth at every point. Nothing is gained by wide or deep sills, and the whole support of the road is the earth that is covered by the plank, and the amount is in no wise increased by wide sills. The chief use of sills, is to grade by, and to keep the road in form until the earth has become settled.

There is in the vicinity of Toronto a short plank road, that has no sills at all under it, and the grade is very nearly as exact as in those roads where sills are used.

The plank having been laid, the next thing is to grade a road some ten or twelve feet wide on one side, and two or three on the other, by taking earth from the ditches on each side, and bringing it by a ditch scraper just up to, and even with the upper side of the plank, so that if a wheel runs off the track, it passes upon a smooth surface of earth. The ends of the plank should not be laid even, but a part should project from two to four inches by the general line, to prevent a rut being cut just along the ends of a plank. If the ends of the plank are even, and a small rut is made, the wheel of a loaded wagon will scrape along the ends for some distance before it will rise up to the top of the plank, unless the wagon moves in a direction nearly across the road; but if the wheel cannot move two feet forward with-

out coming square against the edge of a projecting plank, the difficulty of getting on the road is avoided. It is not necessary to pin or spike the plank to the sills.

Perfect drainage must be secured, and to that end, the ditches must be deep and wide, and good sluices wherever water crosses the road. This is the important point—*drain perfectly.*

The thickness of the plank must be decided by the amount of travel. If it is sufficient to insure the *wearing* out, and not the *rotting* out of the timber, four inches is the thickness; if that thickness is not justified by the travel, then three inches should be used, but not less. The kind of timber is, too, a point that must be controlled by circumstances. Pine is used at Toronto. Hemlock on the Salina road. In some of the western States it is likely that oak might be procured at a reasonable price. The number of feet—board measure—of lumber required for two sills four inches square, for one mile, is 14,080. Plank, three inches thick, for a single track eight feet wide, will measure 126,720 feet. The grading and laying a track, will vary in cost, according to circumstances. When an old road way is used, and hills are not to be cut down, or vallies filled up, it will not vary much from fifty cents a rod for one track.

In those sections of the country where lumber is cheap, plank roads must go into very general use; and in some localities, it is the only road that can be made to endure the changes of the climate with any reasonable outlay of money. Less power is required to draw loading over them, and they are superior in every respect to McAdam roads while they last.—*New York Agricultural Transactions.*

The Whole Secret of Growing Quinces.

We especially commend the following communication on Quinces, which we find in a late number of Downing's Horticulturist, to our readers. There is no question but the cultivation of this fruit is too much neglected in this vicinity for the farmers' profit. We never saw the quinces in market quite so fine as they were last autumn: and we well recollect the seemingly extravagant prices at which they were sold. We wish we could arouse our readers to a far more energetic movement, in relation to the growing of fruit. It takes time, it is true, but good selections can scarcely fail to yield handsome profits.—Ed.

Sir,—I will comply with your request to write down for the benefit of your readers my practice in cultivating the *Quince* tree. The commendations you are pleased to bestow on my plantation of this fruit tree, leads me to suppose that I may have struck out a mode better than is generally known or practised.

If so, "it ought," as you say, "to be a secret no longer." Indeed, I have had too many valuable hints from the pages of your journal, not to be willing to add my mite, should it be in my power, to the general stock of information.

I will begin, then, by saying that the great difference, which you have yourself noticed, between the growth and yield of my quince trees, and that of cultivators commonly, is, not that I have discovered a new mode of raising this valuable fruit. It is rather *that I cultivate my trees well*, and *most persons do not cultivate them at all.*

This sounds like a broad statement; but it is true. I have a neighbour who rides horticulture like a real hobby. His garden and orchard are filled with the hundreds of new pears, and other prodigies of the nurseries. I must do him the justice to say, that he grows these well. He told me last week that he had three hundred and forty sorts of pears in his collection! But would you believe it? the only quinces he has, are three trees, half starved, and thrust into an obscure quarter of his grounds, where they have neither been manured nor dug around, I dare say, for years! And thus he sends to me every year for some of my "handsome quinces," under the plea, that his soil does not suit them.

Believe me, the quince tree is a great sufferer from the common delusion that it is a *bush* that wants a damp and shady place; that it will not grow in a dry soil; and that it does not need any manure.

My theory and practice are based on the very opposite of these three propositions. My plantations, as you saw, are on a high and dry soil, in an open sunny exposure, and in ground kept thoroughly enriched.

I have arrived at this plan of culture by easy stages. Indeed, I have, at the present time, some rows of quinces, *indifferently planted* in the first place, in soil neither deepened nor duly manured beforehand. Of course, they bear only about half the crop of my later plantation, that has been better treated from the beginning.

The course I have now settled upon, which I may say has been attended with perfect success, is as follows: Premising that the quince will grow on any soil that will give good corn or potatoes, the first maxim is, that it should be well prepared before planting. This is done by the aid of that great earth regenerator, the subsoil plough. Two or three weeks, if possible, before the planting season, the land where the quince orchard is to be set, should be

broken up by a team of horses and a good plough, set so as to turn a clean furrow. Following this team comes the subsoil plough, drawn by a powerful pair of oxen. This breaks up and stirs the soil twice the usual depth. Most persons spread a coat of manure before ploughing. It is my practice to have it scattered along *in the bottom of each furrow*, from a light cart, which follows the subsoil plough. This places it at the bottom of my soil, which, *as it is a loamy one*, is the best place for it; because it enriches the poorest layer, and being always damp, it is, I conceive, always more soluble, and ready for the roots to take up, than when mixed with the top soil.

The soil, thoroughly ploughed and prepared, planting may commence. I prefer the *spring*, but I have often been equally successful in the *autumn*. But in either case, by all means, "take time by the forelock." Not later than the first of November, or the 10th of April, for the latitude of New York may, I think, be safely given as sound advice.

Dig your holes twice as large as the roots of the trees, and eighteen inches deep. Have, if possible, half a barrel full of good compost —stable manure and bog earth well mixed for three months previously,—for each tree. Shorten in the branches—one-half of the last year's growth—before you set the trees, and give the roots a good drenching with water before you cover them entirely with soil. Press the earth moderately about the roots, and leave the soil round the stem concave like a saucer, to catch the showers. In this way, if you lose one plant in a hundred, it will be an exception to my usual good luck.

In orchard plantation, I would recommend the quince tree to be put out in rows: the trees to be ten feet apart, and the rows to be twelve feet apart. This will be near enough in good soil, deep, and prepared as I have just described. You will be able to gather a good crop of fruit from such a plantation three years after it is made; and if it is well treated, it will continue in a productive state for *thirty years*. Such quinces as I have grown in this way will always command two cents a piece in the New York market, when those carelessly grown, are not worth half that sum; and I doubt if there is any much more certain and profitable orchard crop than the quince. I ought to observe, that for many years open spaces in the ground occupied by the quince orchard, may be cropped with potatoes, sugar beets, and the like, with profit and advantage to the trees themselves.

The annual treatment which I give my quince plantations, is, as nearly as possible, as follows: I prune my trees in the autumn, just after the fall of the leaf. This pruning consists in cutting out *as little as possible*, mainly old or decayed wood, or any branches that make the head too thick or unsightly.

In November I fork in around the roots of each tree, five or six shovelfuls of fresh stable manure. This dissolves in part by the autumn rains, and fills the soil with soluble matter ready for the first absorption by the young fibres in spring. When the spring opens, I have the ground ploughed between the rows, and lightly stirred beneath the trees. Directly after this, I give the whole a broadcast spread of salt, at the rate of ten bushels to the acre, or just a light coat sufficient to half conceal the ground under each tree. The cheapest and best salt for this purpose, is the refuse salt of the packing houses, to be had in all large cities where meat is packed for exportation.

I observe that one of your correspondents in Oneida county, has recommended salt for this tree in the last number of your journal. It is a good thing—I may say, the best thing for this fruit. I have used it now for five years, very plentifully, and can say with much confidence, that it is the *sine qua non* for the quince tree. Deep green foliage, thrifty growth, and large fair fruit, have, with me, invariably followed its judicious application. The quince and the plum will bear more of it than any other fruit tree; and provided there is sufficient strength in the soil—that is, provided manure is also given—it may be used every year with decided advantage. I have found by experience, two things: first, that necessary as manure is to the quince tree, yet common manure without salt will not give the very finest quinces; and second, that a poor soil will not bear heavy doses of salt without injury to vegetation.

Every tree has its insect. The only one worth notice, that infests the quince, is a little rascal, a sort of *Scolytus*, I believe, that kills the ends of the branches. The egg is deposited about midsummer. The next spring, the little grub which succeeds it, eats through to the pith of the branch, and cuts away the sap vessels just at the time—midsummer—when they are most wanted. Of course, the shoot above the insect withers and turns black. If this is "let alone," it will spread over your whole plantation. If, on the contrary, you give a little attention to it—say a few minutes every day, from the first day in June, that the dying shoots begin to show themselves, cutting off the limb six inches below where it is blackened, and burning up the trim-

mings immediately, you will gradually get rid of the whole brood.

If there is anything in this rather prolix account that is worth making public, it is at your service. I am, sir, your obedient servant. An Old Orchardist.

New York, July, 1847.

Wool.

The following statement, from the Springfield, Ill. Republic, gives a good account of the wool product of Clark county. The fault found in it, with the dirty manner in which Western wool is sent to market, is, we are sorry to say, well founded. We have frequently called the attention of our agricultural readers to this subject, and circulars have been sent out from large dealers in both eastern and western cities, representing the effect of burs, dirt, and bad handling, upon prices; but our western growers still prefer to lose 33⅓ per cent. from the price, to performing the additional labour of sending their wool to market clean.

Springfield, Aug. 4th, 1847.

Messrs. Gallagher & Crain,—At your request, we furnish you with the following statistical account, as near as can be ascertained, of the amount of wool grown in this county. The amount purchased by the different buyers are as follows:

Paist & Jones, South Charleston,	70,000
Bean & Griggs, Springfield,	60,000
Ira Paige, Springfield,	30,000
W. Pugsley, of Madison county,	10,000
Making in all,	170,000
Add to this surplus, say	30,000
	200,000

In the hands of the farmers for their own consumption, and you have 200,000 lbs. at 24½ cents per lb., which is the average cost of our own purchases, making the nice little sum of $49,000. So much for Clark.

If wool growers would give more attention to their sheep, and take that pride every farmer ought in preparing his clip for market, by having it *clean, free from burs, and well tied up*, instead of the *dirty and slovenly manner* in which the greater portion of *western* wool is brought to market, they would obtain from two to three cents more per pound for it, and help to redeem the *bad name* we have in our domestic and in the European wool markets.

It is a well known fact, that "Western American wool" is not sought for until the last resort in the English wool markets. They seek after German and Australian in preference, for no other reason than that our wool, *generally*, is burry, dirty, and badly handled.—*Enquirer.*

Terrace Cultivation in China.

The terrace cultivation of China has been noticed by nearly all the writers upon this country; and like most other subjects, it has been either much exaggerated, or under valued. It appeared to me to be carried to the greatest perfection on the hill-sides adjacent to the river Min, near Foochoofoo; at least I was more struck with it there than anywhere else. On sailing up that beautiful river, these terraces look like steps on the sides of the mountains, one rising above another, until they sometimes reach six or eight hundred feet above the level of the sea. When the rice and other crops are young, these terraces are clothed in luxuriant green, and look like a collection of gardens among the rugged and barren mountains. The terrace system is adopted by the Chinese, either for the purpose of supplying the hill-sides with water where paddy is to be grown, or to prevent the heavy rains from washing down the loose soil from the roots of other vegetables. Hence these cuttings are seen all over the sides of the hills, not exactly level like the rice terraces, but level enough to answer the purpose of checking the rains in their descent from the mountain. For the same reason, the sweet potatoe, and some other crops which are grown on the hills, are always planted in ridges which run cross-ways or horizontally; indeed, were the ridges made in a different direction, the heavy rains which fall in the early summer months would carry both the loose soil and crops down into the plains. Rice is grown on the lower terrace ground; and a stream of water is always led from some ravine, and made to flow across the sides of the hills, until it reaches the highest terrace, into which it flows and floods the whole of the level space. When the water rises three or four inches in height, which is sufficiently high for the rice, it finds vent at an opening made for the purpose in the bank, through which it flows into the terrace below, which it floods in the same manner, and so on to the lowest. In this way the whole of the rice terraces are kept continually flooded, until the stalks of the crops assume a yellow ripening hue, when the water being no longer required, it is turned back into its natural channel, or led to a different part of the hill, for the nourishment of other crops.—*Fortune's Wanderings in China.*

Frying.

Frying, as is properly observed by Dr. Kitchiner, is often a convenient mode of cookery; it may be performed by a fire which will not do for roasting or boiling, and by the introduction of the pan between the meat and the fire, things get more equally dressed.

Be very particular that your frying pan is perfectly clean before using it. Never use any oil, butter, lard, or drippings, which are not perfectly free from salt, and perfectly sweet and fresh. As frying is, in fact, boiling in oil fat, it is of the first importance that your fat should be clean, or it will spoil the look as well as the flavour, and salt will prevent the meat from browning.

Good oil is, perhaps, the best to fry in, but sweet fresh lard, or clarified mutton or beef suet, will answer every purpose, nearly, if not quite as well as the best oil or butter, and, what is of greater importance, at a much less expense. Nice clean dripping is almost as good as anything. After you have done frying preserve your fat, which, if not burnt, will do for three or four fryings; but fat in which fish has been fried will do for nothing else.

If your fat is not of a proper heat, your frying cannot be well done; this is, in short, the great secret in frying, which the young cook ought and must acquire. The frying pan must always be set over a sharp and clear fire, or otherwise the fat is too long before it becomes ready. When the fat has done hissing, or bubbling, that is, when it is still, you may be pretty sure that it is hot enough. It is a good way to try the heat of your fat, by throwing a little bit of bread into the pan; if it fries crisp, the fat is of the right heat—if it burns the bread, it is too hot.

When your things are well done, take care and drain all the fat from them *most thoroughly*, particularly those that have been fried in bread crumbs, &c.; if you do not, your cookery will be marred. Fried fish ought to be quite dry. This depends in a great measure upon the fat in which they are dressed being of a proper heat. If the fish are well done, and are well drained of the fat, they will become quite dry and crisp in a few minutes after they have been taken out of the pan. If this, however, should not be the case, and the fish on the contrary should be damp and wet, lay them on a soft cloth before the fire, turning them occasionally till they are dry. They will sometimes take ten or fifteen minutes drying.

In preparing bread crumbs in a considerable quantity, in order to save unbroken the crust, and preserving it fit for the table cut your loaf into three equal parts, that is, cut off the bottom and top crusts, and use the middle part or the crumb for your frying. The bread should be at least two days old. A good and cheap substitute for bread is oatmeal, which will cost, comparatively speaking, nothing.

It is scarcely necessary to refer the cook to our general remarks upon the above operation. Frying is preferred by many persons to broiling; and our own opinion is, that steaks, chops, &c., may be dressed with much more certainty and regularity by the former, than by the latter, method. But plenty of oil, butter, or sweet grease, must always be used, or the frying will be imperfect.—*Sanderson.*

Transplanting Fruit Trees in the Spring and Autumn.

By S. G. Perkins, Esq., Boston, Mass.

First prepare the ground where they are to be put, so that water will not remain on or near the roots. Examine the roots of the tree before planting, and *cut out* all rotten or defective roots, and *cut in* (shorted) all that are bruised or otherwise injured, to sound wood above the wound. Be careful not to plant too deep, as this may be fatal to your tree.

If the tree does not put out shoots in the spring, at the usual time, or as soon as others do that were planted at the same time, give it one good watering at the roots, and no more while it remains in a dormant state; but if the bark remains fresh, or does not turn black, *wash the head and body* with a watering pot or syringe every evening at sundown, until it begins to shoot or grow, when you may cease watering the head, and water the roots if required. I have had trees to remain until the last of July without putting out a leaf or shoot of any kind, and after that become as fine specimens as any in my garden.

No manure should be put to fruit trees, except it be a little vegetable manure, quite rotten, and that mixed with the earth that is to cover the roots. The question is frequently asked whether it be best to plant fruit trees in the spring or autumn. This, in this latitude, must depend on the *soil* into which they are to be put. If the soil be a wet, clayey one, it is best to plant in the spring; but if it be a light, gravelly soil, the autumn is preferable, because you gain four or five weeks in the growth of your plant in the spring.

If water be allowed to remain about the roots of trees that are recently planted, and

are not growing, it will probably rot them by becoming stagnant and putrid. Trees should be planted therefore, so that the water will run over and off the roots, which is all they require to afford them nourishment.

Watering the head and body of a tree that is tardy in putting forth its shoots, is the safest, and indeed the only sure mode of bringing them out, while a continued watering of the roots is almost sure destruction to them.

Trees planted on a south wall or fence, that do not put out shoots in due season, should be covered for several hours when the sun is out, if the weather be warm. The leaves may be considered a sort of suction pump, which draws up the moisture from its roots and produces its increased growth, whereas a tree without leaves, and that is not already attached to the ground, has no means of carrying off the moisture from the roots. For example, of two branches of equal size and weight, the one with leaves and the other without them, are placed in vessels containing an equal quantity of water, and exposed to the sun, the one having leaves will take up the greater part of the liquid, while the other will consume comparatively little.

Some ten years ago, I imported from Paris 210 pear trees on quince stocks, whose roots, on their arrival, I found to be entirely black and dead. I shaved off with a drawing knife all the roots down to the stump. These I planted in trenches, tying them to cross-bars to keep them firm, and then filled up the trench with good soil. The heads and bodies of these trees were regularly washed in dry weather until they began to sprout, which most of them did in abundance during the summer, and I finally saved out of the whole number, 174, which became as well rooted and as good trees as any in my garden.

This has happened more than once. Three or four years ago, I imported among other trees, twenty plum trees, from six to seven feet high, the heads of which had been budded the previous year in France. These buds had grown from nine to twelve inches long, and were perfectly fresh when they arrived; but the roots on examination were found entirely dead. Two of these I gave away. One was good for nothing, and the other seventeen I planted in my garden, having cut out all the roots that had fibres, they being entirely dead. One of my men said I might as well plant my walking-stick. Sixteen of these are now flourishing trees, well grown and well rooted, new roots being induced by means of washing the upper part of the tree.

Remarks.—The foregoing will please such of our readers as like plain, sensible advice, from a thoroughly practical man. We have ourselves seen with great surprise and satisfaction the trees referred to as having been so successfully transplanted by Mr. Perkins, under what were the most unfavourable circumstances. The great advantage of the mode he practices, of *watering the bark*, and not watering the roots of a tree, in a half dormant state, our correspondent thoroughly convinced us of in his own garden. Our readers are solicited to put in practice the invaluable advice he gives them. There is no doubt that half the trees that die annually from the ignorance of transplanters, perish from a mistaken notion of deluging their roots with water daily, when their fibres are so feeble as to dread it as much as a patient afflicted with the hydrophobia.—*Downing's Horticulturist.*

Sympathy of Birds.

A GENTLEMAN of our acquaintance, a week or two since, remarked an unusual collection of brown thrushes in a thicket contiguous to his residence. His attention having been drawn toward them for several successive days by their loud cries and eccentric movements, he was at length induced to investigate more closely the cause of this unwonted congress of his feathered tenants, and ascertain if possible the cause of their excitement. Upon examining the thicket he discovered a female thrush suspended by one wing to a limb. Near by was her nest containing several half grown birds.

From the attendant circumstance he immediately concluded, that the maternal bird must have become entangled before the process of incubation was completed, and that some kindly hearted neighbour had supplied her place in hatching and brooding her callow offspring. He withdrew a few rods and the committee of relief immediately resumed the self-imposed duty of administering "aid and comfort," in the form of worms and other insects, alternating between the mother and her young—she, meanwhile, cheering them on in their labour of love with the peculiar note which first led to the discovery of her situation.

Having watched this exhibition of charity for some half hour, our informant relieved the mother bird. She immediately flew to her nest, expressing her gratitude by her sweetest notes. Her charitable friends, their "occupation now being gone,"—as the police

report says—dispersed to their respective places of abode, singing as they went a song of joy.

The above statement may be relied upon in every particular. The many pleasing reflections which it suggests, we leave to be recorded by our friends abroad.—*New Haven Herald.*

To Cook Bacon, Ham, Tongues.

First, well wash and scrape clean. If very salt, it may soak in cold water a few hours; allow plenty of water, fresh rain or river water is best; put it in when the chill is off, and let it be a good while coming to the boil, then keep it very gently simmering. If time allows, throw away nearly or quite all the liquor of bacon as soon as it boils up, and renew it with fresh cold water; reckon the time from the second boiling. A pound of streaky bacon will require three-quarters of an hour to boil; a quarter of an hour for every additional pound. If good bacon it will swell in boiling, and when done the rind will pull off easily. Take it up on a common dish to remove the rind, and sprinkle it over with bread raspings, sifted through a flour dredge, or grater. A ham of twelve or fourteen pounds will require four or five hours simmering, or four hours baking in a moderate oven. When done, remove the skin as whole as possible, and preserve it to cover over the ham and keep it moist. If to be served hot, strew raspings as above; but if intended for eating cold, omit the raspings. It will be much the more juicy for not cutting hot. Set it on a baking stand, or some other contrivance, to keep it from touching the dish; this preserves it from swamping in the fat that drips from it, keeps the fat nice and white for use, and also makes the ham keep the longer from becoming mouldy, by the outside being perfectly dry. Whether hot or cold, garnish with parsley. A neat's tongue, according to its size, age, and freshness, will require from two hours and a half to four hours slow boiling. When done, it will stick tender, and the skin will peel off easily. A dried chine, or hog's cheek, may be allowed the same boiling as bacon, viz: four pounds an hour and a half, and a quarter of an hour for every additional pound.*—*Sanderson.*

Lightning Rods.

The wire suitable for lightning rods is that known as No. 0, or No. 1, Iron wire, six feet of it weigh about one pound, and is sold by Phelps, Dodge & Co., Cliff street, New York, at six cents per pound. This is the size of the wire used in the United States Navy for 74 gun ships. It has never been known to fail of conducting the lightning where the wire extended above the top of the mast and terminated in the water, nor have the hundreds of tons of metal in guns, chain-cables and anchors on board the ship, ever been known to divert the lightning from the wire. The protection of a factory from damage by lightning is very simple and the expense but little. A factory 100 feet long and 36 feet wide, should have four lightning wires, and rising a few feet above the highest point of the building and placed at equal distances apart, so that not more than 20 feet surface should extend in any direction from the rod. The rods should be pointed at the top, and terminate in water—if possible, even if the rod is made to diverge to reach such a termination—if water cannot be reached, let the rod terminate deep enough in the ground to reach permanent moisture. This brief direction will be found ample.

The rod in descending should not be brought in contact with the tin leaders, as is sometimes the case—for the tin leaders may divert the lightning by affording it a more acceptable conductor. Lightning possesses wonderful disconnecting powers and has a great fondness for bright metallic surfaces, and will pass over such in preference to any other where the various surfaces are in *actual* contact.—*Farmer & Mechanic.*

Cultivation of Onions.

John W. Proctor, Esq., of Massachusetts, states in the Boston Cultivator, that there are three individuals in his neighbourhood, each of whom produces annually from two thousand to three thousand bushels of onions. They, in some instances, rent the land at $6 to $10 per acre, and the average product is three hundred bushels per acre. He says the onions, when ready for market, are worth $100 more than the rent of the land and the cost of the manure, leaving this sum as the compensation of the labour applied. He does not give the price of the onions per bushel, but we have lately seen it stated that the average in this neighbourhood is 37½ cents a bushel. The same land is continued in onions several years in succession. Mr. P. states, that some lots have borne this crop every year for ten years, without any depreciation in yield. "Muscle bed" and leached ashes are much used for manure. Great pains are taken in the pre-

* Our cooks are apt to boil a ham, or indeed bacon of any kind, too fast.—Ed.

paration of the soil, particularly to have the top well pulverized. The seed is sown with great accuracy by a machine, and strict attention is given to keeping the crop clear of weeds. It is calculated that one man and two boys of the ages of twelve to sixteen years will manage ten acres. Mr. P. says he knows of several individuals who commenced this business at the age of twenty-one, and have pursued it up for a dozen years or more, have brought up respectable families, and are now worth comfortable estates.

For the Farmers' Cabinet.

Nutrition of Superfine Flour, or Whole Meal.

To the Editor,—I lately came across the following remarks and calculations of Professor Johnston, and they seemed to me so practical, and to every day purpose, that I forward them to the Cabinet. But perhaps the Editor will exclaim, What! "book eating!" why the very idea of that will frighten our readers more than "book farming." Perhaps it may do so. No doubt many will put the article aside, and conclude that their stomachs and their fathers' were as wise without chemistry as the Professor's is, in the midst of his laboratory. Still facts are stubborn things, and we all know, who have been so unfortunate as to be dyspeptic ourselves, or to have friends who were, that "bran" bread does suit weak digestive powers, and I am apt to conclude, if the Doctor's scales and tests have been right, that there must be something in the results worth looking into. N.

"I propose to show, in an intelligible manner, that whole meal flour is really more nourishing, as well as more wholesome, than fine white flour, as food for man.

"The solid parts of the human body consist, principally, of three several portions: the fat, the muscle, and the bone. These three substances are liable to constant waste in the living body, and therefore must be constantly renewed from the food that we eat. The vegetable food that we consume contains these three substances almost ready formed. The plant is the brickmaker. The animal voluntarily introduces these bricks into its stomach, and then involuntarily—through the operation of the mysterious machinery within—picks out these bricks, transports them to different parts of the body, and builds them into their appropriate places. As the miller at his mill throws into the hopper the unground grain, and forthwith by the involuntary movements of the machinery, receives in his several sacks his fine flour, the seconds, the middlings, the pollard, and the bran; so in the human body, by a still more refined separation, the fat is extracted and deposited here, the muscular matter there, and the bony material in a third locality, where it can not only be stored up, but where its presence is actually at the moment necessary.

Again, the fluid parts of the body contain the same substances in a liquid form, on their way to or from the several parts of the body in which they are required. They include also a portion of salt or saline matter which is dissolved in them, as we dissolve common salt in our soup, or Epsom salts in the pleasant draughts with which our doctors delight to vex us. This saline matter is also obtained from the food.

Now it is self-evident, that that food must be the most nourishing which supplies all the ingredients of the body most abundantly on the whole, or in proportion most suited to the actual wants of the individual animal to which it is given.

How stands the question, then, in regard to this point between the brown bread and the white—the fine flour and the whole meal of wheat?

The grain of wheat consists of two parts, with which the miller is familiar—the inner grain and the skin that covers it. The inner grain gives the pure white flour; the skin, when separated, forms the bran. The miller cannot entirely peel off the skin from his grain, and thus some of it is unavoidably ground up with his flour. By sifting, he separates it more or less completely—his seconds, middlings, &c., owing their colour to the proportion of brown bran that has passed through the sieve along with the flour. The whole meal, as it is called, of which the so-named brown *household bread* is made, consists of the entire grain ground up together—used as it comes from the millstones unsifted, and therefore containing all the bran.

The first white flour, therefore, may be said to contain no bran, while the whole meal contains all that grew naturally upon the grain.

What is the composition of these two portions of the seed? How much do they respectively contain of the several constituents of the animal body? How much of each is contained also in the whole grain?

1. *The fat.* Of this ingredient a thousand pounds of the

Whole grain contain		28 lbs.
Fine flour	"	20 "
Bran	"	60 "

So that the bran is much richer in fat than

the interior part of the grain, and the whole grain ground together—whole meal—richer than the finer part of the flour in the proportion of nearly one half.

2. *The muscular matter.* I have had no opportunity as yet of ascertaining the relative proportions of this ingredient in the bran and fine flour of the same sample of grain. Numerous experiments, however, have been made in my laboratory, to determine these proportions in the flour and whole seed of several varieties of grain. The general result of these is, that the whole grain uniformly contains a larger quantity, weight for weight, than the fine flour extracted from it does. The particular results in the case of wheat and Indian corn were as follow: A thousand pounds of the whole grain and of the fine flour contained of muscular matter respectively,

	Whole grain.	*Fine flour.*
Wheat,	156 lbs.	130 lbs.
Indian corn,	140 "	110 "

Of the material out of which the animal muscle is to be formed, the whole meal or grain of wheat contains one-fifth more than the finest flour does. For maintaining muscular strength, therefore, it must be more valuable in an equal proportion.

2. *Bone material and saline matter.* Of these mineral constituents, as they may be called, of the animal body, a thousand pounds of bran, whole meal and fine flour, contain respectively,

Bran,	700 lbs.
Whole meal,	170 "
Fine flour,	60 "

So that in regard to this important part of our food, necessary to all living animals, but especially to the young who are growing, and to the mother who is giving milk—the whole meal is three times more nourishing than the fine flour.

Our case is now made out. Weight for weight, the whole grain or meal is more rich in all these three essential elements of a nutritive food, than the fine flour of wheat. By those whose only desire is to sustain their health and strength by the food they eat, ought not the whole meal to be preferred? To children who are rapidly growing, the browner the bread they eat, the more abundant the supply of the material from which their increasing bones and muscles are to be produced. To the milk-giving mother, the same food, and for a similar reason, is the most appropriate.

A glance at their mutual relations in regard to the three substances, presented in one view, will show this more clearly. A thousand pounds of each contain of the three several ingredients the following proportions:

	Whole meal.	*Fine flour.*
Muscular matter,	156 lbs.	130 lbs.
Bone material,	170	60
Fat,	28	20
Total in each,	354	210

Taking the three ingredients, therefore, together, the whole meal is one-half more valuable for fulfilling all the purposes of nutrition than the fine flour—and especially so in regard to the feeding of the young, the pregnant, and those who undergo much bodily fatigue.

It will not be denied that it is for a wise purpose that the Deity has so intimately associated, in the grain, the several substances which are necessary for the complete nutrition of animal bodies. The above considerations show how unwise we are in attempting to undo this natural collocation of materials. To please the eye and the palate, we sift out a less generally nutritious food; and, to make up for what we have removed, experience teaches us to have recourse to animal food of various descriptions.

For the Farmers' Cabinet.

Marl on Worn-out Lands.

It is delightful to read accounts like the following, of worn-out and impoverished lands being brought finely into clover, by so simple a means as the application of marl, bountifully provided by nature, in the vicinity, and only waiting the application of a little labour and enterprise, to turn the sterile, into the fruitful spot, and afford to the experimenter one of the most gratifying sensations—that of changing the very face of nature, and multiplying an hundred, or even five hundred times, his blades of grass. Any one who was acquainted with many parts of Burlington, Gloucester and Salem counties, in New Jersey, thirty years ago, and compares their productiveness then with that of the present day, may, we think, not despair of seeing the average crop of wheat one day in our country, something like 30 or even 40 bushels per acre. The Editor of the Cabinet may, perhaps, think the following letter, which I find in the *Agriculturist*, of sufficient interest to appear in his own columns. If so, he will gratify M.

"I have for many years been occasionally engaged in making experiments, designed to bring to light the best method of restoring to profitable culture, lands that are clothed with that unerring badge of pover-

ty, the broom-grass. The result of the following experiment in applying marl to such land, is now made public for the benefit of persons possessing worn-out lands, near deposits of this valuable manure.

"The impression has hitherto generally prevailed, that the application of marl to poor lands must be limited by the progress of cultivation, and that it could not exert much of its fertilizing power, if applied to such lands without cultivation. This, I think, is an error, as will be clearly shown by the result of the experiment which I will proceed to detail.

"In the month of February, 1846, five hundred bushels of blue or green sand marl were scattered on a measured acre of land which was covered with a growth of broom-grass, known to be alike the badge of poverty, and the memorial of maltreatment in bygone days.

"On this land, in March following, three gallons of red clover seed were scattered, and in the month of June, 1846, the clover was found to be in a thriving condition, bunches of it having reached the height of 28 inches in less than three months after the seed were sown. And now—June 12th, 1847—it has complete possession of the soil, and after having been much injured by a long and severe drought, that portion of it that has gone to bloom is from 15 to 20 inches high. As I did not wish my first experiment to prove abortive from drought, I used nearly double as much seed as would, under ordinary circumstances, be requisite. Two gallons to the acre would be an abundance. This land has not had the plough, hoe, or spade, to operate on it for nearly twenty years. Now it seems to me that the result of this experiment shows conclusively, that lands similar to this, which are abundant in Eastern Virginia, having a supply of blue marl near them, may be converted into rich grazing lands, without subjecting them to a previous succession of cleansing crops, and thus the farmer could make ample provision for his cattle and other animals, without grazing lands devoted to wheat, corn, &c.

"The cost of restoring such land as that mentioned above to fertility, by marling and applying clover seed, would be from five to seven dollars per acre, and this cannot be considered "paying too dear for the whistle," when it is recollected that the land, after the process, would be cheaper at thirty dollars per acre, than it would be at two dollars, if left in its previous impoverished condition. In the last mentioned state, it would bring the cultivator in debt; but when improved, it would not only yield enough to meet the expense of cultivating and securing the crops, but would also pay a handsome profit in the investment if valued at thirty dollars per acre.

"The land on which this experiment was made is hilly, with a southwestern aspect. I have another acre of clover on a hill with a northwestern aspect, which will come to maturity in June, 1848; and as many would regard a luxuriant growth of red clover, produced on such a soil without previous cultivation, as the eighth wonder of the world, I now invite all who feel interested in the matter, to visit Potomac Church about the middle of June, 1848.

"This land lies about half a mile distant from the Richmond, Fredericksburgh, and Potomac railroad, six miles from Fredericksburgh, five miles from Aquia creek, and within six hours' travel of Richmond, Va., by railroad; and five hours from Washington by railroad and steamboat. In this region the blue marl abounds, and lands capable of rapid improvement by its use, can now be purchased at moderate prices. If any of our northern friends are on the eve of departing for Oregon or California, it would be well for them to give this part of Virginia an examination before they pull up stakes and bid a final adieu to their native homes.

There is another consideration which should operate as an inducement to bring emigrants to this region.

A work is now progressing on the Rappahannock river, that will, it is supposed, at no distant period, bring into profitable use the extensive water power of the Rappahannock, which would result in a large addition to the business and population of Fredericksburgh. In that event the unoccupied land in the vicinity of Fredericksburgh, which can now be purchased at low prices, will advance in price from one hundred to three hundred per cent. The prospective value of western lands is inducing thousands to go thither, encountering the diseases and other hardships incident to unsettled regions; and as there exists a reasonable prospect that lands in this part of Virginia will ere long be greatly enhanced in value, this consideration should operate here with much greater force, because of the advantages arising from the nearness of good markets for the products of the soil, convenient access to means of education, &c. If persons desirous of examining lands in this part of Virginia, will call on me at Fredericksburgh, I will with pleasure render them all the aid in my power.

Layton Y. Atkins.

Fredericksburgh, Va., June, 1847.

Committees of Agricultural Society.

At a meeting of the Committee of Arrangement of the Philadelphia Society for promoting Agriculture, held on the 1st instant, the following named gentlemen were appointed to act as judges on the various committees, at the Exhibition to be held on the 14th and 15th of October next, at the Lamb tavern, on the Lancaster turnpike.

On Horses.—Dr. A. L. Elwyn, Chairman; Jacob Peters, James Jeanette, Capt. J. Babington, James Torbert, and Joseph French.

Cattle over two years old.—Thomas S. Woodward, Chairman; Benjamin Serrill, David George, Garrett Williamson, John Hibberd.

Cattle under two years old.—Joseph Crawford, Chairman; John M. George, W. W. Roberts, John Johnson, Samuel Cooper.

On Sheep or Swine.—John Lardner, Chairman; David Whitall, John Worth, jr., John James.

On Butter and Poultry.—C. S. Smith, Chairman; Asher Moore, George Blight, James McPherson, Homer Eachus.

On Implements and Produce.—Morris Longstreth, Esq., Chairman; Samuel Williams, Jesse George, Thomas S. Davis, Samuel H. Dager, Dr. G. Emerson, Dr. Hare.

On Ploughs and Ploughing.—Samuel Williams, Chairman; S. S. Richie, Garrett Williamson, Isaac Newton, Joseph George, John Hunter, Aaron Clement.

AARON CLEMENT, *Sec'ry.*

Philadelphia, Sept. 2nd, 1847.

For the Farmers' Cabinet.

Nurseries.

The greatest defect of nurserymen in general, particularly in the West, is the number of kinds they cultivate. Few persons in that business cultivate less than one to two hundred kinds of apples, and to a less extent in other fruit; which is a great loss to the community. I would ask why cultivate so many? There are but twelve months in the year—some of the choice kinds last two months and more. Then why raise a second or third-rate fruit, when the labour of altering is the same or nearly so? The different tastes of men do not vary so much. I am answered by some, that all these different kinds are called for; and they may be, by many who have known no better fruit; but give of the fruit of each kind, and their decision will agree. At Wheeling, some years since a committee of fruit men met every month and made decision of the best kinds of fruit exhibited for that month—this was a good plan. In the absence of such committee, take apples to suitable companies at different times, and by their decision arrange the fruit, confining the number to ten or twelve kinds of apples. The different nurserymen, by communicating their favourite fruit, those acquainted with that fruit will know if they have a better. I will commence with two—the Golden Gate and French Pippin. T.

Fallston, Pa.

For the Farmers' Cabinet.

Grape.

The grape is of the most simple and easy cultivation; once give it a start and it will take care of itself. Some years since I planted two vines at opposite corners of my house. After one year's growth, I directed one branch up the house and carried others under ground to the next desirable situation, between windows, and tacked the end up, and in a few years I had the sides of my house covered, and barrels of fruit of the choicest kinds. They generally ripen sooner on the house than on trees or arbours, and on the south-west first, south-east next, north-west last, having a succession from early to late. Some years since there was plenty on the house when those in gardens were killed. If too much trouble to tack up the vine on the house, plant a few and start them up trees, and in a few years they will produce largely without even pruning. Do not omit to leave some sprouts near the ground, and the following spring put part under ground leaving the end out, and in one year it will take root; if two to four joints are put under, it may, when taken up, be cut in two, and thus supply neighbours who want them. This mode of increasing grape vines takes very little trouble, and is as certain to grow as the parent stock. The plan of letting them run on trees, is by no means objectionable. The Isabellas *this year* are ripening as fast on trees as elsewhere, and large and full on the vine. If it be desirable to increase the number of vines, instead of laying down as mentioned above, take a long sprout from the root of the growth of the preceding year, dig a ditch six inches deep the length of the vine, laying the dirt on each side if level, if side hill, put the dirt on the upper side, to keep rain from filling it up too soon; fasten the vine in the bottom of this ditch, leaving it uncovered until the sprouts from each joint raise a foot or more, when the vine may be loosely covered with earth, and by rubbing off the ends of those growing too fast, a root may be raised from every bud or joint.

Large vines may be greatly improved in

some situations by laying down the main vine under ground six inches, say from three to ten feet or more, and bring the top nearer the ground, and in an open space or on a different tree, it improves the fruit the same year if done early.

These hints are given not to induce neglect of proper culture, but to induce farmers—who always have enough to do when such ought to be done—to plant and protect one year. Hundreds of farmers west, and many east, have not a vine on their farm; when, for the amount of labour and cost, I know of nothing that so much contributes to the comfort of their family and friends. A.

Reclaimed Swamp.

T. K. D'Wolf's Statement.—The piece of land I offer for premium contains twelve acres and nine rods. To describe its appearance at the time I purchased, 1838, is impossible—full of bushes, large pine stumps, old logs, roots, bogs and brakes, mire holes and deep pits, swarms of frogs, serpents and lizards,—it was literally a den of "creeping things." One man in Chester—a poor man—had opened the door to this bedlam, and for many years, had the entire control of the wild grass, which he carried out on poles, and paid annually $3. This lot lies concave. The depression, or swampy portion, contains about six acres; its sides or upland were full of knolls and depressions, with briars, bushes, old logs and large stones—boulders—the most of them so large that they could not be removed without blasting, and some from eight to ten feet in diameter.

In the summer of 1839, I employed two Irishmen, and commenced ditching. I put a large centre ditch from north to south, and cross ditches from the centre, east and west, to the more elevated portions. The muck, in some portions of the centre ditch, is from six to eight feet deep, and gradually lessens as it approaches the upland. The bottom is a blue clay and white sand. After cutting the centre ditch, I employed four men with scythes, bush-hooks and axes, to cut off the grass and bushes, requiring them to put all the bushes into heaps, and the grass was taken off on poles, equal to two tons of good hay. The expense of cutting and piling the brush, and getting the hay, was forty-five days' work, for which I paid $45. After my cross-ditches were cut, I set fire to the heaps of brush, and in less than two hours the whole lot presented one black, smoking surface, and for the first time, probably, within the knowledge of man, it was thrown open to the full influence of the sun.

How it was possible, with any means I possessed, to remove the hundreds of stumps—and most of them large pine—the countless number of old logs, to fill up the great cavities, to remove the bogs, to dispose of the great rocks upon the upland, I could not conceive. It had always been a principle with me never to look back; but then, this enterprise had been undertaken against the advice of some of my best friends; first, because it was impracticable, and secondly, because, from my early youth, I had not been engaged in agricultural pursuits, and must be ignorant, of course, of the best manner of conducting the business. I was resolved, however, to go ahead, and this was one of the best resolutions of my life. As I moved forward, I soon found these mountains were molehills, and that many of these "insurmountables" were the exact materials I wanted in the completion of my object. The rocks and small stones upon the upland would make me a bold and durable fence, the bogs would fill up the mire holes in the mucky portions, and also the cavities in the upland, after removing the smaller rocks. The large amount of muck thrown from the ditches was just the thing for the upland, giving me an abundance of manure. The pine stumps and logs furnished a good quality of stove wood, for which I had been paying $1 50 and $2 per cord, and most of all, my friends had become convinced of the practicability of the operation, and that, too, in my hands.

The lot now presents a smooth surface, with the exception of some large stones on the upland. Every rod in the lot can be ploughed with an ox team. Most of the upland has been ploughed and cultivated with crops of wheat, corn, oats and potatoes. More than two-thirds of the mucky portion has been ploughed, made clean as a garden, cultivated with potatoes and oats, and seeded with herd's grass and clover. In seeding these portions, I am in the habit of giving a liberal top-dressing of horse manure—which, I believe, is preferable—say twenty-five cart loads to the acre, mixing it well by thorough harrowing. The portions which have not been ploughed have a smooth surface, and give me from one to two tons per acre of good stock hay, foul meadow, blue joint, and a tall native grass which resembles very much a large growth of red-top. I have been in the habit of taking up every year more or less for potatoes, with a view to clean the land, and the next season would put on oats and seed down. In seeding with oats, I have invariably lost much of my crop from the great growth of straw, being down and not well filled. The last year I adopted

the "new system" from the Massachusetts Ploughman, and in the month of August, after taking off the usual amount of the grass I have described, I took up a piece by ploughing and dragging thoroughly, cleaned it, gave the top-dressing, put in the seed—timothy and red-top—say a half bushel of the former to three pecks of the latter, and the present season I took from it the best crop of grass I ever saw. I intend, therefore, to complete my job in that way, the object being to clean the land and change the quality of the grass.

I opened an account with my lot when I commenced, charging every day's work, every load of manure, every bushel of seed, &c. I gave credit, as I passed along, for all the crops I took from it, including wood, &c.; and at the end of four years, it had paid principal and interest of the amount expended—over $300—and brought me in debt about $15. Since that time, I have made no estimate of the expense or profits, until the present season, and now only with a view to this statement.

The net profits of my lot, then, the present season, are as follows:

25 tons of hay at $8 per ton,		$200
Deduct 16 days' labour at $1 per day,	$16	
" " boy, 50 c. per day,	8	
" 32 days' board at $1 50 per week,	7	
" use of oxen and tools,	2	
	—	33
Net balance,		$167

Abstract of Ag. Returns.

Chester, Mass., October 8th, 1846.

Pickles.

The time of year is now approaching when all "good housewives" will be anxious to see their pickle pans filled, and as there is a variety of articles used for this purpose, we have concluded to present a few remarks relative to the manner of preserving them. Among the most highly esteemed, we may mention the *Mango pickle.* This is formed by immersing green muskmelons in a solution of salt in water for the space of eight days, taking out the seeds, filling the interior with unground mustard, horse-radish, cut fine, allspice, and small onions. The melons should then be immediately sewed together and scalded in sharp vinegar, or placed in a jar where vinegar heated to the boiling point can be poured over them.

Walnuts are pickled in the following manner: As soon as they become so ripe as to admit of their being easily perforated with a pin, they are fit for pickling. Having gathered your nuts, soak them for ten or fourteen days in very cold and strong brine which has been boiled and skimmed. Into a quantity of vinegar, sufficient to cover them, put whole pepper, mustard seed, cloves, small onions, garlic, ginger and horse-radish; this should be boiled and poured over the walnuts when cold. From two to three months are necessary to pickle the walnut, and when properly prepared, they are excellent and esteemed by most.

Peppers.—Peppers for pickling should be taken from the vines as soon as they have attained their maturity of growth, but before they are ripe. They should then be immediately immersed in salt water and suffered to remain until they begin to turn yellow. They should then be removed, and "greened" by immersing them in warm salt and water, shifting them every two or three days. This done, remove them to a suitable vessel—an earthen crock or jar is best—and pour over them boiling vinegar. If a small bag of mustard seed be deposited in the vessel, it will be found a great improvement.

Cucumbers ought to be pickled while perfectly green, and of small size, and should lie in weak brine from six to eight days. They should then be removed, and after being carefully washed, placed in a wooden vessel and kept in a warm place for a day or two, and then removed to the jar or crock and have as much vinegar, scalded with pepper, allspice, flagroot and mustard seed as will fill the vessel, poured over them. You may, in order to "green" them, throw in a small lump of alum, which will also harden them. Some boil their pickles in brass or copper kettles, but these metals, when acted on by a powerful acid, like vinegar, are not wholesome, and ought not, therefore, to be used.

Red Cabbages.—In the preparation of this vegetable for pickling, nothing more is necessary than to cut the heads from the stumps when grown, and to pour over them spiced vinegar, which has been previously boiled and skimmed, and suffering them to remain immersed for ten or twelve days before using. Some prefer immersing the heads in brine for twenty or twenty-four hours before turning in the vinegar, as they suppose it improves the flavor, and causes them to keep more perfectly. Where good vinegar is used, pickles will rarely grow soft or insipid, but if the vinegar is of a poor quality, or has suffered deterioration from any cause, or if the spices used to give flavor, are introduced without judgment, the reverse is often the case. When this takes place, no

time should be lost in decanting the vinegar, and replenishing the vessel with a fresh supply, scalding hot, in which horse-radish, allspice, ginger and a little alum have been thrown. If managed in this way, there is but little danger of failure, and the pickles, besides being regenerated, will keep for years perfectly sweet and unimpaired.

Nasturtions.—These require to be kept several days after they are taken from the plants, and then covered with boiling vinegar, in which they should remain until perfectly cold. They should then be carefully bottled and corked. In three months they may be brought to the table. Nasturtions make an excellent pickle, and should be cultivated in every garden whether large or small.

Artichokes.—This root makes a very good pickle. They should be taken from the ground while green, and put immediately into strong vinegar. No previous preparation is required.—*Olive Branch.*

Malaga Raisin Vineyards.

At daybreak this morning, a gentleman, whom Mr. Kirkpatrick requested to show me his vineyard, and explain the process of preserving grapes, waited upon me, and we set out immediately. Our road lay along the shore to the eastward, the vineyard of Don Salvador Solier lying in that direction, at the distance of about fourteen miles. In the immediate vicinity of Malaga, the country is extremely rugged, but every patch where it was possible to thrust in a plant was under cultivation. The rocks consisted of rugged masses of limestone, alternating with the same kind of slaty schist I had previously observed on the road from Antequera. For the first two leagues there were few vineyards, chiefly owing to the ruggedness of the country, which would not admit of cultivation. Beyond that distance almost every hill was covered with vines, the produce of which is all converted into raisins. The grapes are all of the large white Muscatel—the Muscatel Gordo of Roxas Clemente. This grape, my companion informed me, does not succeed in the interior, and therefore, all the Muscatel raisins are made within two leagues of the coast. The Lexia raisins, which are used for puddings, &c., are made in the interior. We arrived at the country house of Don Salvador at nine o'clock, and after a substantial breakfast, sallied out to examine the vines. Six or seven workmen were employed in preparing the ground for planting, within a short distance of the house. They did not trench the whole of the ground, but dug out square holes, about two feet in diameter, and not more than twenty inches in depth. The distance of the centres of these holes from each other is seven feet, and this is the distance at which the vines on the hills round Malaga seem invariably to be planted. The vineyard I was examining, as well as all those in its vicinity, consisted of a series of steep hills. The soil everywhere was a decomposed slate, mixed with abundance of gravel of the same substance. On the higher part of the ground, this soil appeared rather hard and required great labour to break it up, but once broken up it is loose forever; so much so that it slides away from under the feet even where there is only a slight slope. There is no difference made in the distance at which the vines are planted, between the hills and the valleys; although in many places on the former, the shoots scarcely extend more than ten or twelve inches, while in the valleys they extend to the length of as many feet. They never, under any circumstances, manure these vineyards; they say it would give more wood but would not add to the quantity of the fruit. The branches are pruned closer to the stock than those of any vines I ever saw; nothing but the half-formed buds, at the junction of the old and new wood, being left to produce the wood of the succeeding year. I could not find an instance where the spur had been left long enough to include the first full-formed bud, which is generally from half an inch to an inch from the junction. The number of shoots seemed almost unlimited; I counted from ten to twenty-two; there was scarcely any vine had fewer than ten, and they generally had from twelve to fifteen. The stock was close to the ground, and not the slightest effort made to raise the shoots, or support them from the ground. Almost every bunch would, therefore, lie on the ground; and were the soil of a less gravelly description, the greater part would, without doubt, be lost. After the pruning they dig over the ground and lay bare the stock, in order to scrape off the barbe, or small thread-like roots which are near the surface. As scarcely any grass or herb vegetates among these vines, and the soil is always sufficiently loose, it is evident that they require little digging or cleaning. We went out to visit a peasant, a neighbour of Don Salvador's. He said four or five very fine vines might yield raisins enough to fill a box which contains an arroba of 25 lbs.; but throughout the country it would require, on an average, nine or ten. The grapes lose about two-thirds of their weight in drying; this would,

therefore, give a produce of seven or eight pounds of grapes to each vine—a calculation which I should think must include a much greater proportion of stinted vines than of luxuriant ones; for the majority of those in Don Salvador's vineyard would, I have no doubt, yield double that quantity. Including, however, those vines which are visible at the tops even of the highest hills, the calculation is likely enough to be correct. The grapes, when dried, are worth double what they would yield made into wine, unless spoiled by the rain.

They usually commence gathering the grapes about the middle of August, choosing only such bunches as are ripe. They return after a week or two to make another selection, and so on for a third and fourth time. A place is always reserved in the vineyard, free from plants, on which to spread the grapes when gathered; and they choose a spot where the soil is of the darkest colour, in order to its keeping the full force of the sun's rays during the day, and retaining the heat during the night. The bunches are spread out separately on the ground, and never allowed to press upon each other: according to Don Salvador, they are only once turned over. At the end of fifteen days they are, in general, sufficiently dry. This season was more unfortunate for the early commencement of the rains, than any season for many years, and the crop was remarkably fine. It is Don Salvador's intention in future years, to have wooden toldos, or awnings, prepared to shelter the grapes, while drying, against the rains, and also to cover them during the night. He says that the drying of the grapes is so much retarded by their being exposed to the dews during the night, that when he has the means of covering them at night, he expects they will be dried in half the time usual at present. Before the bunches are spread out, the small grapes are picked out, as well as any which may happen to be injured; the small grapes are dried separately. I saw a heap of them in Don Salvador's house, which had the appearance of very large currants. When the grapes are turned, any spoiled ones are, or ought to be picked out; they have no particular rule for judging when they are sufficiently dry—it is learnt by experience. When they happen to get rain while drying, the stalks become black or rusty looking, instead of being of a bright light brown. According to Don Salvador, the district which produces the Muscatel grape extends only two leagues further east; that is, not more than three leagues in all, along the coast, and two leagues inwards. He says the value of the land planted with it is about 3,000 rials, or 150 Spanish dollars per fanega.—*Busby's Vineyards of France and Spain.*

The Advantages of having Field-work always in a Forward State.

The farmer who "takes time by the foretop" and drives his business, enjoys a kind of independence which he never can feel, whose business drives him. The winter is approaching, when if it be improved, much, very much may be accomplished to forward the spring operations. The following observations are to the point, and various useful hints may be taken from them, to accelerate the ofttimes hurried claims of early spring. They are taken from *Stephens' Book of the Farm.*—Ed.

> "Who breakesh timely his fallow or ley,
> Sets forward his husbandrie many a waye.
> This, timely well ended, doth forwardly bring
> Not only thy tillage, but all other thing."
>
> Tusser.

The season—*early spring*—having arrived when the labouring and sowing land for the various crops cultivated on a farm of mixed husbandry are about to occupy all hands for several months to come, the injunction of old Tusser to undertake them in time, that each may be finished in its proper season, should be regarded as a sound advice; for whenever your field labour is advanced ever so little at every opportunity of weather and leisure, no premature approach of the ensuing season can come upon you unawares; and should the season, on the other hand, be delayed beyond its usual period by natural causes, you will be *ready* to proceed with your work whenever the weather proves favourable. When work advances little by little, there is time to do it effectually; or, if it be not then executed in an effectual manner, you have yourself to blame for not looking after it. When I say, however, that work may be advanced little by little, I do not mean that it should be done in a slow, careless manner, as if the workpeople were unimpressed with the importance of what they were doing. The advantage of doing even a little is that whatever is done is not to do afterward; and that a little may be done as *well*, and in as short a time, as if it had been done as a part of a great operation. In this way, even if only one man is kept constantly at the plough, he would turn over, in the course of a time considered short when looked back upon, an extent of ground almost incredible. He will turn over an imperial acre a day, that is, six acres a week, twenty-four acres in a month, and seventy-two acres in the course of the dark and short days of the winter quarter. All this he will accomplish on the supposition that he has been enabled to go at his

plough every working day; but as that cannot probably happen in the winter quarter, suppose he turns over fifty acres instead of seventy-two, these will still comprehend the ploughing of the whole extent of ground allotted to be worked every year by each pair of horses when the farm was taken. In fact, here is a large proportion of a whole year's ploughing done in a single, and in the shortest quarter of the year.

Now, a week or two may quickly pass in winter in doing things of little moment, and which, in fact, amount to time being thrown away; such as sending away a rake of all the draughts to a stock corn market, on a day when there is little prospect of disposing of the grain, and when they would have been better employed at home at the plough; or driving some material on the farm which would better and easier be done when the ploughs are laid idle at any rate by frost; or in setting men to the corn-barn to thresh or clean corn, and laying the horses idle for the time; or in contriving some unimportant work to fill up the time for half a day, until the frost thaws a little on the lea, because it would give too much trouble to take the ploughs from the lea to the stubble field, if there be any such at the time. Sharpening and setting irons differently may form a reasonable excuse for shifting the ploughs from a stubble to a lea field, but no such excuse is available in neglecting to make the opposite transference. Such omissions and instances of misdirected labour are too much regarded as trifles *in winter;* but is undeniable that they occupy as much *time* as more important work; and in a season, too, when every operation of the field is preparatory to one at a more busy season. Occasionally the state of the work will force the consideration on the farmer, that it is not so far advanced as it should be, or even as he could wish; still, instead of pursuing a different course from that which has given rise to the reflection occasioned by the delay, his unsatisfied mind consoles itself with the assurance that when the season for active work actually arrives, the people will be able to make up for the lost time. This is, however, mere delusion; for if work can be made up, so can *time*, the two being inseparable; and yet how can lost time be made up, when every moment of the year has its work to perform, and when that period, long as it is, is usually found too short in which to do *everything* as it *ought to be done?* "There's the rub." For time eludes pursuit, and brooks no interruption; but neglected *work*, though *attempted* to be overtaken—and *it* may be overtaken before its issue—still the race will never terminate *in a satisfactory manner.* The neglected work may, no doubt, be done in a short time—in an unprecedentedly short time; but in that case, it is the time in which the work is done that is boasted of, not the work itself—the measure, and not the thing measured, which is held up to view; and yet, time being the standard by which all well-executed labour is measured, it cannot be deprived of that property, whatever devices may be used to make it go beyond its steady pace. You should remember that *its* pace is the same in winter as in summer, and the extent of labour, measured by the length of its tread, ought to be as great in winter as in summer, otherwise an irreclaimable error is assuredly committed in that season.

Convinced that *field*-labour should be perseveringly advanced in winter, whenever practicable, I am of opinion that plan is good which appoints ploughmen to different departments of labour; some to work constantly on the farm, others occasionally to go from home; some to be constantly, or nearly so, at the plough, others frequently at the cart. Thus the benefits of the subdivision of labour may be extended to the farm. When a certain proportion of the draughts are thus set aside for ploughing, *that most* important of all operations will not only be well done by those whose special duty it is to do it, but perseveringly and judiciously done. This proportion is only legitimately employed at any other work when there is no ploughing for them to execute. Ploughing being a steady occupation, not subject to the irregular action of the cart, can be performed by the older men and horses, who cannot so well bear the shocks of carting as younger men and horses.

Weevil in Wheat.—A practical farmer in our county tells us of an experiment he tried in keeping off this scourge of our wheat fields, which proved entirely successful. Last year his crops of rye and wheat were in adjoining fields, and he noticed that his wheat next the rye field was, apparently, unharmed by the weevil, while the remaining part of his wheat was mostly eaten up by the insect.

In the fall of '46, after sowing a small field with wheat, and harrowing it in one way, bestowed a peck of rye over the same ground, and harrowed it in the other way. The result is, his crop of wheat is good, stands 20 bushels to the acre, and is entirely free from the insect; while his neighbours wheat fields, of as good soil, are wholly destroyed by the weevil, and turned to pasture. He is a firm believer that the small quantity

of rye—mixed in sowing—with his wheat saved his crop. We have seen something of this kind mentioned somewhere, and are glad our farmers are testing the result. If the weevil will not touch wheat when rye is growing with it, the mixture should be made until the insect is exterminated.—*Oswego Times.*

Destruction of Trees and Birds.—We have had bounties for the destruction of birds,—only another form of granting gratuities for the propagation of worms and noxious insects. We have converted our wood lands into pastures,—and all that the cattle could not destroy, man has deemed it meritorious to cut down and uproot. Nothing has been left for beauty or shade, and nothing to break the force of the sweeping gale. But there is beginning to be developed another and a better feeling. It is perceived that, in the cultivation of trees, pleasure and utility may be combined; that our worn-out and desolate hills may be covered with verdant and beautiful forests; that our village streets may be adorned with shady rows; and that our gardens and fields may be studded with fruit trees, without diminishing the pasturage or fertility of the farm. A. Otis.

For the Farmers' Cabinet.

Altering.

Some years since I asked Dr. Kirtland for the best plan for altering old trees. He said, "bud them far out on the limbs, and not later than June, and never cut off a limb." Many trees are killed by cutting large limbs. Much as I have learned from the Doctor, from my own experience I prefer grafting first, in the spring far out, so as to make the limbs small that are cut off—this process invigorates the adjoining smaller limbs, when the budding of smaller branches may be done later, when the buds are older, for buds are mostly too young in June. The following spring all may be pruned off but making an entire change in one year. A.

Early Onions.—A correspondent of the Maine Farmer recommends that onions which are wanted for early maturity, should be sown early in September. With proper preparation of the soil, and sowing the seed by the 15th or 20th of this month, the plants will usually have time to attain the height of four or five inches before the ground closes, and be ready for an early and vigorous start in the spring. In many parts of Massachusetts, and particularly in the vicinity of Boston, where there is always a ready market for early garden vegetables, the practice of autumnal sowing extensively prevails. He observes: "we have seen large beds of this esculent, and sometimes whole *fields* sown in this way, and have cultivated them successively in the same manner ourself."

Preparation of Seed Wheat.—By sieves of suitable size, the largest and best grain may be separated. By washing in water, light seeds of various kinds, and the lightest grain, will swim, and may be skimmed off. By adding salt to the water, which will increase its specific gravity, old imperfect grains, and barley and oats will rise to the surface. Then it will be well to steep the seed a day or two in salt and water; after which add half a peck of fresh slaked lime to a bushel of grain, mix thoroughly, that every kernel may become coated with lime. Let it remain half a day, or night, after liming, and then sow.—*Ex. paper.*

Summer Crops of Peas.—Those of your readers who are fond of a succession of this fine vegetable, and have found difficulty in obtaining such during the drier parts of the summer, may be pleased to learn that they may be successful if they will plant them in shallow trenches, in the same way as they are usually prepared for celery—the trenches should, however, only be five or six inches deep. These trenches catch a supply of moisture during showers and retain it, so that, as I have found, the rows of peas grown in them, are green and luxuriant, when on the flat surface adjoining they fail entirely. *Horticulturist.*

THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

Philadelphia, Ninth Month, 1847.

The Burlington County Agricultural Society was organised at Mount Holly on the 16th of second month last, and a Constitution adopted. Dr. Spencer was chosen President—Wm. N. Shinn, Isaac V. Brown, Charles Collins, and Levi Borton, Vice-presidents—Joseph F. Burr, Recording Secretary—Chalkley Gillingham, Corresponding Secretary—and Charles M. Harker, Treasurer—Samuel A. Dobbins, Charles Haines, John W. Black, George B. Deacon, William Parry, and David B. Coles, Executive Committee. The good land, good farming, and wealth of Burlington county, should

be a guaranty for an energetic and efficient Society. Their first Annual Exhibition will be held at Mount Holly on the 20th of next month. A list of premiums offered will be found on page 50.

It is stated in the *Belgian Horticulturist*, that M. Houlton has communicated to the Medico Botanic Society of Louviers, that an onion which he had found in the hand of an Egyptian mummy, which had been entombed more than two thousand years, on being planted in a garden, had vegetated with great strength. It did not vary at all in appearance or qualities from the onion of the present day.

A proposition by John De La Haye, of Liverpool, has appeared in the *Mechanics Magazine*, to build a submarine Railway from Dover to Calais. It is to be placed on the bottom of the sea, which is said to be, across the Straits, very little undulating. He writes as if he thought his plan entirely practicable, at a cost of only £2,500,000. This would be a bolder work than the Thames Tunnel.

The seventeenth Exhibition of the *Franklin Institute* of the State of Pennsylvania, for the promotion of the *Mechanic Arts*, will open at the Museum building in this city on the 19th of next month, and close on the 30th. These have heretofore been occasions of great interest, and the approaching Exhibition, we trust, will not be inferior to those which have preceded it.

Enquiry has been made from York, Pa., whether Parker Askew was correct when he stated in our last number, page 15, that the "first growth" of his *Mediterranean* wheat was apparently destroyed by the *fly*: as the general belief has hitherto been, that this species of wheat was not liable to injury from this insect. The article originally appeared in the Cecil Whig, whence it will be perceived, we copied. But we believe that statements have been made at different times and in different sections of country, that the Mediterranean variety did not continue to be so exempt from the ravages of the fly, as it at first promised to be.

The kindness of W. Bacon, of Richmond, Massachusetts, has put on our table a valuable Abstract from the Returns of Agricultural Societies, in Massachusetts, in 1846.

The *Revue Horticole* speaks of the *Belle Angevine* pear as a variety remarkable for its great size. M. Calle, of Brionne, had produced on one of his trees, a specimen which we should think, hardly need be beat. It weighed 2 lbs. 15 oz. avoirdupois; measured more than 13 inches in circumference, and was nearly eight inches in height.

Silas Wright, who was to have delivered the Address at the New York State Agricultural Show, at Saratoga Springs, we regret to state, has been summoned, after a short illness, to that bourne, whence no traveller returns. We have not been advised whom the Society has selected to supply his place.

The efforts of the Massachusetts Agricultural Society are laudably directed, and with great energy to practical purposes. Not content with having made considerable importations of stock, with a view to the improvement of the breeds of cattle, they have ordered from Paris, at a cost of about $800, the figure of a horse of full size, so constructed as to admit of all the pieces being taken apart. These pieces represent the muscles, blood vessels, heart, lungs, and other organs of their natural size and appearance. They are composed of materials of an imperishable nature, and when put together, form a beautiful object. They have also directed the preparation of the skeletons in full size, of the horse and ox, that an exact knowledge of the limbs of these valuable animals may be within reach of the curious enquirer. When these objects arrive in Boston they will be placed together in some convenient situation, and made accessible to the public without expense.

Reports from almost every section of our country, speak of the fine promise of the corn crop. Wheat flour is worth $5 50 to $6 per barrel, and corn 65 to 70 cents per bushel.

Daniel Lee, of the Genesee Farmer, is to be the future Editor of the *Southern Cultivator*.

J. W. Moore, of this city, has lately published a neat duodecimo volume of some 260 pages, entitled "*Agricultural Botany;* an enumeration and description of useful plants and weeds, which merit the notice or require the attention of American Agriculturists; by William Darlington, M. D." It is dedicated by the author to "The Young Farmers of the United States," to aid and persuade them to cultivate a department of science essential to an enlightened agriculture, and indispensable to an accomplished yeomanry: and it will be found eminently useful for the purpose designed: for whatever Dr. Darlington attempts in these favourite pursuits, will be well done. He addresses himself "to the youthful and aspiring agriculturists of our country, who seek to elevate their noble profession to its just rank among human pursuits,—and who feel that the exercise of intellect, as well as of muscle, is indispensable to the accomplishment of their purpose." We heartily commend the volume to the enquirer who would know something of every plant that grows on his farm. The "Observations," apart from the technical matter, are highly interesting and instructive.

☞ SHORT ADVERTISEMENTS,

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line. Payment in advance.

THE quantity of rain which fell in the 8th month, 1847, was ..... 3.18 in.

Penn. Hospital, 9th mo. 1st.

Poudrette.

A valuable manure—of the best quality, prepared in Philadelphia, for sale at the office of the Farmers' Cabinet, No. 50, North Fourth Street, or at the manufactory, near the Penitentiary on Coates' street. Present price, $1 75 per barrel, containing four bushels each, or 35 cents a bushel. Orders from a distance, enclosing the cash, with cost of porterage, will be promptly attended to, by carefully delivering the barrels on board of such conveyance as may be designated. The results on corn and wheat have been generally very satisfactory. Farmers to the south and in the interior, both of this State and of New Jersey, are invited to try it. We are now ready to supply any demand for wheat.

JOSIAH TATUM.

Philada. 8th mo 16th, 1847.

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Joseph Rakestraw, Printer.

THE FARMERS' CABINET,

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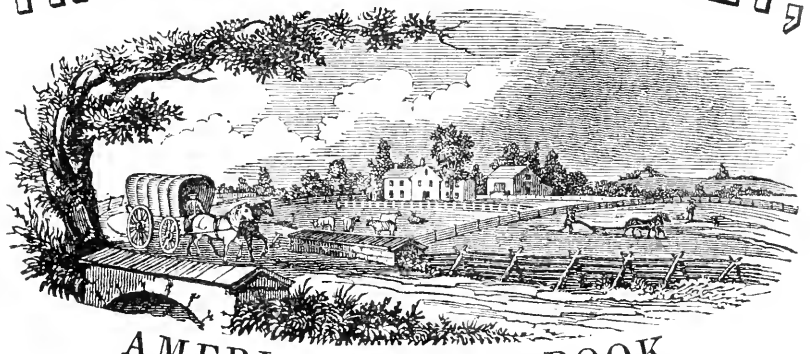

AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—LIEBIG.

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BY JOSIAH TATUM,

EDITOR AND PROPRIETOR,

No. 50 North Fourth Street,

PHILADELPHIA.

Price one dollar per year.—For conditions see last page.

For the Farmers' Cabinet.

The Plough.

In a history of the Plough, extracted from the New York Agricultural Transactions, and published in the Cabinet for August, p. 19, I do not consider that justice has been done the subject, inasmuch as no notice whatever is taken of one of the greatest—perhaps the very *greatest* improvement that has been made in that all-important implement, since its first invention. I allude to the principle of Centre-draught, invented and patented by Prouty & Mears, of Boston, and which still retains its primitive superiority; their ploughs having, the last season, taken twenty-three premiums in competition, in different parts of the country, including the Philadelphia Society's first premium "for the best plough after trial;" that honourable testimony having been awarded to it five years out of six, and for the last three years in succession. As proof of the importance of this invention, I would ask leave to extract the following sentence from a late communication by Elias Phinney, Esq., of Lexington, Mass., whose praise, as a practical and scientific tiller of the soil, is in all that part of the country, which may properly be denominated "the Scotland of America." He says:

"I have, for twenty-five years past, personally superintended my own estate, part of which I have annually had under the plough. I have tried English, Scotch, and every variety of American ploughs, and presume I shall be excused for saying, that I consider myself a competent judge of their relative value in the hands of farmers. The application of the Centre-draught principle to the plough by Messrs. Prouty & Mears, is unquestionably, the greatest improvement that has been made in the implement since its first invention; Mr. Prouty was a practical farmer and saw the objections to the old fashioned plough; his ingenious mind set about devising means, whereby the power of draught might be greatly lessened; the liability to wear in certain parts more than others, obviated; the labour of managing it greatly diminished, and at the same time doing the work infinitely better; and well has he done it. And when his improvement shall be generally adopted by farmers, and its merits justly appreciated, Mr. Prouty will be ranked amongst the greatest benefactors of the age."

I would observe, the castings of the Prouty & Mears' ploughs, as well as the workmanship in their construction, cannot be excelled;

while their "fixins" are far superior to *all others*, for regulating with facility and precision the going of their ploughs, which, in the hands of lads of eleven and twelve years of age, are taking premiums throughout the country. By means of the peculiar arrangement of the Rod and Arc—*the sole invention of Messrs. Prouty & Mears*—they are changed from single to double, or three horses abreast ploughs, in a moment of time and with unerring correctness, by the turn of a single screw. A patent was obtained by them in 1840 for their reversing and self-sharpening point and share, which would seem to leave nothing further to be desired. By means of a single set of these, value sixty-two cents, one hundred acres of land have often been turned; the saving in blacksmith's bills soon equalling the first cost of the plough.

It is matter of history, that at the great trial of ploughs at Worcester in the year 1840, at which were present the ploughs of Ruggles, Nourse & Mason, of Worcester; Howard, of Hingham; Whiting, of Rochester; Barnaby & Moer, of Ithaca; and Prouty & Mears, of Boston; the premium of $100 was awarded to the Centre-draught plough of Prouty & Mears, as "the best plough as well as the cheapest; requiring the least draught, and doing the work in the best manner;" the committee observing, that "the Prouty & Mears' plough was the only one present, that worked on the principle of Centre-draught."

In conclusion, and in corroboration of the above, allow me to present the following testimony to the superiority of the Centre-draught plough of Prouty & Mears, from the pen of the present editor of the "Boston Ploughman." Such testimony from such a source speaks volumes, and ought highly to be appreciated.

"This Firm, Nos. 19 North Market, and Clinton streets, Boston, have constantly been improving upon their ploughs, and we think, have brought them to perfection." "The labour of this plough, compared with many others, is like the labour of rolling over an even log, compared with that of rolling over a square stick of timber." "The draught is what is called Centre-draught, and both sides of the plough are carried along together, and with perfect ease." "We are much gratified with the sight of so perfect a plough; it will be a treasure to all who think it important to plough well—by far the most important operation in farming."

P.

Kentucky raises more tobacco than any other State.

Practical Use of Leaves.

There are two facts in the functions of the leaf, which are worth consideration on account of their practical bearings. The food of plants is, for the most part, taken in solution, through its roots. Various minerals—silex, lime, alumen, magnesia, potassa—are passed into the tree in a dissolved state. The sap passes to the leaf, the superfluous water is given off, *but not the substances which it held in solution.* These, in part, are distributed through the plant, and in part, remain as a *deposit in the cells of the leaf.* Gradually the leaf chokes up, its functions are impeded, and finally entirely stopped. When the leaf drops it contains a large per cent. of mineral matter. An autumnal or old leaf yields, upon analysis, a very much larger proportion of earthy matter than a vernal leaf, which, being yet young, has not received within its cells any considerable deposit. It will be found also, that the leaves contain a very much higher per cent. of mineral matter, than *the wood of the trunk.* The dried leaves of the elm contain more than eleven per cent. of ashes, —earthy matter,—while the wood contains less than two per cent.; those of the willow, more than eight per cent., while the wood has only 0.45; those of the beech 6.69; the wood only 0.36; those of the (European) oak 4.05, the wood only 0.21; those of the pitch-pine 3.15, the wood only 0.25 per cent.

It is very plain from these facts, that, in forests, the mineral ingredients of the soil perform a sort of *circulation;* entering the root, they are deposited in the leaf; then, with it, fall to the earth, and by its decay, they are restored to the soil, again to travel their circuit. Forest soils, therefore, instead of being impoverished by the growth of trees, receive back annually the greatest proportion of those mineral elements necessary to the tree, and besides, much organized matter received into the plant from the atmosphere; soils therefore are gaining instead of losing. If owners of parks or groves, for neatness sake, or to obtain leaves for other purposes, gather the annual harvest of leaves, they will, in time, take away great quantities of mineral matter, by which the soil, ultimately, will be impoverished, unless it is restored by manures.

Leaf manure has always been held in high esteem by gardeners. But many regard it as a purely *vegetable substance;* whereas, it is the best mineral manure that can be applied to the soil. What are called vegetable loams,—not peat soils, made up principally, of decomposed *roots*,—contain large quantities of earthy matter, being

mineral vegetable, rather than vegetable soils.

Every gardener should know, that the best manure for any plant is the decomposed leaves and substance of its own species. This fact will suggest the proper course with reference to the leaves, tops, vines, haulm, and other vegetable refuse of the garden.

The other fact connected with the leaf, is its function of *exhalation*. The greatest proportion of crude or sap which ascends the trunk, upon reaching the leaf, is given forth again to the atmosphere, by means of a particularly beautiful economy. The *quantity* of moisture produced by a plant is hardly dreamed of by those who have not specially informed themselves. The experiments of Hales have been often quoted. A sun-flower, three and a half feet high, presenting a surface of 5.616 square inches exposed to the sun, was found to perspire at the rate of twenty to thirty ounces avoirdupois, every twelve hours, or seventeen times more than a man. A vine with twelve square feet, exhaled at the rate of five or six ounces a day. A seedling apple-tree, with twelve square feet of foliage, lost nine ounces a day.

These are experiments upon very small plants. The vast amount of surface presented by a large tree, must give off immense quantities of moisture. The practical bearings of this fact of vegetable exhalation are not a few. Wet forest lands, by being cleared of timber, become dry; and streams, fed from such sources, become almost extinct as civilization encroaches on wild woods. The excessive dampness of crowded gardens is not singular, and still less is it strange that dwellings covered with vines, whose windows are choked with shrubs, and whose roof is overhung with branches of trees, should be intolerably damp, and when the good housewife is scrubbing, scouring and brushing, and nevertheless, marvelling that her house is so infested with mould, she hardly suspects that her troubles would be more easily removed by the axe or saw, than by all her cloths and brushes. A house should be closely surrounded with shrubs. A free circulation of air should be maintained all about it, and shade trees so disposed as to leave large openings for the light and sun to enter. The usual rains of the current season have produced so great a dampness in our residences that no one can fail to have noticed its effect, both on the health of the occupants, and upon the beauty and good condition of their household substance.—*Western Farmer & Gardener.*

On the Importance of the Cultivation of the Oak and other valuable Timber Trees.

With Observations on the Preservation of Ship Timber, and the Process of Decay in Wood. By A. Mitchell, M. D., Portland. In a letter to the Hon. H. A. S. Dearborn.

My Dear Sir,—The following article was communicated by me to Gen. Joseph M. Hernandez, of St. Augustine, Fl., and published in the Florida Herald. You will probably recollect that this gentleman has been, for many years, exclusively devoted to the science of agriculture, and is one of the best systematic planters in that State. An Essay written by him on the Culture of the Tobacco Plant, has been considered to be one of the most elaborate articles ever published on that subject.

Reasoning from analogy on the soil and productions of the southern portion of our Union, we may attribute to Florida, as having within its domains as many natural advantages as any of the tropical regions in the cultivation of those plants that are indigenous to those countries, presenting an extensive surface, which as yet remains imperfectly explored—rich in the spontaneous growth of many esculent plants for the support of man, and the growth of domestic animals, and offering a wide field for the cultivation and introduction of many more for exportation and home consumption. Such are the tea-plant, coffee, tobacco, sugar cane, Turkish poppy, olive tree, cotton, indigo, saffron, grape, fig, &c. As we shall briefly descant, at present, on the vital importance of a community being well versed in agricultural science, in order to improve with advantage those rich fields which a bounteous Creator has spread out before us, we shall principally advert to the forest growth of this peninsular portion of our United States, with some original observations on the preservation of ship timber, and the process of decay in these woods.

The process of decay termed dry rot, has been a theme of scientific inquiries for many years among many of our most eminent chemists; and the most elaborate investigations have been made, both at home and abroad, in order to ascertain the chemical effects of air, heat, light, and moisture, on the same, as our oaks and various timbers that have been previously prepared and appropriated to use for ship-building. We do not, at present, have the presumption to offer any preservative means that would counteract the effects of this dreaded enemy to our national purse, but simply to throw out some

hints that may, in the future, be useful as a rallying point to others that can claim a precedence over their more humble brothers in the profession of science. The modern use of iron in the construction of marine vessels has been thought, at a subsequent period, would supersede that of wood; we should then have oxides to contend with instead of fungi; but we do not believe the former will ever supersede that of the latter. As the grand engine of navigation is deteriorating every day from the causes of decay, it may be asked, what is the dry rot? and how long has it been known to affect the timbers of vessels, and the cause of this effect? Well, in answer to the former, the dry rot is caused by the spontaneous decomposition of the vegetable albumen which acts as a ferment on the other constituent principles that may be present in the wood, as sugar and starch, which disintegrates the fibres of the wood, and accelerates the growth of mushrooms by the formation of ammoniacal salts. Of these fungi, there are two species,—as the Xylostroma giganteum, which grows in the timber like a thin broad patch of yellow leather, and the Serpula distruens, which is not so large, of a reddish colour, and white at the edge growing externally. As the cause of this dry rot proceeds from an excess of vegetable albumen in those woods that have been in modern use for ship-building, we may answer the latter question by saying that the primitive oaks of Great Britain, and those of our country, which were used in the early construction of their navies, were not so rich in albuminous matter as the oaks of secondary growths, and those of various locations, are now; therefore the dry rot and fungous growths in such timbers were not known, nor never would have been, had we the timber now of those primitive forests of our country, Europe, and Great Britain. It will appear, by these observations, that we intend to maintain that the cause of dry rot proceeds from the negligence and want of knowledge in the selection of those trees which resist the effects of time and exposure without the process of decay. Such is our position, and without further comment, we proceed to illustrate many points connected with the subject under consideration, as it is one of the most important to which the attention of a maritime people can be turned.

The oaks of North America, as described by Andrew Michaux, consist of twenty-nine species and varieties, most of which are useful in ship-building; the one considered the most useful, and stands at the head of the list, is the live oak, *Quércus vírens*. It is a perennial tree, of slow growth, like the rest of its congeners, and is common to Florida, where the most extensive forests of this tree are seen. It is generally found growing from latitude 37° to Florida, "and westward to the mouth of the Sabine River," but never more than fifteen or twenty miles from the sea. This valuable tree can be said to contain less of the causes of decomposition, as albumen, sugar, and starch, than any of the species hitherto described; therefore, it is the most durable, and less liable to decay; and with all this natural immunity against spontaneous decomposition, we should not overlook the locality of its growth, age, and season of cutting for ship timber. This is a necessary precaution, which is applicable to the whole tribe of oaks that are used in the mechanics. The best localities for the selection of durable timber from those trees, are elevated regions, high table lands, and an open country, where they are not overshadowed by other growths. They should stand where there is ample room for their branches, with a free access of air, heat, and light on all sides, as often seen on the boundary of some plantation, or as ornaments which venerate the mansion of the planter, or such like places. The woody fibres of such trees are more dense; they contain more carbon or astringent qualities, with less vegetable albumen: whereas, to the contrary of this, should such timber be cut in low wet grounds, ravines and shady places where they grow compact, it would be liable to decay from the causes mentioned, as there would be an excess of those constituent principles, and a softer structure that would hasten the decay, and cause the dry rot, so deleterious to our navies. The age of the oaks is next to be considered. They generally attain their maximum height and full development at the age of fifty or sixty years, and after that period, they progress but slowly, until they arrive at a very advanced age, as two or three hundred years or more. Those of the live oak that can be best recommended for durable timber, are such as have arrived at the period of a hundred years or more, if the constitutions of the trees are sound, and no visible decay is present. The gigantic growth of this tree at the age last mentioned far surpasses any of its species. The measurement of one of its limbs by myself in a horizontal line exceeded sixty-five feet, while the diameter at the junction exceeded the size of the bodies of many red and black oak species of a full size, or secondary growths that have survived seventy winters. We repeat that the maturity of the species of oaks must be considered before used or appropriated for ship-building; for it is at this period the strength

and durability of the wood are fully developed, and the longitudinal fibres tough and resisting. As the albuminous matter of which we have spoken is a nitrogenized compound, it is of a putrescible nature, and therefore forms food for insects, which penetrate the wood in various directions, admitting air and water to the interior of the timber. It is evident that this chemical action, or fermentative process, must be greatly favoured by external causes, or the location in which the wood is placed. The close apposition and dense mass of timbers that are seen in the hull of a battle-ship of the line on the stocks is considered as favourable to this action, although there are no doubts but what the germs of the disease are lurking in the timbers previous to their use, occasioned by the want of care and suitable selection of appropriate trees, and preservation of the timber after cutting. The local sites of navy yards, where there must be a proper depth of water, unavoidably place the timber in a topographical situation that is unfavourable to the preservation of the wood, as heat and moisture accelerate the chemical action, and promote the fungous growths, whose nutrition depends on the chemical changes heretofore mentioned.

Could we always find a suitable hydrographical station for a navy yard, where, combined with its facilities, there was a dryness and purity of atmosphere, many of the causes that decompose the materials for ship building would be prevented; but as such localities cannot always be found in the surveys for such stations, we must patiently submit to the injurious effects of heat and damp atmosphere, however well guarded the ships may be in their sheltered positions by ventilation and suitable protection; although it is of the highest importance that the geographical situations of such places should be well understood and taken into consideration, as rivers, marshes, bogs, mean standard of the thermometer, barometer, and hygrometer, and mean quantity of rain.

The proper season for cutting such timber will next be considered. The months of July and August, when the trees are in foliage, and the juices circulating freely, is decidedly the best period for cutting; as then the greater portion of the albumen is contained in the cambium or descending sap, while most of the nitrogen is set free by exhalation, and is principally combined with the fluids that circulate exteriorly. The trees, after they are fallen, should be immediately rough hewn, and deprived of their sap-wood and bark, placing the timber in the most favourable situation for seasoning and desiccation by elevating it from the earth. The ordinary process of seasoning wood consists in merely exposing it to a current of air. It would be a desirable thing if we could find a location where a dry air could be naturally maintained throughout the year; but this desideratum could not be easily obtained. The time necessary to season the oaks differs according to the density of the structure—and various dimensions of those woods that are exposed for desiccation; a plank probably would not require twelve months, while a piece of larger dimensions could not be thoroughly seasoned in six or seven years; and if placed in a humid situation, would not season at all, and the result would be a decomposition from the formation of ammoniacal salts and mushroom growths.

To benefit property, and perpetuate the materials for ship-building, we propose that the legislatures of our States appropriate means for the cultivation of those oaks that are indigenous to their regions. In order to ensure success in such an undertaking, a tract of land should be set apart of some thousand acres in a favourable location for their growth. The soil for this purpose should not be too rich nor stimulating: the trees can be propagated from the acorn, or transplanted from their native forests. If the latter plan is adopted, the trees selected for this purpose should be from four to five years of age, of a healthy appearance, and perfect symmetry. We recommend their being taken up in the latter part of October or the month of November, with a careful preservation of their roots, and immediately transferred to the soil that is allotted for their permanent abode. This period for transplanting those trees is decidedly the best, as then the descension of the sap is completed, and the action of the leaves quiescent, while that of the absorbing rootlets ceases also, because the nutrition which is taken in by them is not convertible into woody substance without the coöperation of the leaves. They should be set apart, at proper distances, in such a manner as to have ample room for growth, and the free action of heat and light on all sides. Such parks or nurseries in our States would be more commemorative of the genius of a nation than all the marble monuments and towering edifices that can be erected. This scheme is not only thought worthy of a government's consideration, but is applicable to every individual farmer and landed proprietor in this country. They should be transplanted on the outskirts of every farm or plantation; marking the boundary of their different possessions, by the growth of those sylvan giants that have been the pride of

nations for centuries.—*Magazine of Horticulture.*

Cure for Foundered Horses.—As soon as you find your horse is foundered, bleed him in the neck in proportion to the greatness of the founder. In extreme cases you may bleed him so long as he can stand up. Then draw his head up, as is common in drenching, and with a spoon, put back on his tongue, strong salt until you get him to swallow one pint. Be careful not to let him drink too much. Then anoint round the edges of his hoofs with spirits of turpentine, and your horse will be well in one hour.

A founder pervades every part of the system of a horse. The fleam arrests it from the blood, the salt arrests it from the stomach and bowels, and the spirits of turpentine arrests it from the feet and limbs.

I once rode a hired horse ninety-nine miles in two days, returning him at night the second day; and his owner would not have known that he had been foundered if I had not told him, and his founder was one of the deepest kind.

I once in a travel of seven hundred miles foundered my horse three times, and I do not think my journey was retarded more than one day by the misfortune, having in all cases observed and practiced the above prescription. I have known a foundered horse turned out at night on green feed; in the morning he would be well, having been purged by the green feed. All founders must be attended to immediately.—*S. W. Farmer.*

For the Farmers' Cabinet.

The Soy Bean

Is a native of Japan and of the Molucca islands. It thrives well in New England, having been successfully raised in the Botanic Garden, at Cambridge, and elsewhere in Massachusetts.

It is the *Dolichos Soja*, of Linnæus, or *Soja hispida*, of Moench. It is an annual plant, growing about two feet high, with an erect stem, which, at the top, shows some tendency to twine, and therefore needs the support of a few sticks or brush. The leaves resemble those of the common bush bean, and are borne on long channelled petioles. The flowers are very small, of a reddish colour, and grow in clusters on short peduncles, arising from the axils of the leaves. The pods, when ripe, are rather more than one inch long, compressed, brownish, and rough with stiff hairs. They contain generally two, and sometimes three small roundish and compressed beans, of a dark brown colour.

This plant is very productive. Eight of the beans, planted in Milton, Mass., in 1831, yielded a wine pint of seed, weighing eleven and a half ounces. One hundred and ten of the beans, taken promiscuously, weighed half an ounce. In this proportion, the produce of the eight beans would be 2530, or more than 316 for one. In 1829, a single bean, in the Botanic Garden in Cambridge, produced 182 pods, which, as some of them contained three beans, was more than 364 for one. Should their qualities as articles of food be found agreeable, these beans will become valuable on account of their great productiveness.

The inhabitants of Japan, of China, and Cochin China, and of some parts of India, cultivate these beans extensively, and eat them cooked or prepared in various ways. They make a very important article in the cookery of the Japanese, who use them chiefly in two forms. The first, called *Miso*, is a rich paste, of the consistence of butter, the place of which it supplies in various dishes, and is composed of a mixture of the beans and rice stewed and highly seasoned with salt. The second, called *Sooju* by the Japanese, is the celebrated sauce, known in commerce by the name of *Soy*, and imported in large quantities from the East, the best being brought from Japan. The Japanese method of making *Soy* was described by Kaempfer, in the "*Amoenitates Exoticae*," published in Latin, in 1712. It is as follows: Take of the beans, stewed till they are soft, of coarsely ground wheat or barley, and of salt, equal quantities by measure. Mix the beans and flour together, and put them in a covered vessel, in a warm place, to ferment. Let them stand twenty-four hours; then add the salt, and pour over the mixture two measures and a half of water. This mixture is to be kept covered two or three months, during which period it is to be stirred two or three times a day with a spatula. At the end of this time the mixture is to be strained or filtered, and the expressed liquor is to be put into wooden vessels, and kept some time before used; for it improves in clearness and quality by age. More water is added to the mass which remains, and this, after some days, is also expressed and strained.

Kaempfer says that the Japanese use this sauce to season every dish of fried or roasted food. For fish, beef, and mutton, it forms a very savoury as well as a harmless condiment, the flavour of which is much admired by those who have become accustomed to it; and by many it is preferred to the best Chinese catsup.

The making of *Soy*, as here described, seems to be a very simple process, and the experiment is worth trying. Should it prove successful, the cultivation of the plant in this country, may become profitable. The beans are said to be good when cooked like common kidney beans; but it is doubtful whether they would ever take the place of our best varieties of them.

T. W. H.

Cambridge, Mass., Sept. 18th, 1847.

Prepared Guano.

WHATEVER will enable us to grow *two* blades of grass, or *two* ears of corn, where but *one* could be made to grow before, and that too *without impoverishing the soil*, is highly deserving of notice, and greatly worth knowing. Agriculture is more important to the comfort, well being and happiness of the human race, than all other occupations, and yet it is a science which has, most unaccountably, been more neglected than all other sciences whatever, until of late years. All that we possess in the shape of food, clothing, residences, and luxury in almost every particular, comes directly or indirectly from the soil, and yet we have studied its nature and capabilities less than any other object we are interested in. Had this science been properly attended to, nothing in the shape of *famine*, sweeping myriads into premature graves, would ever have been heard of; but we have foolishly gone on, from generation to generation, exhausting our mother earth, without reflection that, unless we keep up *her* strength, she must shortly become *weak and languid*, and incapable of furnishing the sustenance, we never fail to demand. This folly has at length awakened us to the dictates of *common sense*, and we now see that even Europe is sending its numerous vessels to Africa, Chili, Peru, and almost everywhere in search of *proper sustenanee for its soil.* In those countries it has been accumulating for thousands of years, and yet human intelligence has been so bounded, on this very important matter, that those mountains of fertility have been suffered to remain *useless and unnoticed.* Those mounds of abundance, however, are not in a condition to be used in their crude state, as *manure.* The crystallized ammonia forms in bunches, and is therefore much too strong, in this condition, for *any* kind of vegetation, and indeed if it be so employed, it soon *evaporates* and leaves the remains of the guano *weak and worthless*, as an amendment. Here the aid of chemistry is appropriately introduced, not only to retain and preserve the ammonia in the soil, but to moderate its excessively fertilizing effects. The *principles* of guano itself are limited, being chiefly carbonate and phosphate of lime and ammonia; but when it is finely pulverized and chemically combined with *proper* absorbents and other fertilizing substances, as we are aware is the case in the "*Prepared Guano*," now offered for sale, then as a manure or amendment, it becomes equally fertilizing to every description of vegetation, without weakening the soil. In the preparation every principle that vegetation requires, it seems, is added to it, and therefore it supplies every plant with that specific nutriment which it individually needs; whilst the absorbents again re-absorb from the atmosphere what they thus give out, and by this means the "*Prepared Guano*," as a manure, remains almost inexhaustible. For these reasons, and from the recommendations of those who have used it, we recommend it to the particular attention of all of our readers, in any way connected with Agriculture, Horticulture, or Floriculture.—*American Citizen.*

Influence of Horticulture.

THE multiplication of Horticultural Societies is taking place so rapidly of late, in various parts of the country, as to lead one to reflect somewhat on their influence, and that of the art they foster, upon the character of our people.

Most persons, no doubt, look upon them as performing a work of some usefulness and elegance, by promoting the culture of fruits and flowers, and introducing to all parts of the country the finer species of the vegetable productions. In other words, they are thought to add very considerably to the amount of physical gratification which every American citizen endeavours, and has a right to endeavour, to assemble around him.

Granting all the foregoing, we are inclined to claim also, for horticultural pursuits, a political and moral influence vastly more significant and important than the mere gratification of the senses. We think, then, in in a few words, that horticulture and its kindred arts, tend strongly to fix the habits and elevate the character of our whole rural population. One does not need to be much of a philosopher to remark that one of the most striking of our national traits, is the *spirit of unrest.* It is the grand energetic element which leads us to clear vast forests, and settle new States, with a rapidity unparalleled in the world's history; the spirit, possessed with which, our yet comparatively scanty people do not find elbow-room enough in a territory already in their possession, and

vast enough to hold the greatest of ancient empires; which drives the emigrant's wagon across vast sandy deserts to California, and over rocky mountains to Oregon and the Pacific; which builds up a great State like Ohio in thirty years, so populous, civilized and productive, that a bare recital of its growth sounds like a genuine miracle to European ears; and which overruns and takes possession of a whole empire like that of Mexico, while the cabinets of old monarchies are debating whether or not it is necessary to interfere and restore the balance of power in the new world as in the old.

This is the grand and exciting side of the picture. Turn it in another light, and study it, and the effect is by no means so agreeable to the reflective mind. The *spirit of unrest*, followed into the bosom of society, makes of man a feverish being, in whose Tantalus' cup *repose* is the unattainable drop. Unable to take root anywhere, he leads, socially and physically, the uncertain life of a tree transplanted from place to place, and shifted to a different soil every season.

It has been shrewdly said, that what qualities we do not possess are always in our mouths. Our countrymen, it seems to us, are fonder of no one Anglo-Saxon word than the term *settle*. It was the great object of our forefathers to find a proper spot to settle. Every year large numbers of our population from the older States, go west to settle; while those already west *pull up*, with a kind of desperate joy, their yet new-set *stakes*, and go farther west to settle again. So truly national is the word, that all the business of the country, from State debts to the products of a "truck farm," are not satisfactorily adjusted till they are "settled;" and no sooner is a passenger fairly on board one of our river steamers, than he is politely and emphatically invited by a sable representative of its executive power to "call at the captain's office and *settle!*"

Yet, as a people, we are never settled. It is one of the first points that strikes a citizen of the old world, where something of the dignity of repose, as well as the value of action, enters into their ideal of life. De Toqueville says, in speaking of our national trait:

"At first sight, there is something surprising in this strange unrest of so many happy men, restless in the midst of abundance. The spectacle itself is, however, as old as the world. The novelty is to see *a whole people* furnish an exemplification of it.

"In the United States a man builds a house to spend his latter years in, and sells it before the roof is on; he brings a field into tillage, and leaves other men to gather the crops; he embraces a profession and gives it up; he settles in a place which he soon after leaves, in order to carry his changeable longings elsewhere. If his private affairs leave him any leisure, he instantly plunges into the vortex of politics; and if at the end of a year of unremitting labour, he finds he has a few days' vacation, his eager curiosity whirls him over the vast extent of the United States, and he will travel fifteen hundred miles in a few days to shake off his happiness."

Much as we admire the energy of our people, we value no less the love of order, the obedience to law, the security and repose of society, the love of home, and the partiality to localities endeared by birth or association, of which it is in some degree the antagonist. And we are therefore deeply convinced, that whatever tends, without checking due energy of character, but to develope along with it certain virtues that will keep it within due bounds, may be looked upon as a boon to the nation.

Now the difference between the son of Ishmael, who lives in tents, and that man who has the strongest attachment to the home of his fathers, is, in the beginning, one mainly of outward circumstances. He whose sole property is a tent and a camel, whose ties to one spot are no stronger than the cords which confine his habitation to the sandy floor of the desert, who can break up his encampment at an hour's notice, and choose a new and equally agreeable site, fifty miles distant, the next day—such a person is very little likely to become much more strongly attached to any one spot of earth than another.

The condition of a western emigrant is not greatly dissimilar. That long covered wagon, which is the Noah's ark of his preservation, is also the concrete essence of house and home to him. He emigrates, he "squats," he "locates," but before he can be fairly said to have a fixed home, the spirit of unrest besets him; he sells his "diggins," to some less adventurous pioneer, and *tackling* the wagon of the wilderness, migrates once more.

It must not be supposed, large as is the infusion of restlessness into our people, that there are not also large exceptions to the general rule. Else there would never be growing villages and prosperous towns. Nay, it cannot be overlooked by a careful observer, that the tendency to "settle" is slowly but gradually on the increase, and that there is, in all the older portions of the country, growing evidence that the Anglo-Saxon love of home is gradually developing itself out of the Anglo-American love of change.

It is not difficult to see how strongly horticulture contributes to the development of local attachments. In it lies the most powerful *philtre* that civilized man has yet found to charm him to one spot of earth. It transforms what is only a tame meadow and a bleak aspect, into an Eden of interest and delights. It makes all the difference between "Araby the blest," and a pine barren. It gives a bit of soil, too insignificant to find a place in the geography of the earth's surface, such an importance in the eyes of its possessor, that he finds it more attractive than countless acres of unknown and unexplored "territory." In other words, it contains the mind and soul of the man, materialized in many of the fairest and richest forms of nature, so that he looks upon it as tearing himself up, root and branch, to ask him to move a mile to the right or the left. Do we need to say more, to prove that it is the panacea that really "settles" mankind?

It is not, therefore, without much pleasurable emotion, that we have had notice lately of the formation of five new horticultural societies, the last at St. Louis, and most of them west of the Alleghanies. Whoever lives to see the end of the next cycle of our race, will see the great valleys of the west the garden of the world, and we watch with interest the first development, in the midst of the busy fermentation of its active masses, of that beautiful and quiet spirit, of the joint culture of the earth and the heart, that is destined to give a tone to the future character of its untold millions.

The increased love of home and the garden, in the older States, is a matter of every day remark; and it is not a little curious, that just in proportion to the intelligence and *settled* character of its population, is the amount of interest manifested in horticulture. Thus, the three most settled of the original States, we suppose to be Massachusetts, New York and Pennsylvania; and in these States horticulture is more eagerly pursued than in any others. The first named State has now seven horticultural societies; the second, five; the third, three. Following out the comparison in the cities, we should say that Boston has the most settled population, Philadelphia the next, and New York the least so of any city in the Union; and it is well known that the horticultural society of Boston is at this moment the most energetic one in the country, and that it is stimulated by the interest excited by societies in all its neighbouring towns. The Philadelphia society is exceedingly prosperous; while in New York we regret to say, that the numerous efforts that have been made to establish a society of this kind have not, up to this time, resulted in any success whatever. Its mighty tide of people is as yet too much possessed with the spirit of business and of unrest.—*Downing's Horticulturist.*

For the Farmers' Cabinet.

Farm of Mr. Bell.

STATEMENTS like the following, are to me exceedingly interesting, and if our farmers would much more frequently give them, the cause of agriculture would not only be benefitted, but much additional interest would be thrown around it. What statements, for instance, that have appeared in the Cabinet, have been read with more interest than those occasionally given by James Gowen?

L.

"The farm occupied by Mr. Thomas Bell, is situated in Morrisania, near New York, and comprises about 400 acres, being a part of the domain of William H. Morris, Esq. The present season 100 acres have been cropped with hay, 40 acres with Indian corn, 18 acres with wheat, 12 acres with oats, 6 acres with rye, 5 acres with turnips, 3 acres with potatoes, and 10 acres with corn, sown broadcast, or in drills, for soiling; the remainder lying in pasture or fallow. There are also on the place 25 acres of orchard, principally Newtown pippin trees, from which were sold last year 400 barrels of apples and 200 barrels of cider.

The stock of the farm consists of 75 cows, 52 of which give milk, two Durham bulls, 25 heifers, 6 working oxen, 6 horses for labour, 12 sheep of Bakewell or Leicester grade, and 50 or 60 hogs and pigs.

On the 16th of July last, the field crops all looked well, which was doubtless owing, in a great measure, to superior management. The wheat was in the act of harvesting, and bid fair to yield 25 or 30 bushels to the acre. It was grown on land that had remained in fallow for many years; that is, a scanty pasture, interspersed with alders, dwarf cedars, wild grasses, &c. The ground was ploughed twice in the summer of 1846, and previous to sowing, 25 loads of compost, made of swale or pond mud, mixed and fermented in the heap with barnyard manure, were applied to each acre. The field in which this wheat was grown, at present is in excellent condition for laying down to grass, or for the cultivation of almost any kind of crop.

The fields of Indian corn. in general, looked vigorous, dark-coloured, and were just in tassel, although the land varied in character, and had been differently tilled. We were particularly struck with the vigor

of one field of eight acres, to which had been applied broadcast, 400 loads, of fifty bushels each, of swale muck, mixed with five hundred bushels of oyster-shell lime. Another field of six acres, which previously had been cropped with grain, was manured with coal ashes, a pint to a hill, and looked well.

Mr. Bell practises the system of soiling in part, particularly with his milch-cows, and highly approves of the plan. He sells, upon an average, in this city, 500 quarts of milk per day, which amounts to more than $7000 a year. From the milk of one cow alone, he realized $530 in two years, notwithstanding she had a calf within the time, but was never dry.

Mr. Bell's bull is a thorough bred Short-horn, imported from the celebrated herd of the late Earl Spencer. He is a superb animal, and has taken several prizes, as the first in his class, at the exhibitions of the New York State Agricultural Society and the American Institute.

Several of his cows are also thorough-bred Short-horns; but most of his herd consists of high grades, a cross of his bull, Marius, with some of our best native stock. Of this cross, we observed fifteen beautiful yearling heifers, of great promise, which were so docile that they could be approached and handled by any one who chose. This gentleness Mr. Bell attributes to the early attachment they acquired by bringing them up by hand when calves. The first three weeks following their birth they were allowed to suckle the cow, after which they were fed a few weeks on skim-milk, and then turned out to grass. This kind of treatment, no doubt, has a tendency to soften their dispositions, and greatly contributes to their gentleness when they come to be cows.

While looking at the herd, it was remarked by Mr. Bell, that every cow, without exception, which had broad *escutcheons*, or *quirls*, formed by the meeting of the hair that points in different directions on the posterior parts of the animal, *wide apart*, were good milkers; but this proves nothing further than it goes, as his premium cow, Shaker, the best in the herd, has but a trifling development of this point, being the one from which he realized $530 in two years by the sale of her milk.

Mr. Bell is evidently a thorough-bred farmer, which is manifest from the characteristic neatness and excellent management of every part of his farm. He superintends in person, and puts on record most of the operations of the dairy, the farm-yard, and of the field, and is up and doing from early dawn to late at night. He keeps an account of his receipts and expenditures, which, at the end of the year, it is highly desirable he should make known to the public."

The Potatoe Rot in Ohio.

There is reason to fear that a large proportion of the present potatoe crop in this State will be destroyed by that mysterious malady the *rot*. In our recent trip we passed through portions of nine different counties, extending northward from this place to the Lake, and in every one of these we saw evidences of the disease—though in some cases it was only just beginning to manifest itself, and was not yet known to exist by the owners.

We also learn by letters and our exchanges that eastward in Coshocton county, and westward in Montgomery, and in Hamilton, the rot has made its appearance and is rapidly destroying the crop in some places, exciting much inquiry and apprehension among the farmers and others. Even our own "little farm" has not escaped, and where we expected to have several hundred bushels for market, it is doubtful whether we shall save enough healthy tubers for our own *family use*.

The first indications of the disease, is the leaves turning black—not all at once, as by frost, but gradually and in spots, leaving some leaves on the top of the stems, or a whole stem or hill looking healthy for a time, but not long. The tubers in the mean time cease growing, become watery and discoloured, and soon begin to decay, especially when dug.

Mowing off the tops, as soon as the disease begins to appear, is recommended by some, as the best means of preserving the crop. This remedy is founded on the belief that the disease *commences in the tops*. But this has not yet been proven, nor have we seen accounts of sufficient experiments to induce us to put much faith in the remedy; though we shall give it a trial, and we advise others to do the same.

One of our correspondents suggests, in addition to cutting off the tops, putting a small quantity of ashes on each hill.

With all the expenditure of labour, money, and scientific research that has been devoted to this subject in Europe for the past three years, absolutely *nothing* has as yet been made known in relation to the cause or prevention of this "potatoe rot." Still we should not thereby be deterred from observing and making known all the facts that can be ascertained on the subject; and we therefore request such of our readers as try experiments, or make any supposed discoveries

in relation to it, to send us minute accounts of the same; and such as appear at all new or important, will be given to the public.—*Ohio Cultivator.*

French Farming.

The general surface of France has by no means that richness of rural aspect which every traveller remarks in England. This is owing, in some measure, to the more monotonous surface of the country; for while England is broken up into vast variety, by plain, valley, wood, height, glen, and gently undulating land, France, for the most part, presents a succession of vast waving plains, here and there channelled by slow running rivers, or traversed by lines of mountains. It is modelled upon a more gigantic scale than England. Its rivers are longer; its distances are more vast; and its hills, though perhaps not higher than British hills, are more sweeping in their forms, and less striking in outlines. Exception, however, is to be made in favour of a large portion of Brittany, the valley of the Seine, in its progress through Normandy, the country of the Auvergne, and that part of Burgundy adjoining the Juras.

Not only, however, is it in variety of surface, that England surpasses France, but in those country adornments, which make up the pleasing rural aspect of the British isles. The French farm house, though substantially built of stone, and stuccoed, and convenient in its interior arrangements, has nowhere the prettily thatched roof, the embowering vines, the rich shade trees, the encircling bit of turf, the scattered flowers, the latticed windows, which belong to the English cottage. Add to this the unattractiveness of its situation, upon the middle of some broad plain—instead of quiet nook or valley, or pleasant knoll—so common to English landscape, and one may readily imagine the superior beauty of the island farmery.

Again, the French cottage, in most situations, has few or no hedges. Its offices are all thrown together within one common enclosure of high stone walls. From the road, you enter by a large gateway into a slattern court, about which carts are dropped here and there, and poultry scratching in the accumulated dirt, and swine, perhaps, rooting about the stagnant pool in the middle. On one side of this court will be the doors and windows of the farm-house—its walls white, where not befouled with dirt—its roof of heavy red tiles, and its chimney stiff and clumsy. There is no vine beside the door—not even a rose tree, or violet, or morning glory; but there is a studied neglect of these little charms which would not do discredit to many New England farmers. The sun shines hotly upon the white walls, and upon the red roofs of the offices by its side.

Sheds of timber, and roofed with tiles, stretch around upon another side of the court, for the animals and best constructed implements. A barn and granary of the same sort of construction lie upon the third side of the court, and the entrance gate, with its high flanking wall, make up the fourth.

In the more pretending establishments, the farm-house stands removed from the common court of the farmery, and connects with it by a little wing thrown back upon the offices.

The garden adjoins the enclosure, with its skirt of fruit trees, stragglingly disposed, except in the orchard provinces, where their disposition is neat and beautiful.

Fences, in the plain country—the country most seen by the casual traveller—are very rare; neither hedge, or ditch, or wall, and the junction of farms or estates is designated by rows of trees, or mere ridges of turf. In the vine-growing countries, particularly such as furnish the best wines, as Medoc and Burgundy, division of property is marked simply by lines of vines, and size of vineyards is reckoned only by the number of lines.

The great roads are broad and macadamized, with frequently a strip of grass land upon either side, which is depastured by cows tethered to stakes, or by sheep under guardianship of dogs. Rows of trees border the way, and beyond are yellow, broad-waving fields of grain, barley and wheat; or perhaps the land is covered with a light grass, on which immense flocks of sheep are feeding. The first may be seen on the route to the east, leading through Auxerre; the sheep abound toward Chateauroux.

Again, upon the best of the grass meadows, eastward toward Dijon and Dole, you may see great herds of cattle, or in the valley of Limousin you will see scores of horses.

Turning away from the great routes, one finds little bye-lanes, which, with their trees and occasional hedge rows, will remind of England. The farm-houses, too, upon the cross country roads, while they are more unpretending in aspect, have more of that rural simplicity which makes much of the charm of an English cottage.

The canals, stretching over the plains, are not unfrequently gracefully shaded with willows, or lindens, and the sight of their shining surface, glimmering through a copse, the high-collared, heavy Norman horse, toiling along the tow-path—the quaintly clad la-

bourers, singing at their work in the fields,—with the cone-topped towers of some old chateau lifting behind the wood, make up a fresh bit of French picturing in my mind.

Gentlemen's seats, with lawn, and gate lodge, and park enclosure, and troops of deer, come rarely under the eye in France. The French character is not prone to ruralities. Even the amusements of the peasantry partake of a civilian character; dancing, and music, and gallantries of speech, relieve the tedium of field labour, in place of cricket, or bathing, or fishing. Nor is it easy to find a French peasant who does not wear a courteous air. Even the old woman of the little auberge, where you stop to lunch, receives you with a ready *politesse*, that in the country districts of New York would pass for city breeding.—*Cultivator.*

Farming in Western New York.

Mr. John Johnston's farm partly adjoins Mr. Delafield's. Considering the disadvantages under which Mr. J. commenced operations here, his success has been quite remarkable. He came from Scotland twenty-six years ago, and first purchased 120 acres of the farm on which he now lives. The land was so worn down by bad management that he was laughed at for buying it, and even the man of whom he bought, frankly told him it would "bear nothing." Not in the least discouraged, however, Mr. J. began, *fully determined*, as he says, that he would make himself *independent*. His first crops, as was expected, were light; but they gradually increased, till by the fourth year they were so heavy as to attract the particular attention of his neighbours, who had prophesied so unfavourably. In the course of a few years, he began to realize the fruits of his labours, and seeing the prospect opening brightly, he sent to Scotland for his family. His farming continued to be more and more profitable. Having paid for the first lot of land, he bought more, and continued to make additional purchases till he has now 306 acres in his home farm, and a farm of 200 acres in Yates county,—all paid for and in a good state of improvement. Mr. J. therefore, now finds himself in the comfortable state of "independence," for which he started twenty-six years ago, with such a firm determination of reaching. It is an important fact, too, as well as agreeable reflection, that he has reached this position unaided by speculation, having had no resource of consequence but his hands and his farm.

Mr. Johnston's principal products have been wheat and wool. His soil is naturally good, but has been greatly improved by sheep, which, with the adjuncts of deep and thorough tillage, have been the chief instruments in producing larger crops of wheat, on the average, than have been obtained from any other farm within our knowledge. He usually has from fifty to eighty acres of wheat in a season. His last three crops,—for 1844, '45, and '46,—averaged thirty and a third bushels per acre. The crop of the present year appeared well, for the most part, though like crops in general, it was somewhat injured by the winter on that portion of the farm which has not been drained.

The soil of this location, belongs, geologically, to the Hamilton shales. Its composition appears to be of the best character for the production of wheat. Its excellence is not, like most soils, confined chiefly to the surface, but the earth to the depth of several feet, or in some instances, to the underlaying rocks, is equally fertile, after due exposure to the air. In several instances, we noticed on Mr. Johnston's and Mr. Delafield's farms, that where ditches and drains had been dug, and the earth which had been taken out was spread over the surface, the wheat, barley, and oats were heavier than in other parts of the field. In a field of barley, a ditch had been dug and the earth left unspread on its banks. The crop was decidedly more luxuriant on the bank of this ditch than in any other place.

Effects of Lime and Ashes.—Mr. Johnston has frequently tried wood ashes on his land, but could never perceive any effect from them. He has also made frequent use of lime, and with marked advantage. He showed us three ridges or lands in wheat, the two outside ones of which were limed, and the centre was not limed. The superior stoutness of the crop on the limed lands was obvious. Is there any theory which will account for the beneficial action of lime and the failure of ashes in this case? The soil evidently abounds in lime—it rests on limestone, and loose limestones are mixed more or less through its surface. The earth taken at various depths, from a few inches to two and a half feet, effervesces strongly in acids, showing that lime is one of its prominent ingredients; and yet on this very soil burnt lime produces extraordinary effects. This is not a solitary instance of the operation of lime in similar circumstances; we have known several such, and Mr. Colman informs us that in Europe the best action of lime is frequently on limestone soils.

Mr. J. prefers applying his barn-yard manures in the spring, to sward ground, which is either to be planted to corn or used as fallow. The manure is spread and ploughed in. As it is of a coarse nature, and in an

unfermented state, and applied in pretty heavy dressings, it is difficult to dispose of it without covering it with the plough. He has nineteen acres of Indian corn, planted on sod,—with Emery's seed planter,—which we thought as promising in appearance as any we had seen this season. His fallows are worked very thoroughly. He takes special care that no weeds or grass shall grow on them, frequently going over the fields with harrows or cultivators. They are always ploughed twice, and sometimes more, and at the latter ploughings the soil is cut into fine furrows, not less than seven and sometimes nine inches deep. This frequent working is undoubtedly of great advantage to this stiff soil.

His sheep have formerly been from 1,000 to 1,200 in number. Lately, however, he has substituted cattle for sheep to a considerable extent. He has at present sixty head of cattle, forty of which are three years' old steers, bought last fall and fed through the winter in the barn-yard on straw, oil-cake, and corn-and-cob meal. They are to be turned off for beef whenever the market is most favourable. Mr. J. thinks the feeding of cattle in this way has some advantages over keeping sheep. He can buy the steers in the fall and generally sell them in the spring, during which time they will have consumed a large portion of his straw, and with the other food that will have been given them, will be fat. The summering of the stock is thus avoided, and Mr. J. thinks he will have more manure, which is a great object with him, than he could make by devoting his farm as much as he formerly did to sheep.

Superior Cow.—Among Mr. J.'s cows, several of which were full blood Short-horns, we particularly noticed a half-blood cow, five years old, which had produced her second calf about five weeks before. Seeing that she was really a fine animal, and had the appearance of an uncommon milker, we made inquiries in regard to her. Mr. J. told us that she had been regularly milked three times a day, since she calved. When the calf was about two weeks old, the milk of the cow was carefully measured for several days, and found to range from thirty-six to forty-two wine quarts per day. She is a well formed and thrifty cow, and notwithstanding the very great quantity of milk she afforded, was in good flesh.

Under-draining.—Mr. Johnston is of opinion that the winter-killing of wheat is caused by too great a retention of water in the soil and subsoil. In this we fully agree with him. To obviate the evil he has resorted to under-draining with tiles, of which he has laid 700 rods. The tiles are made by Mr. Whartenby, of Waterloo, after a pattern procured by Mr. J., from Scotland. They cost at the kiln twenty cents per rod. The drains are dug about two and a half feet deep, or so low that the water does not come up through the bottom. The digging costs from eight to ten cents per rod, making the whole cost of the drains, including the carriage from the kiln, about thirty cents per rod. The tiles appear to be made in the best manner. They are not in the least injured by the weather, even when exposed to the most severe frost. Where the bottom of the ditch is firm, the tiles are placed immediately on it; if the ground is soft, a hemlock board is laid down, on which the tiles are placed. A little straw is laid over the tiles and the earth which had been excavated is then thrown on.

The beneficial effects of draining on Mr. Johnston's farm are very apparent. Places which formerly would bear no wheat, nor indeed scarcely anything but a kind of sour grass and reeds, are made, merely by draining, to produce the finest crops of every description of grain. He is so well convinced of the advantages of the practice, that he has laid 400 rods the present season, and intends to continue it still more extensively.

Mr. J. is now beginning to turn his attention, more than he has formerly been able to do, to the improvement of his buildings and fences. Along the roads, he is removing the rail fences, and substituting for them neat and substantial board ones; and he is preparing to remodel and repair his barns.

Col. Sherwood's farm, at Auburn, consists of 300 acres. From the state in which it came into Col. S.'s possession, he has been obliged to begin at the foundation, and proceed in most respects as if it were a new farm. He has not yet had time enough to bring everything into the most desirable state, though he has made many important improvements, especially in buildings and fences. His farm is laid out in a very convenient manner, and can be managed with as much facility as any farm within our knowledge. He has devoted much attention to the improvement of live stock, and his herd of Short-horn cattle, and flocks of Merino and South-down sheep, are distinguished as among the best in the country. Of swine, he has Berkshires and Suffolks.

Col. Sherwood's crops this season, are forty acres of wheat, most of which we thought very good; four and a half acres of Multicole rye, which looked fair for a very heavy crop; fifteen acres of barley; twenty-two acres of Indian corn; four and a half acres of oats; four and a half acres of peas;

and about three acres in various kinds of vegetables.

His land, like much of that in western New York, is much benefitted by deep tillage. He has this season broken up thirty acres of sward to the depth of nine to ten inches. His teams for doing this have been a pair of heavy oxen and a pair of heavy horses to each plough. This land, after having been thoroughly worked several times with a steel-tooth cultivator, is to be sown to wheat in autumn.—*Cultivator.*

For the Farmers' Cabinet.

The Principle of Draught.

It seems an almost universal opinion, that the nearer the horse is attached to the load, the lighter will be the draught; for then, the horse by lifting, is enabled to overcome a considerable portion of the "downward weight of friction." And this is prettily exemplified in the child who, when the fore-wheels of his little wagon have dropped into a hollow, steps back, and shortening his hold on the tongue of the wagon, lifts the wheels; and he is then enabled to drag it out easily enough. Still, however, a medium is to be observed, for the horse is oftentimes placed so far back and tight in his gearing, as not to be able to apply his whole strength to the object; as we daily witness.

But this view of the case cannot be made to apply to the operation of ploughing, for there, all lifting is to be deprecated; although the shortening of the draught, by means of the clevis and traces, as well as the backbands, is strenuously defended and universally practised; than which, there cannot be a more egregious error. In the first place, the plough must be set so as to *swim*, without the smallest tendency either to rise or sink; and then it is of no importance what might be the length from the clevis at the head of the plough to the swingle tree; it may even be doubled, without adding an ounce to the draught of the plough, which has merely to be drawn forward at the properly adjusted depth.

The Scotch are supposed to be the best ploughmen in the world, but although I may not be ready to admit this to its full extent, they have convinced themselves of the correctness of this theory, and always use a considerable length of single chain on the head of the plough; by which means they are enabled to obtain a far more easily directed leverage, and to guide the plough with greater facility as well as accuracy, without, let me repeat, increasing the draught a single ounce. And I have observed, that many of the Prouty & Mears ploughs have a swivel and link attached to the head, which lengthens the draught about five or six inches; but I have abundant reason to know, that so far from the draught being increased thereby, it is very much reduced, by the ease with which the ploughmen are enabled to guide them; and at the same time, one-half the inconvenience arising from the hugging or bearing away of the land-horse, is obviated by the additional length of leverage and the steadiness obtained by the use of the swivel. And I am convinced also, that if this link and swivel were to be increased to the length of a foot or even more, the dynamometer would not show that the draught had been at all increased, provided the plough has been properly adjusted by means of the clevis, or the vertical screw, as in their ploughs of modern structure, so as to exhibit no tendency either to rise or sink in the ground. This is a subject of much importance, but so far as I know, but little understood and less attended to. Would your practical readers put it to the test of experiment? R.

Burlington, N. J.

From Downing's Horticulturist.

Culture of the Peach Tree.

Mr. Downing,—As I deem the results of experiments in horticulture of more general interest than the promulgation of theories, I venture to send you some brief notes of my experience in the cultivation of the peach tree.

In your valuable standard work on fruits, you have, I think, proved very plainly that the disease of the peach tree, called the *yellows*, is caused by bad cultivation in a light or poor soil. I am very well convinced that other maladies to which this fruit tree is subject, are the result of the same causes. It is the common and popular belief, that the peach tree should always be planted in a light sandy soil; nay, that a thin sandy loam is the best for it. I suppose this opinion has arisen from the circumstance of the low price at which many tracts of land in New Jersey, Delaware, and Maryland, can be turned into peach orchards, and that too *profitably.*

But it is well known, that there peach orchards are short-lived. From three to five years is their average duration, and most planters do not expect to get more than one or two crops of fruit from their trees. They then give them up as diseased or worn out, and plant new orchards.

It is well known, also, that such is not the natural duration of the peach tree; that in the deep soil of the Ohio the trees bear

and grow well from ten to twenty years; and the natural existence of the peach tree in our climate, is at least a dozen years of fruitfulness.

What I gathered some years ago from this reasoning is, that we make a mistake in this part of the Union, when we plant orchards with the expectation of raising the *finest fruit*, or *healthy long-lived trees* on *light thin soil.*

It is my own belief, based on some little observation and practice, that no soil will grow the best peaches, i. e. the largest and finest flavoured—except it is good *wheat land.*

I have some land in this county of the character usually selected for peach orchards, and I have grown a limited orchard for many years past, with the usual success, viz., tolerable fruit and short-lived trees. About eight years ago, after visiting a neighbour in the upper part of New Jersey, where the soil is good strong wheat land, I determined to change my plan of raising them altogether. I considered that we mistook the nature of this fruit tree; that it really requires more generous culture.

Choosing a tolerably good field on my farm, I set about preparing it for an orchard. This was in October. It was on a fair sandy loam, rather light, on a subsoil of gravelly loam.

My idea was to deepen and enrich the soil of this field before planting the trees. It is not, I believe, considered well to subsoil where the underlayer is gravel. But I made the experiment nevertheless, as it was, I thought, my only chance for decided success.

The trees in this orchard were to be planted sixteen feet apart. As labour and manure were both of consequence to me, I determined to make my first experiment by subsoiling only half the area to be set out with trees.

This I did by ploughing and thoroughly subsoiling straight strips across the whole field, eight feet wide. The subsoil plough followed after the common plough, and had two yoke of cattle to draw it. By this means I loosened and stirred up the gravelly substratum to the depth of sixteen inches; it became, also, considerably mingled with the top soil. The land was in tolerably good order, but I had it dressed with a strong lime compost,—lime and peat,—just before the subsoiling was begun.

The remaining strips of the field were simply ploughed in the common way, and the whole harrowed together.

I then planted the rows of trees as nearly as I could, in lines running through the middle of the subsoiled strips. This gave them a prepared surface four feet wide on each side, and sixteen feet in the row from tree to tree.

The trees grew more vigorously the first season after transplanting, than I ever saw any do before. Here and there as I saw a sickly looking one, during this and the next two years, I immediately took it out, and filled its place with another of healthy growth.

The result of my experiment has been most satisfactory. The orchard is in excellent health and a good bearing state, though it has been in bearing now to the sixth year. The *flavor* of the peaches raised in it, is *much finer than I have ever raised* otherwise in the same soil. And a small orchard set a year since on a joining farm, in a soil quite like my own, but planted in the ordinary way—that is on thin light soil, unprepared, bore its two crops of fruit, then failed, and had to be rooted out.

There is no doubt but my success would have been more complete if I had subsoiled the *whole* of the land. This I could not afford to do at the time, but those having capital would of course do so. I remarked during the first three years, when I raised root crops in my orchard, that the growth of the crops was a great deal finer, and the yield nearly a third more on the strips that were prepared or subsoiled, than on those that were only surface ploughed.

Your readers may draw their own conclusions. I will add, before finishing my letter, that after some little practice, I am strongly in favour of the mode of *shortening in* the peach, which you have so strongly urged upon all cultivators of this fruit. It appears to me to be a great improvement upon all other modes of pruning the peach tree.

Your friend, S.

Bucks co., Pa., Sept., 1847.

Smoked Mutton.—The Editor of the Tennessee Farmer declares his preference for the ovine over the bovine or the swinish race. He says on his knowledge of physiology,—which none will dispute,—that a pound of lean, tender mutton, can be procured for half the cost of the same quantity of fat pork; and that it is infinitely healthier, in summer, especially; and that those who feed on it becomes more muscular, and can do more work on it, with more ease to themselves. He knows of nothing more delicious than smoked mutton hams.

To cure scratches on a horse, wash the legs with warm soapsuds, and then with beef brine.

For the Farmers' Cabinet.

Remarks on the Potatoe Disease.

Mr. Editor,—I send you a short paper on the Rot, with such remarks as have occurred to me in the course of my examination of this important subject. We wish it to be understood that we offer no theory, as to the cause of this destructive disease, but confine ourselves to the simpler and modest duty, of finding materials for the examination and speculation of others better fitted for a study of the laws of nature. The subject has been already sufficiently perplexed with the superficial opinions of persons not suited by their habits of mind for critical and accurate remark, and already too much overloaded with the hasty and crude ideas of those who had no appreciation of the difficulties of the case. To know anything of those wonderful movements going on around us, requires something more than the mere observation of that which passes before us. To attain even a remote idea of the secret and mysterious movements of nature, exacts laborious and profound study, but to rise to the discovery and understanding of a cause, requires powers of mind with which very few are gifted. The disease before us has had nearly as many causes as it has had observers. At one time it was honey dew, then a fungus, then again an insect; and then an unseasonable change of temperature. All these the philosophic mind will put aside, and proceed to the examination of the subject, unbiassed, if possible, by any preconceived opinions. We believe the matter is now in charge of those who will give it the fullest and severest examination. It has been taken up by some of the governments of Europe; they have called to their aid their foremost men of science, and there is no doubt that all the resources of chemistry, and of every other science that can bear on this disease, will be immediately and thoroughly put in action. It has assumed, besides its importance in the economy of nations, a political interest, that very naturally excites the dread of those countries whose population cannot extend itself; where there is only soil enough to cover the dead, but none to spare to feed the living. These old governments of Europe fear a collision with a starving people—a shock to their political authority—a depopulation of their dominions. This country, more fortunate and more flourishing, has her share in the disaster, though from the immense extent of her territory and a great variety of climate, she has little to dread from an epidemic among her crops: yet in proportion to the failure abroad, will be the pressure on the energies of her people, as she must either feed the subjects of foreign countries in their own homes, by the usual mode of commercial exchange, or she must feed them in large numbers, as paupers, on her own shores. In this way, this disease in a vegetable so humble as the potatoe, has risen to such importance as to decide the life or death of millions, and to disturb the career of empires. It is to be hoped then, that those engaged in this interesting investigation, will be able to discover, not only a cause, but what is of far more importance, a remedy.

It is not part of our duty to give a history of this disease. From a pamphlet published by a distinguished man of science in Europe, a portion of which was translated at the request of this Society, and published in vol. ix. of the Farmers' Cabinet, it appears that the potatoe is liable to various diseases, but that this one, known as rot, was first described in 1769. It made its appearance in different parts of Germany in that year, and in 1783 and 1784. In the present century, it first appeared in France and Germany, in 1830; from that time it has gradually gone on extending itself, and has at length become so virulent and dangerous, as to create universal alarm. We presume that this is the same disease that is now ravaging parts of Europe, and the same we have seen in this country. The author of this pamphlet gives no one cause as producing this disease. He assigns several influences that may have assist in causing it, but very properly gives no one, as the direct and immediate agent in its creation. A fungus—an insect—foggy and moist weather, are spoken of as probably having some effect in calling it forth, but rather as aiding, than as causing. There seems but one condition generally applicable, which was the setting of cuttings, instead of the whole vegetable. With this exception, there does not appear any one condition common and uniform in this disease. On this side of the Atlantic it is said to have appeared first in Nova Scotia; in this part of the United States it did not show itself, or did not attract attention till 1843. In that year a few farmers lost their crops. From that time to the present, it has continued among us, seriously injuring, though not entirely destroying the crop. In parts of New York and New England, the disease has been more extensive and more active. One point we have been particularly desirous of examining; what changes of temperature took place at the time when the disease was first indicated. We, of course, as already mentioned, have avoided being influenced by any preconceived impressions of the agency of any one cause, but in a matter of

this sort, it is necessary to consider all that is likely to affect the growth of the plant under examination, and there is no one element in the whole subject of more interest or importance, than that of the atmospheric changes which occurred at the particular time when the disease first appeared. From all the evidence that we can find in this country and in Europe, it seems that every thing connected with the growth of the potatoe, had a remarkably flourishing appearance up to a certain period. In England and Ireland, this was in July; in this country, in August. That there then took place a sudden change in the weather, from a natural and genial state, to one damp and foggy, which, no doubt, if it did not check vegetation, produced a very strong predisposition to disease. Whether this was the case in every quarter where the disease has appeared, we have no means of ascertaining, but it seems to have been the prevailing state of the climate in those parts with which we are the most familiar, and in which we have the most interest. We are much inclined to think, however, that although this may have been a very active predisposing cause to disease, yet that it was not the only or the real source of the disease. What the crop might have been, if this atmospheric change had not occurred, is a mere matter of conjecture, but the alteration in the character of the vegetation and in the growth of the plant, was too sudden to be consistent with a perfectly healthy condition. A strong vegetable in an advanced period of its growth would be able to resist these vicissitudes of temperature, and would not, we think, so readily and so universally give way to them. It seems to us to argue a delicacy in the seed, something feeble in that power which causes the plant to germinate and continues it in growth to its maturity. We observe in some of the English agricultural periodicals that the rot is ascribed solely to the seed employed, being that of tubers which had already sprouted, either from too great a mildness of the winter, or from having been badly preserved through that season. Whether this assertion could be true, so far as respects nearly all Ireland, large parts of England, and considerable portions of the continent of Europe, we have no means of knowing; but it seems, though a very plausible cause, yet not sufficiently comprehensive to be universally applicable, and we are very sure that few farmers in this country would allow it to be any reason at all for the rot reaching their fields. In collecting every fact and circumstance, whether from earth or air, that could bear at all on this mysterious subject, we have been struck in the progress of our investigation with one remarkable coincidence as to the prevailing nature of the seasons in this country and in Europe. From the first appearance of this disease, the winters are said to have been mild and open, the springs cold and backward, portions of the summer hot and dry, followed by a sudden change to wet and foggy weather. This certainly must not be overlooked in making up our judgments. There is no doubt that such ungenial vicissitudes would produce a very unhealthy vegetation, but we cannot take it as the only operative cause, unless it could be proved that the crop was destroyed throughout the whole country, where this weather prevailed, instead of being injured in some quarters, while others escaped, though the circumstances in each case were the same. It should be borne in mind that the potatoe has been always liable to disease. The curl and the scab have in their day prevailed so extensively as to create nearly as much alarm as the rot of our times. They have also occasioned nearly as much perplexity to the farmer, physiologist, philanthropist, and philosopher, though not as much to the politician. All kinds of causes have been brought forward to account for their appearance, the same as now. Too little heat, and too much moisture; fungi, invisible insects, the setting of too ripe tubers; everything that could be suggested or conjectured, was at once thrown out as a cause, but the whole remained as deep a mystery as ever. In those parts of England and Scotland where they most prevailed, a check was put to their ravages by a change of seed. The lowland farmer procured his from the cold and sterile moors of the highlands. And the English farmer from some district at a distance. This was the practical and sensible conduct of men who did not feel the alarm of the present devastation, who did not stop to speculate as to causes, but who saw that the best remedy was to rid themselves of a diseased vegetable, and put in its place one that was healthy. In France, where this rot has been very general, the men of science appear as much at a loss to assign a cause, as in England or in this country. They have brought forward in turn, the same series of causes that we have heard of here, with one additional new one, that of a strong wind. Though they have failed so far in discovering any satisfactory source of the malady, they have, with great scientific skill and nicety analyzed all its effects. But it would be of no interest to report these, as they have as yet led to no uniform conclusion. Each of the gentlemen engaged in these analyses has thrown out his conjecture, but these seem

little more than the indulging freedom of thought and speculation, in a matter where nature baffles us with her usual variety of strange and various action. They have, however, proceeded further, we believe, than anywhere else, in certain practical experiments of an important character, whose object was to prove how far the potatoe, in different states of the rot, could be employed as food for men or animals, without the chance of producing some of those dangerous epidemics that have occasionally arisen from the use of diseased vegetables. That which ravaged the south of France many years ago, from the use of the ergot of rye as food, was a strong evidence of the hazard that was run in employing vegetables in a state of disease. All the experiments showed, however, that there was no risk from the potatoe. It fattened sheep, and it was eaten cooked in the usual way, and the water in which it was boiled drank with impunity. We can hardly conceive this to have been done, when the vegetable was in the last degree of putrefaction. It would not then have been a potatoe, or what we usually call such, but a mass of matter, disorganized by disease, and utterly incapable of affording nourishment, though it might not affect health or life.

One thing is suggested by this statement, that may be of practical utility, whether if the crop were removed from the ground on the first appearance of the disease, a large part of it might not be saved. This could only take place when the tubers were somewhat advanced towards maturity, and is more likely to be possible with those planted early, than the late. But the first, all accounts seem to agree, are less exposed to the attack of this disease than the others—it does not appear invariably to be so, but generally. The mowing of the stems at the first moment of their turning black, which has been recommended, and said, in some reports, to have been practised with success, would, we should suppose, have the same effect as removing from the ground; all support and all connection with the atmosphere being cut away, the vegetable would necessarily cease to grow, and the progress of disease be at the same time arrested. From the examinations made in France, it seems that the slow or rapid progress of the disease depends very much on the thinness or thickness of the skin, or in other words, as the disease is conveyed by the stem to the tuber, its course will be more or less rapid, in proportion to the strength of the material through which it has to make its way. This may be a reason why some varieties are more liable to the attack and ravages of the rot than others, which appears uniformly to be the case in Europe and in this country. Here the Mercers are said to have been more seriously affected than any other. On the farm of the writer, a variety brought from the State of Maine, and which had only been planted one year in this climate, were equally injured with the Mercers. These are, however, some of those facts that are often found to contradict every general statement, and which we can only surmount, by taking the tendency of the whole evidence.

After as full an examination as we have been able to make, it appears to the writer that the source of this rot may be considered as depending on the condition of the seed and the state of the atmosphere, the one possessing a delicacy and liability to disease, and the other by its ungenial nature, developing them. If we could be entirely satisfied that the disease in the tubers arose solely from the diseased condition of the stem, and that this was owing to atmospheric changes alone, then the cause might be considered as determined, and the whole matter would be nothing more than a question as to when these influences would cease. But there are many instances recorded, in which the tubers were diseased, while the stem and leaves remained fresh and green; and in such cases we are compelled to regard the tuber, as from some cause, being in an unhealthy or delicate state. But notwithstanding the strength of the argument in favour of these atmospheric changes being the source of the disease, and they certainly seem the most plausible way of accounting for it, yet we cannot bring ourselves to assent to it in its full force, but think that they rather tended to develope disease in a vegetable already made delicate and predisposed to morbid action. In Sweden, where the rot existed, instead of these ungenial vicissitudes of temperature, the summer was remarkably dry; and in parts of South America, near the original home of the potatoe, a disease that on examination seems identically the same with that prevailing here, is not at all uncommon. The fungi, insects, &c., observed in the tubers, we regard not as the original source of disease, but as some of those means nature uses to bring about those changes and transformations that are incessantly going on in matter.

A. L. Elwyn.

Philadelphia, Oct. 5th, 1847.

Wheat, oats, rye, Indian corn, potatoes, hay and tobacco, are raised in every State and territory in the Union.

Memoranda on Pears.

BY THE LATE SAMUEL G. PERKINS, BOSTON.

I see by your horticultural journal, that you invite discussion on the comparative merits of different kinds of fruit, particularly pears, as the best mode of settling or establishing a useful and correct nomenclature.

The question has frequently been asked me by gentlemen who are beginning to cultivate fruits, "Which is the best pear?" and as there is no such thing as answering this question *directly*, I have answered that I could not tell, as it depended on so many circumstances of which I could not be supposed to have any knowledge.

In the first place, there are Summer, Autumn, and Winter pears, and each season calls for fruit of totally different properties. Then there are as many different tastes almost, as there are men; some like a sweet, luscious, and aromatic fruit, as the Seckel; others like better the spirited, delicate and delicious flavor of the St. Ghislain. Then you have many that prefer the Gansel's—or Brocas—Bergamot, and other pears of that rich delicious flavor, without being too sweet or too spirited. The White Doyenné [or St. Michael] has always been a decided favourite with many when in perfection, and the Louise bonne de Jersey is esteemed inferior to none of the autumn fruits.

But the pear most esteemed in our market is, I believe—when you speak of summer and autum fruits—the pear commonly known as the Bartlett. This pear, a wilding of 1770, in Berkshire, Great Britain, was sent or brought from England to this country by Mr. James Carter, in 1796 or 1797, for his partner, Mr. T. Brewer, who planted it in his grounds at Roxbury, under the name of the Williams' Bon Chretien, or properly, Good Christian, by which name it was then and is now known in England, where it is rated as second quality at Chiswick, as appears by the catalogue of their gardener, Mr. Thompson. Here it got the name of *Bartlett* from the present owner of the Brewer estate, who, not knowing its proper name, allowed it to be called by his own. In France it is known as the Williams pear (*Poire Guillaume*) where I think it is rated still lower than in England. Now many cultivators and fruit loving gentlemen esteem this pear above all others, and as it sells very high in the market, those who raise fruit to sell may well esteem it highly. But some gentlemen who esteem fruit in proportion as it suits their palate, are prone to consider it of inferior quality; although it is very large, and very handsome, and very juicy. But they say it tastes like rotten fruit. Suppose it to be true, that it has slightly the taste of an incipent state of decay, is it to be condemned entirely on that account? The Medlar, which is one of the apple and pear tribe, was formerly raised in England in considerable quantities, but was never eaten until rotted under ground. Is it not then assuming too much to put a fruit down merely because it has a rotten flavor? Who shall decide upon this question, where tastes vary as much in regard to the flavor of the fruit as it does as to the human countenance?

The best pear must depend on the use to which you mean to apply it; if for your own eating, that which suits your own palate most exactly, is the best; if for profit, that which will bring the most money in the market, is to be preferred.

In some places, fruit that is in an incipient state of decay is to be preferred to that which is sound, as may be seen by the following fact:

In the autumn of 1843, I was at Honfleur in France, in the neighbourhood of which place, I saw several women mounted on donkeys, going, as they told me, to market with fruit. On being asked, what kind? Pears, was the answer. What kind of pears? The Messire Jean, was the reply. As this pear was a great favourite with me, when I was able to bite through its hard sides,—for it is the extreme and the perfection of the breaking pears, as the Brown Beurré is the extreme and the perfection of the soft-flesh or buttery pears. I gave the woman a small piece of money, and asked the amount in pears. With this request she complied, by giving me a number of these fruit, which I found were all rotten. On asking her in an angry tone, why she gave me a parcel of worthless, rotten fruit, she laughed in my face, and said, "You joke, I believe," and told me I must be a green one, indeed, not to know that this pear was always rotted before it was eaten. "The pears," said she, "are in perfection, and if you are so ignorant as not to know what is good, it is no fault of mine, so good morning to you," and off she drove, leaving me to swallow the imposition as I considered it, or the joke as she did, or the pears themselves, as I thought best.

But we have a great variety, out of which a selection may be made, to gratify every taste, some of which varieties we will now enumerate.

Those pears that are considered as summer pears, are Madeline, Harvard, Jargonelle, Green Chisel, Muscat Robert, Blanquet à longue queue, Franc Real d'été, several of the Bergamots, such as the Red

and the Summer; also the Catharines, or Rousselets, or what are commonly called the Summer Caten or Catern, and the Rousseline. Many of these are esteemed and valuable fruits, when raised for the use of the cultivator and his family. If I were called upon to select six of the finest *summer* pears for a private garden in the country, I should name the Madeline, the Harvard, the Jargonelle, Summer Franc Real, and Red Bergamot.

Among the *autumn* pears, there are, besides those above mentioned, the Dix, a wilding of Boston, inferior to none other, if all its valuable properties be considered. In appearance, form, flesh and size, together with its fine texture and delicate flavor, it resembles the St. Germain, and is, as an *autumn* pear, what the St. Germain, when in perfection, is as a winter pear, the most valuable species with which we are acquainted.

The Brown Beurré is another pear, perfecting in October, of superior merit, but it does not last long enough to give it the value of the Dix.

The Beurré Diel [on quince stocks] is another pear of distinguished merit, if it be properly treated, and kept till it be entirely ripe, and will be more and more esteemed as it is more known.

The Marie Louise and Josephine, are both excellent, as are the Verte Longue, the Capiaumont, the Sylvanche Vert, the Urbanist and Duchesse d'Angoulême.

But the autumn pear, under the name of Van Mons' Leon le Clerc, which has lately been brought into notice, has a great reputation in England, whence it was imported a few years since. I have had this fruit in bearing two or three years, and have found it very good, but not equal to the account given of it by Mr. Loudon in his Horticultural Journal. I prefer the Dix pear to it, although the Dix is not so large or so handsome; but it continues in eating longer, and when well ripened, has, to my taste, a better or more agreeable flavor.

Besides the above, there are several other kinds of autumn pears that deserve attention, such as the Beurré Portugal, the Figue d'Amiens, the Beurré Bronzé, the Vicar of Winkfield, Wilkinson, and others of equal value.

And among autumn pears, were I to select, I should name the Dix, the St. Ghislain, Gansel's Bergamot, Beurré Diel, Seckel, Marie Louise, White Doyenné (or St. Michael,) Isambert, Louise bonne de Jersey, Duchesse d'Angoulême, Van Mons' Leon le Clerc, and Urbaniste.

As regards the *winter* pears, the Napoleon and Passe Colmar may be considered as belonging to this class, although they sometimes ripen in November, but may be kept till late in December with proper care. These are both excellent fruits.

Among the new or Belgian pears, that ripen later in winter, those mostly esteemed are the Winter Nelis, the Glout Morceau, Beurré d'Aremberg, and Easter Beurré.

Although the St. Germain, the Virgoulouse, the Winter Colmar, and Chaumontel, are no longer cultivated in the open country near the sea-board, yet they still may be, and are raised in towns, as in Boston, in perfection, and may be in other cities, where they find that protection which the open country does not afford them in New England. Of these, the most valuable is the St. Germain, which fruit possesses more of the useful and valuable qualities which we require, than any other of the winter sorts; as it begins to ripen in January, and continues, if properly taken care of, into March and April, while it possesses the excellent texture of the buttery sorts, and is among the finest flavored of the pear tribe.

But as I have said before, this decides nothing; for my taste may, and would perhaps, be condemned by well informed gardeners. In fact, on this subject of taste in the flavor of fruits, I have long since become convinced, that no one can judge for all others; as I once had a practical evidence of its extraordinary deviation from what I had thought an established rule.

Being in Boston market in the autumn, I was, with several other persons, looking over some baskets of peaches and pears at one of the fruit and vegetable stalls. Presently a sailor entered, and the fruiter offered him a choice of his fine fruit, by calling his attention to his fine water melons and musk melons, and apples and pears, peaches and plums, of which he had an abundant supply. But Jack turned up his nose at all these, and fixing his eye upon a green cucumber, he exclaimed, "None of these for me, a cucumber for my money!" and applying the action to the word, he seized upon one of them, and clapping the bitter end into his mouth, he ate away upon it till the tears ran out of his eyes, and he was almost suffocated by the hasty and greedy manner that he swallowed it. The bystanders looked at him with astonishment, expecting to see him choke; at length, however, he cleared his throat sufficiently to give utterance to his words, when looking at a man who stood before him, watching his delighted and distorted countenance, he exclaimed, "If you

will believe me, sir, it is the first I have tasted this year!"*—*Downing's Horticulturist.*

Lime.

Read before the Farmers' Club, and communicated to the Farmer and Mechanic for publication.

Rondout, Aug. 10th, 1847.

HENRY MEIGS, Esq.,
Secretary of the Farmers' Club.

DEAR SIR,—Seeing by the accounts of the late excursion of the American Institute over part of Long Island, that much attention is just now paid to that important portion of the State; and supposing that in the meetings and conversations of so many competent men, brought together on the occasions, many suggestions have been made for improving the natural soil of the Island: permit me to trouble you with the following inquiries, to wit:

1st. Has the use of lime been recommended?

2nd. If so, *in what state* should it be applied?

And this brings me to a question I have often thought of putting before the Farmers' Club, if it has not already been a subject of discussion among its members, namely:

"Would not *coarsely pulverized raw carbonate of lime*, mixed up with a soil deprived of the lime principle, be a more permanent way of improving such soil, than the same stone used in the ordinary way, *after burning and slacking with water*, as it is most generally done now?"

This is a very old question. If we open the books, we find many valuable papers written on the subject, which leads to the belief, that in many cases, raw limestone ought to be preferred; and it is remarkable that most all the accounts given, of direct and judiciously conducted experiments,—some of them of many years continuance, both in England and this country—agree in the conclusion that carbonaceous matters, thus applied in a *raw state*, have proved very beneficial upon barren silicious soils, which afterwards, by judicious management, were rendered capable of bearing crops of cereals, with advantage. But it is also remarkable that most of the same accounts came to the same following conclusion, that, "The expense of reducing limestone to powder, would probably prohibit its extensive use in that state." Now, this objection might be well founded "Long time ago," but now, machinists have made such astonishing progress with their ingenious inventions, that it would indeed be doing injustice to them, to suppose that they cannot find means of crushing raw limestone into a coarse powder,—for the same costs incurred now by the operations of kiln burning and water slacking, I, for one, say that it *can be done:* so that, assuming this to be a fact, for the sake of the argument, the simple question remaining is, "Would it be more judicious to apply raw limestone pulverized, than the same stone burnt and slacked on the poor soils of Long Island?"

If it is true that the *burnt lime*,—that is to say, limestone deprived of its carbonic acid,—does not benefit the soil, until it has reabsorbed from the atmosphere the greater part of the carbonic acid which it has lost by burning, and has thus returned to the state of a *carbonate* again, then indeed, it would appear that these operations of burning and slacking, were mere contrivances to reduce the stone into powder; and that the *raw stone* reduced to powder, ought to claim the preference, as affording at once a larger proportion of carbon.

It may be objected that the raw stone would undergo a slower disintegration and decomposition, and not act so immediately as a manure: but if long duration, and even permanency in the improvement of the soil, are the objects in view, a slow disintegration should not be an objection. There would always be a sufficient proportion of the crushed stone in minute particles, for immediate action.

But, sir, I do not wish to trouble you any longer with a discussion which can be carried on, and perhaps has already been so, by much more able men. My principal object in addressing you, is to draw attention, and to make it known, in proper quarters, that, in case the farmers and land owners of Long Island should wish to give a fair and extensive trial to the raw pulverized limestone, I think it could be furnished to almost any quantity, and of various qualities—some of it is almost pure carbonate of lime,—from this place and vicinity, and at prices which

* We should rather incline to call this an instance of the sailor's coarse *appetite*, than his *taste*. Indeed, no word is so much misapplied as the latter. We consider a *taste*, by which we mean a *nice sense* of *discrimination*, as the result of good natural organization, joined to a familiar acquaintance with a great variety of the different objects on which the taste is to be exercised. Thus no man could be said to have a fine taste, in pictures, who had never seen anything better than the daubs of a village sign painter. To go lower, we believe M. Soyer would not give a person credit for any taste in cookery, who had never eaten anything except "plain boiled and roasted;" and we should certainly deny any one the right to claim a taste in fruits who does not know by heart, at least all the finest standard varieties.—ED.

could not be objectionable, considering the object to be obtained.

I am very respectfully, sir,
Your obedient servant,
G. S. Guilliard.

From the London Gardeners' Chronicle.

House-feeding Sheep.

I have two houses for feeding sheep, the one containing 140 stalls, and the other 150. My system has been now several years in operation, and answers my fullest expectations.

The great principle upon which I relied when I commenced it, was that safe and certain one, that in proportion as an animal is kept warm, clean, well fed,—in other words, comfortable in every respect,—it will improve in flesh and in fat, and will be likely to repay the attention of the feeder. This principle had been safely applied to other animals—to the ox, the swine, the horse, the dog—to many of the wild animals—and, what furnished a still stronger illustration, to birds—for the careful housewife invariably coops her poultry. The ordinary process of reasoning assured me that the same causes which were operative upon other animals, would be as certainly operative upon the sheep, and the result has fully justified the opinion.

My sheep are confined in stalls, the dimensions of which I need not give, because it is obvious that they must be regulated by the ordinary size of the breed to which they are to be appropriated. It is enough to say that they should not be so large as to enable the animal to turn round and dirty the trough. Each sheep is confined by a leathern collar, attached to a slight chain, of the size of a small dog chain, furnished with a couple of swivels, sufficiently long to secure comfort to the animal, but not long enough to hang back beyond the division of his stall, and to interfere with his neighbour. At the head of each sheep is a trough, for the purpose of holding turnips, at one end of which is a division for chaff, bruised corn, linseed-cake, or other food of the kind. Above the trough is a small rack for vetches, clover, or other long food.

In one of my houses a small cast-iron water trough is appropriated to every two sheep, the entire number of troughs being laid upon a level, and supplied from a tank furnished with a ball-cock.

Under each row of animals is a receptacle for the manure, formed of brick laid in cement. It is about two feet deep, and as much in breadth, and is covered by an oaken grating. A receptacle of these dimensions requires emptying about once in ten weeks. The sheep stand back to back, with an interval between the rows suffieient to allow the barrows, for feeding and for carrying away the manure, to pass freely through the house, and this passage is laid so far below the level of the gratings as to admit of any dirt dropped in the path being swept into the manure tanks on either side.

The whole of the openings in the stalls are secured by shutters, which in cold weather are closed entirely at night, and which are opened, more or less, according to the weather, during the day.

Gypsum is occasionally scattered along the paths, and swept into the tanks; and in the absence of gypsum, peat or other vegetable ash, which we find answer a good purpose.

So essential do I consider warmth, that if I were in a coal country I should be inclined to regulate the heat of my ox and sheep houses as we do that of our conservatories—by artificial heat; and I think it probable that the feeder would be repaid by glazing the openings left for light.

My sheep are generally very healthy, and thrive fast; but in this respect they differ very much. In some very rare instances individuals have gained a pound a day live weight. In many instances the average gain, upon a large number, has exceeded three pounds a head per week; but the more general average is about two and a half pounds. It is obvious that the breed and quality of the sheep, the age, the sex, the season, the weather, the food, are all involved in this question. And so in reference to the time occupied in making out the sheep for the butcher. Upon this point it is enough for me to say that the advantage of stall feeding over the open fold is immense; and it will be, of course, greater or less in proportion as the farm is one in which the soil and the exposure are more or less favourable to the well-doing of stock, and to the feeding off the turnip crop.

The manure is of first-rate quality, and especially valuable for the drill; not inferior, as I think, to the best guano, made as it is under cover, and containing as it does all the chemical properties of the urine, in admixture with the solid manure. My usual custom has hitherto been to use it with the addition of some bone, either in the raw state, or recently in that of superphosphate. I may add that under this system the growth of wool is very rapid, fully corresponding to that of the carcass.

I have thus told you everything which occurs to me as useful to be known by those

who may wish to carry into effect my method of feeding.

RICHARD SIMEON.

Swainston, Isle of Wight, Feb. 22nd.

W. C. SPOONER, Esq.

There are now before the public the details of three methods of shed-feeding sheep—the system of box or pen-feeding adopted by Mr. Huxtable, the method of stall-feeding practiced by Sir Richard Simeon, Bart., and the plan of having movable houses in the turnip field recommended by other gentlemen. Each system seems to have peculiar advantages as well as disadvantages, but all agree in the economical manufacture and expenditure of the manure.

W. C. SPOONER.

Flour and Wheat.

WE take the following very interesting table from a late number of the *Pa. Enquirer*. It would appear that we sent away last year more flour than we had ever done before: nearly twice as much as in 1845, and more than four times as much wheat as in 1845. One fact in the table strikes us as remarkable: it seems that in 1793, we exported more wheat than in any subsequent year except 1840 and '46—and considerably more than an average amount of flour for the last 57 years. The increase of population keeps up with the increased production that is the combined result of improved agriculture and extended fields.—ED.

THE following valuable table, showing the exports of flour and wheat from the United States, since 1790, was originally prepared for the *Commercial List* of this city, and appeared in that Journal several years in succession prior to 1842-43; since which time the table has been completed by another hand.

Export of wheat and flour from the United States:

	Bushels of Wheat exported.	Barrels of Flour exported.
1790	1,124,458	724,623
1791	1,018,339	619,681
1792	853,790	824,464
1793	1,450,575	1,074,639
1794	698,797	846,010
1795	141,273	687,369
1796	31,226	725,194
1797	15,655	515,633
1798	15,021	567,558
1799	10,056	519,265
1800	26,853	653,052
1801	239,929	1,102,444
1802	280,281	1,156,248
1803	686,415	1,311,853
1804	127,024	810,008
1805	18,041	777,513
1806	86,784	782,724
1807	776,814	1,249,819
1808	87,330	263,813
1809	393,889	846,247
1810	325,924	798,431
1811	216,833	1,445,012
1812	53,832	1,443,492
1813	288,535	1,260,942
1814		193,274
1815	17,634	862,739
1816	62,321	729,053
1817	96,407	1,479,198
1818	196,808	1,157,697
1819	82,065	750,660
1820	22,137	1,177,032
1821	25,821	1,056,119
1822	4,418	827,865
1823	4,272	756,702
1824	20,373	996,792
1825	17,990	813,906
1826	45,166	857,820
1827	22,182	868,490
1828	8,906	860,809
1829	4,007	837,385
1830	45,289	1,227,434
1831	408,910	1,806,529
1832	88,304	864,919
1833	32,421	955,768
1834	36,948	835,352
1835	47,762	779,396
1836	2,062	505,400
1837	17,303	318,719
1838	6,291	448,161
1839	96,325	923,151
1840	1,720,860	1,897,501
1841	868,585	1,515,817
1842	817,958	1,283,602
1843*	311,685	841,474
1844	558,917	1,438,574
1845	389,716	1,195,230
1846	1,613,795	2,289,476
	16,661,312	54,358,088

By the above table it appears that the total exports of wheat from the United States during the 57 years from 1790 to 1846 inclusive, were 16,661,312 bushels, and of flour 54,358,088 barrels.

The Royal Agricultural Society of England,

HELD its Annual Exhibition the present season at Northampton, from the 20th to the 23rd of July, inclusive. The show of animals was considered equal to any former one. The Short-horn, Hereford, and Devon cattle in particular, are spoken of as being uncommonly fine. The prizes for the two best Short-horn bulls, were awarded to John Parkinson, of Ley-fields, near Newark, and William Smith, of West-Rasen; for the best

* Nine months, the termination of the fiscal year being changed from September to June.

Short-horn cow, to Richard Booth, of Warlaby, near Northallerton. The prizes for the two best Hereford bulls, were awarded to Samuel Aston, of Lynch Court, Leominster, and George Pitt, of Wellington, near Hereford; for the best Hereford cow, to Wm. Abbott, of Glinton, near Peterborough. The prizes for the two best Devon bulls, were awarded to Thomas Bond, of Bishops' Lydiard, and the Duke of Manchester, Kimbolton castle. In Leicester sheep, the two prizes for rams in class I, were awarded to T. E. Pawlett, of Beeston; the first prize in class 2, to Robert Smith, of Burley-on-the-Hill, near Oakham; for ewes to Wm. Sanday, of Holme Pierrepont, and Robert Smith. In South Downs, Jonas Webb, of Babraham; John Harris, of Hinton; and the Duke of Manchester, obtained the prizes. In Cotswolds, Charles Large, of Broadwell, near Lecdale, was the principal prize taker. All these prizes were from 20 to 50 sovereigns.

This Society has upwards of 7,000 members. During the first day of the exhibition, 1,336 visitors entered the yards; the second day, 2,738; and the third day, 22,090. At the dinner of the Society, the Earl of Chichester proposed the health of our Minister, Mr. Bancroft, to which the latter replied in an eloquent speech, which was received with great applause. In allusion to the remark of Earl C. that Britain and the United States might "long remain in terms of brotherhood," Mr. Bancroft said:

"I respond fully, and in the name of every American, in the wish that has been uttered, that peace may be continued forever, (cheers) nay, rather let us hope that the relations between our countries, the international intelligence betwixt us, may lead to such intimate relations that the very thought of the disturbance of peace may be dismissed from our minds, and that it may seem a vain, unnecessary, and a useless prayer to pray that peace may be perpetual (cheers). This, gentlemen, is uttered from my heart, and every one of my countrymen will, I am sure, respond to it. I beg to renew my expressions of gratitude for your kindness to me on this occasion, and to offer my fervent prayers for the prosperity of the farmers of England." (loud cheers.)—*Cultivator.*

Saxony Sheep.

"In the year 1765, Augustus Frederick, Elector of Saxony, obtained permission from the Spanish Court to import two hundred Merinos, selected from the choicest flocks of Spain. They were chosen principally from the Escurial flock, and on their arrival in Saxony, were placed on a private estate belonging to the Elector, under the care of Spanish shepherds. So much importance was attached to the experiment, as it was then considered, that a commission was appointed to superintend the affairs of the establishment; and it was made its duty to diffuse information in relation to the management of the new breed; to dispose of the surplus rams at prices which would place them within the reach of all holders of sheep; and finally, by explaining the superior value of the Merinos, to induce the Saxon farmers to cross them with their native breeds. Popular prejudice, however, was strong against them, and this was heightened by the ravages of the scab, which had been introduced with them from Spain, and which proved very destructive before it was finally eradicated. But when it became apparent that the Merino, so far from degenerating, had improved" in the quality of its wool, in Saxony, "the wise and patriotic efforts of the Elector began to reap their merited success, and a revolution took place in popular sentiment. The call for rams became so great that the Government resolved on a new importation, to enable them more effectually to meet it, and to improve still farther the stock already obtained. For this purpose an individual, considered one of the best judges of sheep in Saxony, was dispatched to Spain in 1777, with orders to select three hundred. For some reason, probably because he experienced difficulty in obtaining a greater number presenting all the qualifications he sought, he returned with but one hundred and ten. They were from nearly all the different flocks of Spain, but principally the Escurial—and were considered decidedly superior to the first importation. In addition to the establishment at Stolpen, already founded, others were now commenced at Rennersdorf, Lohmen, &c.; schools were established for the education of shepherds; publications were distributed by the commissioners to throw information on the subject before the people; and the Crown tenants, it is said, were each required to purchase a certain number of the sheep."

"The first importation of Saxony sheep into the United States was made by Mr. Samuel Henshaw, a merchant of Boston, at the instance of Col. James Shepherd, of Northampton. They were but six or seven in number. In 1824, Messrs. G. & T. Searle, of Boston, imported seventy-seven Saxon sheep. They were selected and purchased by a Mr. Kretchman, a correspondent of the above firm, residing in Leipsic, and shipped at Bremen on board the American schooner Velocity. I was engaged to take charge of

the sheep on the passage, and I also shipped six on my own account. I am sorry to say that as many as one-third of the sheep purchased by Kretchman—who shared profit and loss in the undertaking,—were not pure blooded sheep. The cargo were sold at auction at Brooklyn, as 'pure-blooded electoral Saxons,' and thus unfortunately in the very outset the pure and impure became irrevocably mixed. But I feel the greatest certainty that the Messrs. Searle intended to import none but the pure stock—the fault lay with Kretchman. In the fall of 1824, I entered into an arrangement with the Messrs. Searle to return to Saxony, and purchase in connection with Kretchman, from 160 to 200 Electoral sheep. I was detained at sea seven weeks, which gave rise to the belief that I was shipwrecked and lost. When I finally arrived, the sheep had been already bought by Kretchman. On being informed of what the purchase consisted, I protested against taking them to America, and insisted on a better selection, but to no purpose. A quarrel ensued between us, and Kretchman even went so far as to engage another to take charge of the sheep on their passage. My friends interposing, I was finally induced to take charge of them. The number shipped was one hundred and sixty-seven, fifteen of which perished on the passage. They were sold at Brighton, some of them going as high as from $400 to $450. A portion of this importation consisted of grade sheep, which sold as high as the pure-bloods, for the American purchasers could not know the difference. It may be readily imagined what an inducement the Brighton sale held out to speculation, both in this country and Saxony. The German newspapers teemed with advertisements of sheep for sale, headed 'Good for the American Market;' and these sheep, in many instances, were actually bought up for the American market at $5, $8, or $10 a head, when the pure-bloods could not be purchased at from less than $30 to $40. In 1836, Messrs. Searle imported three cargoes, amounting in the aggregate to 513 sheep. They were of about the same character with their prior importations, in the main good, but mixed with some grade sheep. On the same year a cargo of 221 arrived, on German account, Emil Bach, of Leipsic, supercargo. A few were good sheep and of pure blood; but taken as a lot they were miserable. The owners sunk about $3,000. Next came a cargo of 210 on German account; Wasmuss and Multer, owners. The whole cost of these was about $1,125, in Germany. With the exception of a small number, procured to make a flourish on in their advertisements of sale, they were sheep having no pretensions to purity of blood. In 1827, the same individuals brought out another cargo. These were selected exclusively from grade flocks of low character. On the same year the Messrs. Searle made their last importation, consisting of 182 sheep. Of these I know little. My friends in Germany wrote me that they were like their other importations, a mixture of pure and impure blooded sheep. It is due, however, to the Messrs. Searle to say that, as a whole, their importations were much better than any other made into Boston.

"I will now turn your attention to the importations made into other ports. In 1825, thirteen Saxons arrived in Portsmouth. They were miserable creatures. In 1826, one hundred and ninety-one sheep arrived in New York, per brig William, on German account. A portion of these were well descended and valuable animals, the rest were grade sheep. In June the same year, the brig Louisa brought out one hundred and seventy-three on German account. Not more than one-third of them had the least pretensions to purity of blood. Next we find one hundred and fifty-eight shipped at Bremen, on German account. Some were diseased before they left Bremen, and I am happy to state that twenty-two died before their arrival in New York. All I intend to say of them is, that they were a most curious and motley mess of wretched animals. The next cargo imported arrived in the brig Maria Elizabeth, under my own care. They were one hundred and sixty-five in number, belonging to myself and F. Gebhard, of New York. These sheep cost me $65 a head, when landed in New York. They sold at an average of $50 a head, thus sinking about $2,400! I need not say that they were exclusively of pure blood. A cargo of eighty-one arrived soon after, but I know nothing of their quality. The next importation consisted of one hundred eighty-four, on German account, per brig Warren. With a few exceptions they were pure-blooded and good sheep. We next have an importation of two hundred by the Bremen ship Louisa. They were commonly called the 'stop sale sheep.' They were of the most miserable character, some of them being hardly half-grade sheep. The ship Phebe Ann brought one hundred and twenty sheep, of which I know little; and sixty were landed at Philadelphia, with the character of which I am unacquainted. Having determined to settle in America, I returned to Saxony, and spent the winter of 1826–7, in visiting and examining many flocks. I selected one hundred and fifteen from the celebrated flock of Ma-

chera, embarked on board the ship Albion, and landed in New York June 27, 1827. In 1828, I received eighty more from the same flock, selected by a friend of mine, an excellent judge of sheep. I first drove them to Shaftsbury, adjoining the town of Hosic, where I now reside. On their arrival they stood me in $70 a head, and the lambs half that sum."—*Farmers' Library.*

Silas Wright's Address,

At the Exhibition of the New York State Agricultural Society, 9th mo. 16, 1847.

MR. PRESIDENT, and Gentlemen of the State Agricultural Society:

Had it been my purpose to entertain you with a eulogium upon the great interest confided to your care, the Agriculture of the State, I should find myself forestalled by the exhibition which surrounds us, and which has pronounced that eulogy to the eye, much more forcibly, impressively, eloquently, than I could command language to pronounce it to the ear of this assembly.

Had I mistakenly proposed to address to you a discourse upon agricultural production, this exhibition would have driven me from my purpose, by the conviction that I am a backward and scarcely initiated scholar, standing in the presence of masters, with the least instructed and experienced of whom, it would be my duty to change places.

The agriculture of our state, far as it yet is from maturity and perfection, has already become an art, a science, a profession, in which he who would instruct must be first himself instructed far beyond the advancement of him who now addresses you.

The pervading character of this great and vital interest, however; its intimate connection with the wants, comforts, and interests of every man in every employment and calling in life; and its controlling relations to the commerce, manufactures, substantial independence, and general health and prosperity of our whole people, present abundant subjects for contemplation upon occasions like this, without attempting to explore the depths, or to define the principles of a science so profound, and, to the uninitiated, so difficult as is that of agriculture.

Agricultural production is the sub-stratum of the whole superstructure; the great element which spreads the sail and impels the car of commerce, and moves the hands and turns the machinery of manufacture. The earth is the common mother of all, in whatever employment engaged, and the fruits gathered from its bosom, are alike the indispensable nutriment and support of all. The productions of its surface and the treasures of its mines, are the material upon which the labor of the agriculturist, the merchant, and the manufacturer, are alike bestowed, and are the prize for which all alike toil.

The active stimulus which urges all forward, excites industry, awakens ingenuity, and brings out invention, is the prospect or the hope of a market for the productions of their labor. The farmer produces to sell; the merchant purchases to sell; and the manufacturer fabricates to sell. Self-consumption of their respective goods, although an indispensable necessity of life, is a mere incident in the mind impelled to acquisition. To gain that which is not produced or acquired, by the sale of that which is possessed, is the great struggle of laboring man.

Agricultural production is the first in order, the strongest in necessity, and the highest in usefulness, in this whole system of acquisition. The other branches stand upon it, are sustained by it, and without it could not exist. Still it has been almost uniformly, as the whole history of our state and country will show, the most neglected. Apprenticeship, education, a specific course of systematic instruction, has been, time out of mind, considered an indispensable pre-requisite to a creditable or successful engagement in commercial or mechanical pursuits; while to know how to wield the axe, to hold the plow, and to swing the scythe, has been deemed sufficient to entitle the possessor of that knowledge to the first place, and the highest wages in agricultural employment.

A simple principle of production and of trade, always practically applied to manufactures and commerce, that the best and cheapest article will command the market, and prove the most profitable to the producer and the seller, because most beneficial to the buyer and consumer, is but beginning to receive its application to agriculture. The merchant, who, from a more extensive acquaintance with his occupation, a more attentive observation of the markets, better adapted means, and a more careful application of sound judgment, untiring energy and prudent industry, can buy the best and sell the cheapest, has always been seen to be the earliest and surest to accomplish the great object of his class, an independence for himself. So the mechanic, who, from a more thorough instruction in the principles and handicraft of his trade, or a more intense application of mind and judgment with labor, can improve the articles he fabricates, or the machinery and modes of their manufacture, and can thus produce the best and sell the cheapest, has always been seen to reach the same advantage over his competitors, with equal readiness and certainty; and that these results should follow

these means and efforts, has been considered natural and unavoidable.

Still the agriculturist has been content to follow in the beaten track, to pursue the course his fathers have ever pursued, and to depend on the earth, the seasons, good fortune, and providence, for a crop, indulging the hope that high prices may compensate for diminished quantity or inferior quality. It has scarcely occurred to him that the study of the principles of his profession had anything to do with his success as a farmer, or that what he had demanded from his soils should be considered in connection with what he is to do for them, and what he is about to ask them to perform. He has almost overlooked the vital fact, that his lands, like his patient teams, require to be fed to enable them to perform well, and especially has he neglected to consider that there is a like connection between the quantity and quality of the food they are to receive, and the service to be required from them. Ready, almost always, to the extent of their ability, to make advances for the purchase of more lands, how few of our farmers, in the comparison, are willing to make the necessary outlays for the profitable improvement of the land they have?

These and kindred subjects, are beginning to occupy the minds of our farmers, and the debt they owe to this society for its efforts to awaken their attention to these important facts, and to supply useful and practical information in regard to them, is gradually receiving a just appreciation, as the assemblage which surrounds us, and the exhibitions upon this ground, most gratifyingly prove.

Many of our agriculturists are now vigorously commencing the study of their soils, the adaptation of their manures to the soil and the crop, the natures of the plants they cultivate, the food they require, and the best methods of administering that food to produce health and vigor and fruit; and they are becoming convinced that to understand how to plow and sow and reap, is not the whole education of a farmer; but that it is quite as important to know what land is prepared for the plow, and what seed it will bring to a harvest worthy of the labors of the sickle. Experience is steadily proving that by due attention to these considerations, a better article, doubled in quantity, may be produced from the same acre of ground, with a small proportionate increase of labor and expense, and that the farmer who pursues this improved system of agriculture, can, like the merchant and mechanic referred to, enter the market with a better production, at a cheaper price, than his less enterprising competitor.

This change in the agriculture of our state and country, opens to the mind reflections of the most cheering character. If carried out to its legitimate results, it promises a competition among our farmers, not to obtain the highest prices for inferior productions, but to produce the most, the best, and the cheapest of the necessaries of human life. It promises agricultural prosperity, with cheap and good bread, furnished in abundance to all who will eat within the rule prescribed to fallen man, in the sacred volume of Divine law.

Steady resolution and persevering energy, are requisite to carry forward these improvements to that degree of perfection dictated alike by interest and by duty; and the stimulus of a steady and remunerating market will rouse that resolution and nerve that energy. Without this encouragement in prospect, few will persevere in making improvements which require close and constant mental application, as well as severe physical labor. Agriculture will never be healthfully or profitably prosecuted by him whose controlling object is his own consumption. The hope of gain is the motive power to human industry, and is as necessary to the farmer as to the merchant or manufacturer. All who labor are equally stimulated by the prospect of a market which is to remunerate them for their toil, and without this hope neither mental activity, nor physical energy, will characterize their exertions. True it is that the farmers of our country, as a class, calculate less closely the profits of their labor and capital, than men engaged in most other pursuits, and are content with lower rates of gain. The most of them own their farms, their stocks and farming implements, unencumbered by debt. Their business gives but an annual return. They live frugally, labor patiently and faithfully, and at the close of the year, its expenses are paid from its proceeds, the balance remaining being accounted the profits of the year. Although a moderate sum, it produces contentment, without a computation of the rate per cent. upon the capital invested, or the wages it will pay to the proprietor and the members of the family. The result is an advance in the great object of human labor, and, if not rapid, it is safe and certain. It is a surplus beyond the expenses of living, to be added to the estate, and may be repeated in each revolving year.

If, however, this surplus is left upon the hands of the farmer, in his own products, for which there is no market, his energies

are paralyzed, his spirits sink, and he scarcely feels that the year has added to his gains. He sees little encouragement in toiling on, to cultivate beyond his wants, productions which will not sell; and the chances are, that his farm is neglected, his husbandry becomes bad, and his gains in fact cease.

To continue a progressive state of improvement in agriculture, then, and to give energy and prosperity to this great and vital branch of human industry, a healthful and stable market becomes indispensable, and no object should more carefully occupy the attention of the farmers of the United States.

Deeply impressed with the conviction of this truth, benevolent minds have cherished the idea that a domestic market, to be influenced only by our own national policy, would be so far preferable, in stability and certainty, to the open market of the commercial world, as to have persuaded themselves that a sufficient market for our agricultural products is thus attainable. It is not designed to discuss the soundness of this theory, where it can be reduced to practice; but only to inquire whether the state of this country, the condition of its society, and the tendency and inclination of its population, as to their industrial pursuits, are such, at the present time, or can be expected to be such for generations yet to come, as to render it possible to consume within the country the surplus of the productions of our agriculture. The theory of an exclusively domestic market for this great domestic interest, is certainly a very beautiful one, as a theory, and can scarcely fail to strike the mind favorably upon a first impression. Still, examination has produced differences of opinion between statesmen of equal intelligence and patriotism, as to its influences upon the happiness and prosperity of a country and its population. Any examination of this question would lead to a discussion properly considered political, if not partisan, and all such discussions it is my settled purpose to avoid, as inappropriate to the place and the occasion.

I simply propose to inquire as to a fact, which must control the application of theories and principles of political economy touching this point, to our country and its agricultural population, without raising any question as to the wisdom of the one, or the soundness of the other. Is the consumption of this country equal to its agricultural production, or can it become so within any calculable period of years? How is the fact? May I not inquire without giving offence, or transcending the limits I have prescribed for myself in the discussion? Can a fair examination, scrupulously confined to this point, take a political bearing, or disturb a political feeling? It is certainly not my design to wound the feelings of any member of the Society, or of any citizen of the country; and I have convinced myself that I may make this inquiry, and express the conclusions of my own mind as to the result, without doing either. If I shall prove to be in error, it will be an error as to the fact inquired after, and not as to the soundness of the principle in political economy dependent upon the fact for its application, because as to the soundness of the principle, I attempt no discussion and offer no opinion. It will be an error as to the applicability of a theory to our country, and not as to the wisdom or policy of the theory itself, because of the soundness, or unsoundness of the theory, when it can be practically applied, I studiously refrain from any expression, as inappropriate here. With the indulgence of the Society, I will inquire as to the fact.

Our country is very wide and very new. It embraces every variety of climate and soil most favourable to agricultural pursuits. It produces already almost every agricultural staple, and the most important are the ordinary productions of extensive sections of the country, and are now sent to the markets in great abundance.

Yet our agriculture is in its infancy almost everywhere, and at its maturity nowhere. It is believed to be entirely safe to assume that there is not one single agricultural county in the whole Union, filled up in an agricultural sense—not one such county which has not yet land to be brought into cultivation, and much more land, the cultivation of which is to be materially improved, before it can be considered as having reached the measure of its capacity for production. If this be true of the best cultivated agricultural county in the Union, how vast is the proportion of those counties which have entire townships, and of the States, which have not merely counties, but entire districts, yet wholly unpeopled, and unreclaimed from the wilderness state?

When to this broad area of the agricultural field of our country, we add our immense territories, organized and unorganized, who can compute the agricultural capacities of the United States, or fix a limit to the period when our surplus agricultural productions will increase with increasing years and population? Compare the census of 1830 and 1840 with the map of the Union, and witness the increase of population in the new States, which are almost exclusively agricultural, and who can doubt the strong and resistless inclination of our people to this pursuit?

Connect with these considerations of extent of country, diversity of soils, varieties of climate, and partial and imperfect cultivation, the present agricultural prospects of this country. Witness the rapid advances of the last dozen years in the character of our cultivation, the quality and quantity of our productions from a given breadth of land, and the improvements in all the implements by which the labour of the farmer is assisted and applied. Mark the vast change in the current of educated mind of the country, in respect to this pursuit; the awakened attention to its high respectability as a profession, to its safety from hazards, to its healthfulness to mind and body, and to its productiveness. Listen to the calls for information, for education, upon agricultural subjects, and to the demands that this education shall constitute a department in the great and all-pervading system of our common school education, a subject at this moment receiving the especial attention, and being pressed forward by the renewed energies of this Society. Behold the numbers of professors, honoured with the highest testimonials of learning conferred in our country, devoting their lives to geological and chemical researches calculated to evolve the laws of nature connected with agricultural production. Go into our colleges and institutions of learning, and count the young men toiling industriously for their diplomas, to qualify themselves to become practical and successful farmers, already convinced that equally with the clerical, the legal, and the medical professions, that of agriculture requires a thorough and systematic education, and its successful practice the exercise of an active mind devoted to diligent study.

Apply these bright and brightening prospects to the almost boundless agricultural field of our country, with its varied and salubrious climate, its fresh and unbroken soils, its cheap lands and fee simple titles, and who can hope, if he would, to turn the inclinations of our people from this fair field of labour and of pleasure? Here the toil which secures a certain independence is sweetened by the constant and constantly varying exhibitions of nature in her most lovely forms, and cheered by the most benignant manifestations of the wonderful power and goodness of nature's God. Cultivated by the resolute hands and enlightened minds of freemen, owners of the soil, properly educated, as farmers, under a wise and just administration of a system of liberal public instruction, should and will be, and aided by the researches of geology and chemistry, who can calculate the extent of the harvests to be gathered from this vast field of wisely directed human industry?

The present surplus of bread-stuffs of this country could not have been presented in a more distinct and interesting aspect than during the present year. A famine in Europe, as wide-spread as it has been devastating and terrible, has made its demands upon American supplies, not simply to the extent of the ability of the suffering to purchase food, but in superadded appeals to American sympathy in favour of the destitute and starving. Every call upon our markets has been fully met, and the heart of Europe has been filled with warm and grateful responses to the benevolence of our country and of our countrymen, and yet the avenues of commerce are filled with the productions of American agriculture. Surely the consumption of this country is not now equal to its agricultural production.

If such is our surplus in the present limited extent and imperfect condition of our agriculture, can we hope that an exclusive domestic market is possible, to furnish a demand for its mature abundance? In this view of this great and growing interest, can we see a limit to the period, when the United States will present, in the commercial markets of the world, large surpluses of all the varieties of bread-stuffs, of beef, pork, butter, cheese, cotton, tobacco, and rice, beyond the consumption of our own country? And who, with the experience of the last few years before him, can doubt that the time is now at hand, when the two great staples of wool and hemp will be added to the list of our exportations?

These considerations, and others of a kindred character, which time will not permit me to detail, seem to me, with unfeigned deference, to prove that the agriculture of the United States, for an indefinite period yet to come, must continue to yield annual supplies of our principal staples, far beyond any possible demand of the domestic market, and must therefore remain, as it now is and has ever been, an exporting interest. As such, it must have a direct concern in the foreign trade and commerce of the country, and in all the regulations of our own and of foreign governments which affect either, equal to its interest in a stable and adequate market.

If this conclusion be sound, then our farmers must surrender the idea of a domestic market to furnish the demand, and measure the value of their productions, and must prepare themselves to meet the competition of the commercial world in the markets of the commercial world, in the sale of the fruits

of their labour. The marts of commerce must be their market, and the demand and supply which meet in those marts must govern their prices. The demand for home consumption, as an element in that market, must directly and deeply interest them, and should be carefully cultivated and encouraged, while all the other elements acting with it, and constituting together the demand of the market, should be studied with equal care, and, so far as may be in their power, and consistent with other and paramount duties, should be cherished with equal care.

TO BE CONTINUED.

Food for Milch Cows.—At a large milk establishment near Newcastle, England, the cows are fed in the following manner: 91 pounds of clover hay,—cut or chopped—168 lbs. brewer's grains, 12 lbs. ground flax seed, 2 lbs. salt, are mixed together, and equally divided as the daily food for twelve cows. The hay, after having been cut, is put into the mash tub and scalded with boiling water. The other articles are then mixed with it. It is stated that a good cow thus fed, will yield an average of fourteen quarts of milk per day, for eight months in succession. The owner of the establishment, Mr. Arundale, stated that he had one cow which had not had a calf for two years and a half, that was giving an average of eight quarts per day. A great point observed is, that the cows never fall off in condition.—*Cultivator.*

Fat Animals and Large Crops result alike from abundance of Proper Food.—The profits of crops, as well as cattle, depend mainly upon the return they make for the food and labour bestowed upon them. The man who grows a hundred bushels of corn, or makes a hundred pounds of meat, with the same means and labour that his neighbour expends to obtain fifty bushels or fifty pounds, has a manifest advantage; and while the latter merely lives, the former, if prudent, must grow rich. He gains the entire value of the extra fifty bushels or fifty pounds. This disparity in the profits of agricultural labour and expenditure is not a visionary speculation—it is a matter of fact, which is seen verified in almost every town. We see one farmer raise 80 bushels of corn on an acre of land, with the same labour, but with more foresight in keeping his land in good tilth, and feeding better his crop, than his neighbour employs upon an acre, and who does not get 40 or even 30 bushels. This difference results from the manner of feeding and tending the crop.—*Vt. Chronicle.*

THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

Philadelphia, Tenth Month, 1847.

We have received the second number of *The Iowa Farmers' Advocate*, edited by H. Gates, and published weekly at Burlington, Iowa, in a quarto form of 16 pages, at $1 a year. It is well filled, and cannot fail, from the promise before us, to be highly useful to our Western farmers.

We understand the Chester County Horticultural Society's Annual Exhibition, at West Chester, was a very spirited affair, greatly creditable to its members and the neighbourhood. There is much horticultural taste and skill in the vicinity, as well as substantial means for their improvement and display. Numerous premiums were awarded, both for fruits and flowers.

By an extract from the Ohio Cultivator, on page 82 we learn, as indeed we have learned from various other papers of the State, that the disease of the potatoe has quite extensively appeared in Ohio. We do not hear much of it in the Atlantic States, and we hope the general crop will be a tolerably good one. The potatoes in this vicinity, are very fine, though the crop is not a large one.

The Burlington Gazette says, the Horticultural Exhibition in that city last month was well attended; and that Burlington County was well represented by the produce from the ample gardens and well managed farms of the vicinity.

It is stated in one of the Ohio papers, that peaches were produced at the recent Fair of the Columbus Horticultural Society, measuring more than a foot in circumference, and weighing 14 ounces.

We are advised, that a dairy farmer in Lancashire, England, lately realised £42,12*s.* 6*d.* by the sale of 13¾ cwt. of cheese, the product of thirteen cows, in thirty-eight days; full 40 cents a day for each cow.

We have thought the Address of Ex-Governor Wright, was well worth an insertion in the Cabinet. Part of it will be found on page 98. It will be recollected, that he died suddenly at his residence, Canton, N. Y., on the 27th of 8th mo. last. It is said he completed it only the day previously. It was read at the Exhibition by John A. Dix.

THE quantity of rain which fell in the 9th month, 1847, was ..... 8.07 in.

Penn. Hospital, 10th mo. 1st.

Poudrette.

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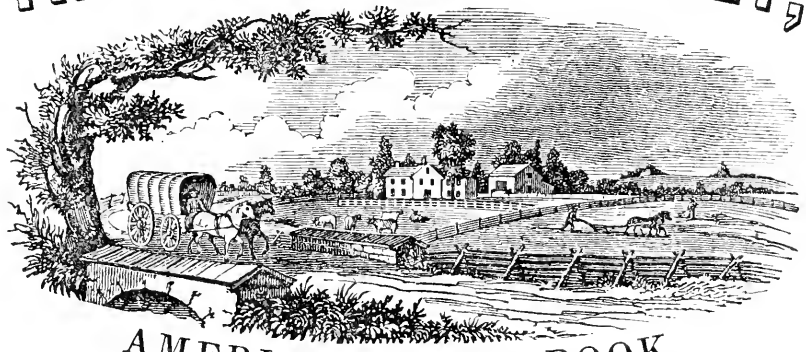
By the decision of the Post Master General, the "Cabinet," is subject only to newspaper postage.

Joseph Rakestraw, Printer.

THE FARMERS' CABINET,

AND



AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—LIEBIG.

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Manures.

THE following remarks are taken from a Lecture on the application of Chemistry to Agriculture, delivered by J. C. Nesbit, at Farnham, the latter part of last year; and we are indebted for it to the British Farmer's Magazine, for the fourth month last.—ED.

MANY persons, whose farms are near the sea, import fish on their land. These fish contain abundance of phosphate of lime and magnesia—bone dust,—a very important ingredient; and they contain ammonia, carbon, a little salt, and potash. They are what is called a quick manure; that is, they act quickly; but if you put them year by year by themselves, without applying something more solid, they would not continue to produce a good effect. When those who are near the sea use fish, I would advise them to mix them with other manures, to prevent their quick action from deteriorating the value of the land, by taking more from it in the year than it is capable of affording without injury. There is another most general means of introducing manure on land, though it is not generally known as such, viz., by feeding cattle with oil-cake. This is not generally regarded in that light; but still, it is neither more nor less than a means of manuring land. The oil-cake being composed of linseed which has been pressed from the oil, still contains considerable quantities of carbon and hydrogen, which are derived from the air, and of nitrogen, and forms a very good food for animals; they can derive from it a large quantity of fat, and some flesh; and that which is given out from them as manure contains large quantities of the mineral ingredients, together with a very considerable amount of ammonia. Well, the mineral ingredients and ammonia thus furnished by the oil-cake, is one way of manuring the farm. Oil-cake is very expensive, and it would not pay to feed cattle on it—at least, so many farmers have told me—were it not for the manure. They feed the animals because the manure which they get is so valuable. They tell me, "We sometimes lose £100 or £150 a year by our bullocks;" "but we must feed bullocks," they add, "because we thus manure our crops." When I was lecturing at Maidenhead, and had occasion to speak on this subject, I had to disabuse the minds of certain gentlemen as to the absolute necessity of submitting to a loss for this purpose; whether I was right or wrong you will be able to judge. A gentleman told me last spring, when you will recollect there was a great deal more turnips than the sheep would feed off, at least

in that part of the country, that he would give any one £2 an acre to send a flock of sheep to feed off his turnips. It struck me that this was too much; and I said to him, "Do you expect to derive anything from their feeding on the turnips?" He said, "Certainly." I rejoined, "In my opinion the sheep can give you nothing but what the turnips contain; the turnips will only pass through the bodies of the sheep. Do you not think that £2 spent for guano, with the turnips ploughed in, would give you more manure than £2 paid to feed off sheep?" I had a strong argument to maintain in the presence of a great number of gentlemen. The gentleman, of whom I have spoken, said, "If you will come to me to-morrow morning, at my farm, I will convince you." I replied, "I will be with you." I went over the farm in six hours; and that day I gained two converts, the gentleman and his son; and I believe they are now two of the first agriculturists in the neighbourhood. I had time to explain my views to them, and they soon saw that if you could get the turnips to rot in the ground, and were then to apply £2 worth of guano, you would get very much more than you could obtain by feeding off a certain number of sheep merely on the turnips. Well, then, I say that under certain circumstances it may be profitable to you, instead of feeding sheep, to use a certain amount of guano and other matters which may be put on the land, or to plough in your crops. It is a money question entirely; if we can obtain what we want for a pound less in one way than in another, it is necessary, in a commercial point of view, to get that which will cost the least. I do not call upon you to go and try a whole farm full of experiments of this kind; but the next time you are placed in the position which I have described, try an acre or two; and if you find, subsequently, that the crops are as good or better, you will have lost nothing by the experiment, and you will be enabled from your own experience, when placed in similar circumstances again, to do without the advice of a chemist. You see, in fact, with reference to the oil-cake, that the farmer imports the produce of one farm to put on another. Now there is another valuable manure which is well known, though it has only been recently imported. This manure, like all other manures, is derived from the vegetable world. Our rivers are pouring down, year by year, from the surface of the land, bone dust and potash and soda and ammonia, and a thousand things besides, into the ocean. All the soluble matters of the earth's surface are poured down by the rivers and rivulets into the sea; not, gentlemen, to exist there for no purpose at all. As large and extended a vegetable kingdom exists under the surface of the waters as above them, and the source of animal life in the sea is the same as that which sustains it on land. The fishes feed and browse on the sea-weed, as we call it, and on other plants belonging to the vegetable kingdom in the ocean. The carnivora of the fish kind feed on these fishes, as the fish feed on vegetables; and the birds of the air, having fed on fishes fed on the vegetable kingdom of the sea, deposit their food in places to which they resort. Now, the excrements of these birds—the birds themselves having fed on fish, which contain large quantities of every element of manure—must afford valuable ingredients. We have immense quantities of these excrements annually deposited all round our own islands, and wherever it can be collected, it is a most valuable manure; but in this country the rain falls in such abundance as to wash away, in the winter, nearly all that is deposited by these sea birds in the dry weather. There are localities in the earth, however, where the rain falls so seldom, or in such small quantities, that it acts scarcely at all upon these excrements, and they go on accumulating till they grow up to many feet in thickness, particularly in those islands which are scarcely ever visited by man, whither the birds resort in immense numbers. Well, now, the excrements of these birds being thus collected in a dry latitude, and consolidated for many years, until they almost have the appearance of a rock, contain almost every essential ingredient for the farm, though not, perhaps, precisely in the proper quantities. They contain large quantities of ammonia. Ichaboe guano contains from eight to ten per cent.; Peruvian guano, ten, twelve, fourteen, and even sixteen per cent.; it contains, besides, phosphoric acid, lime, magnesia, potash, soda—the two latter in the same quantities, not more than two and a half, or at the greatest, four per cent. Now, as a stimulating manure, guano is a very good thing to apply to land. In all cases where land is heavy, and not apt to germinate as it ought to do, an application of guano will stimulate it to a very considerable extent, and cause the plant to germinate and rise quickly. But if you do not supply the plants with that of which the guano is deficient, for their increased growth, it will, in the long run, do more harm than good. The guano contains the chief acting part of ammonia and bone dust; but if you do not supply the others, and if the land is not capable of supplying them, you may obtain a bad result from the application of guano. It is a well known fact that the

continued application of guano is attended with bad results. In the vicinities of the parts from which guano comes, near Peru, there are places which become perfectly sterile from its use; but some of these places have been made fertile again by the application of nitrate of soda; and at the present moment there is an exchange going forward of guano for nitrate of soda in the countries which produce these substances. There are certain places in South America where nitrate of soda is found, as we find an efflorescence on the walls of new buildings. Guano is exported from one place, and nitrate of soda from another, and we find the exchange acting in the most beneficial manner. Where guano has been acting, the application of nitrate of soda is found to supply some portion of what is wanted. Guano may be considered as a sort of representative of animal manure. Again, greaves and rags, and all such things, form an exceedingly good manure. These contain large quantities of nitrogen, and are capable, by their decomposition, of giving large quantities of ammonia. They are exceedingly good for those plants which require these substances, such as wheat and hops, upon both of which they are known to produce the best effects. But the application of these alone will bring about a sterility of the soil, which is not desired by the farmer, who wishes to gain year by year, and not one year alone. Now, rags and other things containing large quantities of ammonia are very useful where mineral ingredients have been supplied to a certain extent. I have analyzed the mineral ingredients of the rag ashes, and I found that they contain 10 per cent. of mineral matter, and in that 10 per cent. is a large quantity of bone dust. The furnishing of ammonia to the soil constitutes, perhaps, one of the principal features of these manures. Now, as I before intimated, we may reckon all the animal manures—such as shoddy, horns, hoofs, trotters, rags, &c.—as acting similarly to guano. The only difference is, that the guano acts more quickly, because the ammonia is in a far more soluble state, and is capable of being carried into the soil by the first shower of rain. Now there are other manures besides these; there is bone dust or phosphate of lime. How is it that bone dust has been found such a splendid manure? Bones have been used in almost all quarters with almost unqualified results; there are very few places in this empire where they have not been found useful. I have heard of their not having been very useful on the Malm rocks—upper green sand;—I have heard of two or three cases in which they have been found of no service there; but, at all events, on general soils the bone dust has been found of great use. It is easy to account for this. I have mentioned to you the action of the rain, which is such that, supposing one pint of water to dissolve a grain per acre, 840 lbs. per acre are washed away every year. But you will recollect that, in addition to this, until very lately the plants were taking bone dust constantly from the ground, and thus providing the material for the bones of animals, without any restitution being made to the land. As for man, all his bones are, according to custom, deposited in certain places, and never return to the land; and until recently, the bones even of the other animals were never restored to the soil. The consequence was, that soils generally became impoverished in bone dust. Bones consist of certain kinds of animal matter called "gelatine" and "fat," and of a portion of mineral matter called "phosphate of lime and magnesia." It is a very singular thing that bones deprived of the animal matter act more quickly than the fresh bones. The fact is, if you take some bones and bruise them fine, and then take others and burn them, the latter acts quicker than the other. The fat of bones prevents atmospheric action on them; and you know perfectly well that unless they are soluble they are of no use. They are of no avail to the farmer if they are not soluble, and the more soluble they are the better. The burnt bones are, therefore, acted upon much more quickly than the others, though we have a loss of the animal matter. It is to Liebig that we owe the suggestion of making bones much more soluble than even burnt bones. The main fact had been long known. The common method of making phosphoric acid formerly was to take a certain quantity of burnt bones, and to mix them with a certain quantity of oil of vitriol, by which means the phosphoric acid of the bones was set at liberty. The bones consist of phosphoric acid and lime, with a little magnesia; the sulphuric acid seizes upon the lime, and forms sulphate of lime, or gypsum, and liberates the phosphoric acid. Phosphoric acid is quite soluble, as soluble as sugar.

Now that is just the thing which the mind of Liebig applied at once to land. "If," said he, "we can just do the same thing for the land, the first shower of rain will wash this phosphoric acid down the land; it will there meet with lime, magnesia, and other things, and form phosphate of lime and magnesia, but in a state of the most minute division, so that it will be acted upon by the smallest quantity of water. Now, without any exception that I am aware of, where bones and sulphuric acid have been tried, it

has been found beneficial for the turnip crop. Turnips have been obtained in abundance by the application of this manure; I have never yet heard of a failure. In almost all soils there is lime, so that the phosphoric acid will find something to neutralize it, and cannot injure the plant. Turnips find the bone dust prepared for them in the minutest state of division. This manure is also suitable to other root crops. In a general way, you export no turnips from the land; you would take more from the farm land were you to export the turnips year by year. In the latter case, you would take away such a large amount of potash and soda, and other things which the turnips require, and which the bones do not give, that I think you would find it very difficult to grow them year after year, without a very considerable application of other manure. That question may be settled very easily; but in the case of the ordinary turnip crop, it seems pretty well ascertained that if you apply phosphate of lime, you can grow the turnip; and every one knows that if you can grow the turnip you can get the three subsequent crops. Now, with respect to lime, that is an excellent manure. In the analysis which I made of the hop, I found lime, more particularly in the coarser hops. In all cases, I find that lime has done good to the hops, but great care ought to be taken in applying it. I have known parties apply it in a way which was certain to do mischief; they have applied it with manure; and when lime is applied with manure, it must drive off all the ammonia contained in it. I have here samples of manures containing ammonia; there is some beautiful Peruvian guano—exhibiting a small glass bottle containing the substance. I will just show you the effect of mixing lime with this. A friend of mine in Kent, who had found lime good for his hops, having heard that guano was a good manure, mixed the two together, and thus drove out all the ammonia. My opinion is, that the best plan is to apply the lime first to the land, and the manure afterwards, so as to let the lime become what is called mild by the action of the air, and after that to apply the manure."

Scraps for the Economical.

If you would avoid waste in your family, attend to the following rules, and do not despise them because they appear so unimportant—"many a little makes a mickle."

When ivory-handle knives turn yellow, rub them with nice sand paper or emery; it will take off spots and restore whiteness.

Silk pocket handkerchiefs and deep blue factory will not fade if dipped in salt water while new.

Spots in furniture may be easily cleaned by rubbing them with a flannel wet with the same thing that took the colour—if rum, wet the cloth with rum, &c.

Lamps will have less disagreeable smell if you dip the wick yarn in strong hot vinegar and let it dry.

Clean a brass kettle before using it for cooking, with salt and vinegar.

If you wish to preserve fine teeth, always clean them thoroughly, after eating your last meal at night.

Linen rags should be carefully saved; they are useful in sickness; if dirty or worn, wash them or scrape them into lint.

Vials which have been used for medicine, should be put into coal ashes and water, boiled and suffered to cool before rinsed.

Cotton, wet with sweet oil and paregoric, relieves the ear-ache very soon.

L. M. Child.

Improvement of the Smaller Fruits.

What can be done for the raspberry? Perhaps less than for most other kinds of small fruit. It is not clear that the flavor of the raspberry could be at all improved. There is probably not much to be gained in the way of imparting to it variety of appearance. The best varieties at least possess the property of size, in a considerable degree; and though this might be enlarged upon, yet it does not seem to strike one as a very necessary change; some of the present varieties, when well grown, may indeed be considered large. In what way, therefore, could our present race of raspberries be improved on?

There does seem to be one point at least on which an improvement might be wrought. Notwithstanding that the fruit is held in such universal estimation, the raspberry season is but of short duration. True, there is a double bearing variety, as it is called, which fruits later than the other kinds: this is valuable, so far, in itself: but we also take it as the earnest of something further. It is, in fact, just the thing to work with; and we have no doubt that a little well-directed energy would very shortly produce from it varieties which would materially prolong the raspberry season.

What can be done for the gooseberry? That the gooseberry cannot resist the power of improvement to which we are referring, there is ample evidence in the production of the prize varieties for which Lancashire is famous. But the Lancashire growers breed only for size; that quality they have indeed

stamped upon the fruit in a very remarkable degree; but this of itself is not enough for the dessert, nor yet for the culinary department; quality, not less than quantity, is a necessary recommendation in the garden of the connoisseur. Gooseberry growers may, therefore, busy themselves to impart the flavor of the choicer kinds to the large show varieties that are now chiefly raised; and in doing this, they will have effected an improvement worthy of the effort. But why not also prolong the gooseberry season? It is fully short enough. Some of the early kinds might, in time, be pushed a little nearer the vernal equinox than we now have them; and this early race would not be injured by increased size, and more concentrated flavor. Then, again, with the late varieties. Might not new forms, later than any we now possess, be obtained! And would not, in this case also, additional size constitute a further improvement! These results are only waiting the well-directed efforts of some zealous individual to meet a full realization.

What can be done for the currant? We see no reason why bunches of currants should not, for size, bear a closer comparison than now, with bunches of grapes. The thing is by no means so ideal as it might at first seem to be. Were the berries double the size of those of the largest of our present varieties, and these, borne, as we now see them, occasionally, from a dozen to a dozen and a half in a bunch, we should have a very respectable approach, if not to the clusters of Eschol, at least to the more ordinary range of our cultivated grapes. Some of the varieties bear fruit which is less acid, and less woody-tasted, than that of others: these qualities would, of course, be required in the new and improved series. Then, again, currants are a fruit which it is often considered desirable to keep for some time—some months indeed—on the trees. It would be worth attempting to obtain varieties which would hang better than our present varieties do. On the subject of improving the present varieties of currants, we have recently met with some judicious remarks by Mr. Tomlinson, in the *Midland Florist;* and as they bear directly on the subject before us, we will introduce them here:

"I have for years been an extensive cultivator of currants, selling the produce in the large town in my immediate neighbourhood, and I find that, though the red grape is a large and fleshy fruit, still it ripens unkindly, which is a great drawback to its more extended cultivation. The old long-bunched red is, with me, far preferable; but I see no earthly reason why this fruit might not be improved in a very great degree. Would it not be possible to raise a '*currant show*,' on the principle of the Lancashire gooseberry shows? and if this could be carried out, and an inducement given to raise fresh varieties from seed, I make no doubt that we should speedily have currants double the present size, and much longer in the bunch; and I am sure that nothing would pay better than improved varieties of both black and white, as well as red ones. The plant comes early into bearing, and any improvement on the old sorts would speedily supersede them, as the black Naples is now displacing the black grape.

"I heard of several new sorts, which I purchased last autumn, and am now growing them, to test their respective qualities. Of course, I cannot, the first season, decide, as I should wish to have my plants well established. The sorts purchased are:

"1. *The Gondouin Red.*—A continental variety, with peculiarly red wood and large foliage, very distinct in habit.

"2. *The Cherry Red.*—Also from the continent. This has extremely large foliage, and stout shoots.

"*May's Victoria.*—This, I see, has been mentioned in several publications as a large and very prolific variety, and would, doubtless, be a fine sort to save seed from.

"*Haughton Castle* (Red).—This was raised in the far north of England. Its character to me was *large and late.* It appears to be an erect grower, and has abundance of fruit, which is of good flavor, though, from the circumstance of the trees being planted only last autumn, not so large as when they become established.

"5. *Goliath.*—I have also received with this a first-rate character as a *good* red currant; and if any induction is to be made from its luxuriant mode of growth, I should fancy it would respond to its name.

"I have selected some of the largest berries on both Goliath and May's Victoria, the seeds of which I intend to sow; and should these prove large, I will again sow from the largest. By this means, in a series of years, I hope to arrive at the height of my ambition, namely, to produce currants as large as small marbles. Now I am confident there is nothing Utopian in all this; and I am certain that, if a few persevering individuals were to devote their attention to the improvement of the currant, it would be attained in less than ten years."

Once more we may state—and we repeat it, because it is a rock on which very many split—that experiments of this kind are the better for being conducted on a limited scale. One case of cross-breeding, carefully wrought

out, on correct principles, is more pregnant with really useful and valuable results, than a thousand promiscuous ones, or a hundred carelessly prosecuted; while, of course, the labour and trouble attending the experiments becomes lessened a hundred or a thousand fold. Those, too, who have time and opportunity for more extensive operations, should take care to multiply carefully—instead of carelessly—conducted experiments.—*Gardener's Journal.*

Agriculture in Scotland.

To the Editor of the Western Times:—

Sir,—A few weeks since I troubled you with an account of the method adopted in the southern counties of Scotland, of paying farm labourers, &c.; therefore have again taken the liberty of trespassing on your valuable columns, by giving your agricultural readers some idea of the manner in which farming operations are conducted in the Lothians of Scotland or counties of Haddington, Edinburgh, and Linlithgow. I shall not enter minutely into details: those who wish to be more fully acquainted with Scotch farming should visit the country; and whether they do so on a tour of profit or amusement, they will be most amply repaid.

The Lothian farms consist each of 200 to 500 Scotch acres, the Scotch acre being one-fourth larger than the English statute acre, therefore I shall limit my remarks to the current acre of the Lothians. A farm of 300 to 500 acres is by common consent the utmost which one farmer is thought capable of managing. The farm buildings are small, compact, and situated near the centre of the farm, and have always a steam engine of six to eight horse power for threshing, and other purposes. At the entrance of the farm-yard is the dwelling of the grieve, or bailiff; for every farmer keeps a bailiff, who superintends everything on the farm, and is cognisant of everything that goes in or out of the farm buildings. I found the grieves universally clever, acute, and sensible, and their minds open to what was passing in the world beyond the limits of their own immediate neighbourhood: this speaks well of what education has done for the peasantry of this part of Scotland. The farmers themselves are men of much superior education, manners, and style of living, to the equally wealthy ones of the farming counties of England: they are all of most hospitable habits. Few of them are without a handsome phaeton for the use of the female members of their family. One feature throughout the Lothian farms may be remarked—*a great uniformity in the quality of the crops.* Not, as elsewhere, here a good farmer and there a bad one, here a failing crop and there a middling one, and here again a finer one, but nearly all the same; showing that farming is there reduced to a science, leaving nothing uncertain but the seasons. The farms are divided into fields of 20 to 50 acres each, the hedges are clipt low and thin, and the ditches covered in, so as to occupy as little space as possible. There are no trees in the hedge-rows, and few furrows in the land; and thus, between one thing and another, the entire area of the farm is made productive, and the expense of fences and gates is reduced to a minimum. Another thing worth noting is, that permanent grass, either as meadow or pasture, is unknown, or nearly so: the only hay or pasture is derived from artificial grass sown in the regular rotation of crops. The rent of the Lothian farms is from £3 10s. to £7 per acre, and these high rents the farmers not only pay *but thrive upon.* They are enabled to pay these rents and thrive, partly *by the heavy crops arising from skilful cultivation*, and partly by *economy of management* in every department. Actual wages, however, are as high in England, viz:—10s. to 11s. a week for a common labourer, 12s. for a ploughman, and 9d. a day for women—ten hours to the day. As to the great amount of produce, it must be remembered that *all the land is under the plough.* Five quarters of wheat, ten of oats, seven of barley, and from thirty to thirty-five tons of turnips, are reckoned a good average to the acre.

Economy of management is shown in the division of employment confining the attention of the farmer to as few points as possible, in a due rotation of crops, so as to have no land lying idle or unproductive, and in the use of machines and horses instead of manual labour, whenever circumstances admit of it.

All the Lothian farms are held on nineteen years' leases, and the rents wholly or partly corn rents, rising and falling with the yearly fluctuations of the price of corn. Without a long lease, the farmers would not lay out their capital in the free manner they now do, and with a long lease they feel independent of their landlords, more as if they were the actual proprietors. In consequence of this independence and part ownership, as it were, of their farms, men of much superior rank, education, and capital engage in the business of farming than is the case in England, or, indeed, *than ever will be the case* in England under existing circumstances.

The foundation of all improvements in the Scotch farming is the system of *thorough*

draining; and so essential is this considered, that most of the land is deemed unworthy of being farmed at all until it has undergone this operation. The drains are made at regular distances, from 15 to 30 feet or more apart, according to the nature of the soil, and from 24 to 30 inches deep. The general course of cropping in the Lothians is—wheat after summer fallow; turnip, barley, seeds down for one, two, or three years as circumstances vary; oats. When the land is very stiff, a crop of beans and peas is taken.

I have thus endeavoured to give, in a somewhat unconnected way, the results of my observations on the Lothian farming, where high rents, high profits, and a well paid and contented peasantry are all seen combined in a pleasing union. It is an interesting question, but one I am not going to enter upon, how this improved system of cultivation can be introduced into England? I am inclined to think the superior and more practical education of the Scotch has been at the bottom of the improved state of things. Education has given the knowledge which has enabled them to apply their capital with success, and to extract from the land owner the long lease, which enables them to invest their capital with safety as well as success. Trusting these few remarks will be found worthy a place in your paper,

Believe me, yours truly,

R. S. Hews.

Broadclist, February 17th, 1847.

Grafting on the Mountain Ash.

The grafting on the mountain ash stock has been practiced for the last twenty years, and about six or seven years ago was brought prominently before the public in several of the English papers. The result of every experiment went to prove that the process on the mountain ash would only succeed for seven years, but even in that time the produce amply repaid for the labour, and that all that was necessary was to re-graft and the produce was renewed. Experiments were also tried upon the common ash, the willow and others, but the thorn was the one that gave the greatest satisfaction, for on it every variety of fruit succeeded. The mountain ash and the thorn are also grafted to a good extent in Nova Scotia with perfect success. The thorn can be seen there with pears, cherries and apples upon the same stock, and the farmers in that province go round and graft all the thorns upon their lots. To what an extent could this plan be carried in the States, for not a single graft need be wasted when *stocks* can be found in such plenty. In England where stocks are plenty—the quince stock is generally preferred for pears, for this fruit does not succeed so well on its own stock.

The pear delights in deep vegetable mould *interval* soil by the sides of rivers, or in low well drained situations, for being of vigorous growth it requires much and also regular moisture, or the fruit falls off, which makes the roots always seek a low medium of soil, and hence become a series of *tap* roots. Now, where the soil is suitable, make a good bed of broken bricks, or stones, three feet thick, and covered with one foot of soil, before the root of the tree is placed on it—spread out the roots within six inches of the surface of the ground and then cover in; then mulch, and cover that with a layer of soil—fix one or more stout stakes by the trunk of the tree and fasten, but it will soon hold itself. Always take up pear trees with as much root as possible and trim the extremities of the fibers with a sharp knife. When a large tree does not indicate fruitfulness or has never borne fruit—some drive a very large nail into the trunk about its centre, and another nail in the transverse direction, with perfect success. The formation of fruit spurs indicates weakness in the tree and is caused by arresting the circulation of the sap—thus bending down the branches causes the *growing buds* to become *blossom buds.* A growing bud is longer and flatter than a blossom bud. I applied this process last week to a beautiful twelve year old golden pippin apple tree, which had never showed a blossom or blossom bud. Heading down causes laterals to spring forth, and then there is no end to pruning.

Pear trees should have the shoots of all kinds, not required for next year's bearing, clean cut away, for the excess of shoots which they produce in profusion, if all retained, even in a shortened state, will surely injure the tree for producing fruitful buds. To keep a tree in heart and fresh,—bore an auger hole about one foot from the ground and half way through—fill the hole with sulphur and cream of tartar, and plug it up—then whitewash as usual.—*Boston Cultivator.*

An Extensive Farmer.—John A. Sutter, of New Helvetia, California, advertises for two threshing machines for wheat, of a size and sufficient power for a crop of *forty thousand bushels!* He is one of the largest farmers in the world, and supplies the Russian traders with grain and provisions.

For the Farmers' Cabinet.

The Sailor—or the Value of a Potatoe.

In the Farmers' Cabinet for last month, is re-printed an article by the late S. G. Perkins, of Boston, on the merits of the different varieties of pears; and in illustration of the diversities of tastes in relation to fruits, an anecdote is related of a sailor, who, just from a voyage, had chosen from a rich variety of fruits in Boston market, a green cucumber, and while greedily eating it, bitter end first, said to one of the amused spectators, "If you will believe me, sir, it is the first I have tasted this year." Now, Jack thought, by this remark, he fully explained to the bystanders the ground of the singularity he knew he was exhibiting to the "landsmen;" and so he did, for those about him were somewhat familiar with the habits of the sailor and his wants. But the editor of the Cabinet has a note upon this anecdote, which shows conclusively, I think, that he is *not* familiar with them; and I feel quite sure, if at all successful in my attempt to explain the matter, I shall receive his thanks. "We should rather incline to call this an instance of the sailor's coarse *appetite*, than his taste." This is the beginning of the note, what follows being a just criticism on the misapplication of the word taste, and not explanatory of the part quoted.

To the words "*coarse appetite*," I object, as implying moral degradation, or, vulgar caprice; whereas, Jack was in no degree accountable for his peculiarity; for his taste was depraved or diseased by circumstances, over which he had no control; or, rather, his blood was vitiated, his body predisposed to disease by a long voyage; and the peculiar appetite, like the instincts of the lower animals, was the pointing of unerring Wisdom to the best attainable remedy; and I am sure the editor of the Cabinet would not call anything proceeding from this source, "common or unclean."

It is difficult for him who has all his life breathed an atmosphere teeming with the emanations of the fresh earth, and who has known no want of its recent products upon his table, to conceive the feelings, the longings of him, who for six successive months has not been gladdened by the sight of land; the salt air, the salt spray, "salt junk," and worm-eaten bread, with water that has long ceased to be pure, his sole companions and support.

I believe the whaling fleet from the United States alone, employs about 10000 men; many of them are gone from home four years, touching at ports every four to six months, for such fresh water and vegetables as the port may furnish; but as the "fishing grounds"* are almost wholly intertropical, such vegetables as they obtain keep but a short time; hence the condition of the men on these long voyages, is often such as I have represented; only sometimes they are on a short allowance of this hard fare. No long time elapses under these circumstances, before nature begins to succumb; scorbutic symptoms arise; languor, debility, bleeding at the mouth, and dropsical effusions occur; and when the deprivation is greatly protracted, it is not unusual to find a considerable part of the crew off duty from this cause. The sailor who prides himself upon his alacrity in the performance of his rugged offices, alow and aloft, by day and by night, in fair weather and foul, looses his strength and his ambition; he has no pain, but his feet swell, his appetite for such as the ship affords, fails, and he moves languidly about; a few more weeks or days, and a watery blood flows from his mouth, his breathing is laboured; effusion of water is taking place in the chest; he can no longer go aloft, and soon he goes below, never to re-appear on deck, unless timely relief comes to his aid. All these symptoms are unattended with pain; but they are preceded and accompanied throughout, with the intensest longing for *fresh vegetables;* and these,—with an exception or two not here worth naming,—are his only remedy; with them he lives, without them he dies. The pointings of nature, in this case, are both curious and instructive; the lemon, the melon, and all *fresh* fruits, are acceptable and useful; but the most urgent call is for the cruder vegetables, as the potatoe, the cabbage, &c., and this in their crudest state, uncooked—raw! Yes, the Irish potatoe, raw!! Every sailor who has been so placed, and every physician who has been much conversant with their diseases, knows that these are the very remedies, and this the very mode of administering them, that most speedily and most surely restores the prostrated man to health.

Now, a ship with one-fourth of her crew below, and few of the remainder quite well, "puts away" for the land; but she is six weeks, good sailing, from the nearest port, and some of her sick must be buried in the ocean without more timely relief. How anxiously does every eye watch for a passing ship—no common occurrence in the mid-Pacific—with a hope that she may be late from some haven, and yet have a few fresh vegetables. The ship is hailed, and—what is more precious than silver or gold—a few *potatoes* are obtained—the captain is the

* Alias, fathomless Oceans.

almoner; and he who has seen, in the "far West," a herd besiege the kit of salt, can conceive of the scene on board this lucky ship. "Eighteen on deck, and six below, all told; one a piece, boys, for the well; and two each, for the sick, daily." "All right, sir." Quickly the day's allowance is served, and closely does the hard hand grasp the prize; but we will go below—well does he know—that sailor in his narrow "bunk," with the broad bust, well bronzed in the sun, powerless, but not emaciated—well does he know the value of the gift, and he is content to use it frugally—if too exhausted to gnaw the sweet morsel, a shipmate scrapes a little with his knife and places it upon his tongue; if we may believe the oft-repeated declaration, no fruit, however luscious, no viand, however savory, could be half so palatable. As slowly he is served with one morsel after another—without drink, without condiment,—he seems to breathe more freely; and childish as himself thinks it, his emotions cannot be restrained; they are tears of joy and gratitude; a gratitude not confined to the hand that feeds him, nor yet, to the noble captain of the passing ship, who, from his nearly exhausted store, has bestowed the half upon them whose need was greater than his; but rough as is his exterior, the heartfelt offering ascends to the bountiful Giver.

Ask this man why he did not cook his potatoe, as other folks do, and as he himself ordinarily does? he will give a smile of pity for the ignorance that could prompt such a question, and reply, that it would be rendered insipid, lifeless, spoiled; and he is doubtless right; he has obeyed the instinct within him, and the effect, if it were not so common, would be truly marvellous; he has eaten a few crude bulbs, fresh from the earth, and is made whole.

Thus a single bushel of sound potatoes, yes, often a less quantity, has rescued a ship's crew of twenty-five to thirty men, from the most imminent peril. How wonderful is that Providence that changes our very tastes, our appetites; rendering that delicious to us, which is ordinarily unpalatable or disgusting, and thus guiding, equally the simple and the wise, to the use of the means our infirmities require.

The sailor is my friend, and I would not see him wronged; yet it must be confessed his tastes are not always thus pure—he will cheerfully give his silver dollar for a single Irish potatoe in time of need; and with equal alacrity, the same sum for a twist of "Negro-head:" not unfrequently, also, when on shore, he is induced by the tempter to bestow his money for gratifications less innocent—still, he is a man of noble impulses, more sinned against than sinning; and could we realize his peculiar privations and perils, I am sure *one* good effect would be, to kindle our dormant sympathies in his behalf; and *another*, to inspire us with a more lively sense of gratitude for the unceasing bounty that crowns our board. INDEX.

In justice to himself as well as to the editor of the Horticulturist, the editor of the Cabinet may remark, that the note referred to by Index, was not his, but was copied from the Horticulturist, with the matter in the text. Index has certainly made a very pleasant as well as instructive article of his criticism. We heartily wish, that for the reputation of our paper and the benefit of our readers, his visits were not so "few and far between."—ED.

EXTRAORDINARY CURE OF A PUERPERAL FEVER IN A COW.—The following case may prove interesting to our agricultural readers at this season: "On the 1st of March one of my cows calved, and appeared afterwards to be quite well. On the following morning, to my surprise, she was down and unable to rise, with loss of appetite, and quite unconscious of everything; ears and muzzle quite cold, her head turned back to her side, and to every appearance a speedy death was inevitable. I sent for C. S. Green, veterinary surgeon at Pershore, who, on his arrival, pronounced it a hopeless case, but wished to try the effects of a compound of ether, with cathartics, which I agreed to, and by the repeated administering of those medicines, in thirty-six hours after its being first administered she got up and began feeding. On the eighth day she was pronounced to be quite well. Having lost a case four years ago by the same disease, which was medically treated, and from knowing it to be a very fatal disease, in future I shall be enabled to have recourse to a preventive."

WILLIAM DOUGHTY,
Kinnersley, near Severn, Stoke.

DRAINING.—H. Colman, speaking of the evils of *stagnant* water in the soil beneath the surface, says: "plants produced on a very wet soil, are unpalatable, innutritious, and insubstantial. Animals fed upon them always lose condition, and the manure of animals so fed is almost worthless. I saw this strikingly illustrated in the magnificent park of the Duke of Bedford, at Woburn Abby. Here there were many spots where the grass was luxuriant and abundant, on account of their excessive dampness, and which were entirely neglected both by the sheep and the deer; but wherever these places, once wet, had been thoroughly drained; they became the favourite resorts of these animals, and were fed as closely as possible."

Hymn of the City.

BY WILLIAM C. BRYANT.

Not in the solitude
Alone may man commune with heaven, or see
Only in savage wood
And sunny vale the present Deity;
Or only hear his voice
Where the winds whisper and the waves rejoice.

Even here do I behold
The steps, Almighty!—here, amidst the crowd
Through the great city rolled,
With everlasting murmur deep and loud—
Choking the ways that wind
'Mongst the proud piles, the work of human kind.

Thy golden sunshine comes
From the round heaven, and on their dwellings lies,
And lights their inner homes—
For them thou fill'st with air the unbounded skies
And givest them the stores
Of ocean, and the harvest of its shores.

Thy Spirit is around,
Quickening the restless mass that sweeps along;
And this eternal sound—
Voices and footfalls of the numberless throng—
Like the resounding sea,
Or like the rainy tempests, speaks of thee.

And when the hours of rest
Come, like a calm, upon the mid sea brine,
Hushing its billowy breast—
The quiet of the moment, too, is thine;
It breathes of Him who keeps
The vast and helpless city while it sleeps.

Report of the Committee of Arrangement of the Philadelphia Society for Promoting Agriculture.

The committee of arrangement appointed to prepare for and attend the annual exhibition of this Society, submit the following Report:

The exhibition was held at the Lamb Tavern on the Lancaster turnpike, one mile from the Schuylkill permanent bridge, on the 14th and 15th of October.

The committee had previously made an agreement with Mr. Gheen, the proprietor of the premises, to have the ground—about two acres—enclosed with a substantial board fence of nine feet in height. As the Society for several years back had expended large sums in payment of premiums and other matters connected with agricultural improvements—and the committee being anxious to extend its sphere of usefulness, resolved to adopt the plan, so successfully adopted in some of the neighbouring States on the like occasions, that of charging a small sum for the admission of visitors, not exempting their own members. The result proved to be quite satisfactory—but little objection was made to the payment of the small amount demanded, by any, whilst nearly all of the large concourse of persons who visited the ground, were gratified by giving their aid in that way to the cause of agriculture.

In place of stalls for cattle, strong posts were placed in the ground at the distance of eight feet from each other, along three sides of the lot, to which a wide board was nailed, leaving an avenue of ten feet in width between the range of posts and the outside fence, forming a secure and pleasant promenade for visitors, and affording a fine view of the animals exhibited.

On the west side numerous pens were erected for sheep and swine; a shed for the protection of the agricultural products, places for the exhibition of poultry, &c. The gate by which visitors entered the show ground was about midway on the west side, on the left of which was erected a temporary building for the accommodation of the committee of arrangement and the officers of the Society.

The implements of husbandry were placed on an elevated part of the lot a little north of the centre, leaving a convenient portion of the ground for the exhibition of horses.

The gateway for the admission of the various animals and implements, &c., was on the north, bordering the turnpike leading to the wire bridge.

Before nine o'clock, A. M., the committee were busily engaged on the ground, directing the movements of the animals and assigning places for each, and arranging the implements and produce; whilst cards were being furnished by the Secretary with the names and description of the animals and implements, which were properly affixed to each. By eleven o'clock all was completed, and the judges appointed to examine the various animals and articles headed by their chairman, commenced the performance of their duties.

By twelve o'clock the horses were to be seen in motion on that part of the ground assigned to them, attracting the attention of a large number of persons; they numbered about twenty in all of the different breeds of that noble animal. The thorough bred horse and roadster, the sturdy and active Canadian, and the Norman horse were most conspicuous.

The show of cattle was good, consisting of near one hundred head. The stately and high bred Durham, the beautiful Devon, and their crosses attracted great attention. Also

the Alderney, Scotch and Kerry cows, many of each showing great milking properties, and affording the strongest evidence of their superiority over the unimproved stock of the country.

Several pairs of fine working oxen were exhibited, bred in the States of New York and Connecticut; they were well trained, and their performances were highly satisfactory. The Devons attracted great admiration, being nearly of the same size, form and colour.

The show of sheep consisted of the Leicester, Cotswold, and Southdown, and their grades; their appearance exemplified the most convincing proof of their superiority over the common breeds, for both plenty of wool and fine mutton.

The swine were principally of the Chester county breed, large and well formed, and having the appearance of easy keepers. Some good grade Berkshires were also there.

There was a handsome display of the different breeds of domestic fowls, such as Jersey Blues, Malay, and other large breeds from India, with the beautiful Poland and Mufflers.

The display of agricultural products, both in quantity and quality, far surpassed any thing of the kind ever seen at any former exhibition of the Society, the specimens both of grain and roots, were large and beautiful —the latter will be found to be highly valuable food for cows and sheep during the winter season. The implements of agriculture were numerous and of excellent construction; wheat fans, straw and stalk cutters, corn shellers, drill machines, corn planters, &c., were all calculated to facilitate the operations of the cultivator of the soil and to lessen his labour.

The character of the Philadelphia butter was well sustained by the specimens presented for examination, they were of superior quality.

The trial of ploughs and ploughmen came off on the second day of the meeting. A suitable piece of ground having been obtained near by, the portions laid off for each one contained about the one-eighth of an acre. After the distribution of lots the order was given to commence the trial,—all went on steadily, without difficulty or confusion. The work was completed in about half an hour, and in a manner highly creditable to all engaged. The ploughs were generally of the most approved patterns, and the skill of the ploughmen elicited the admiration of the numerous spectators assembled to witness the most interesting portion of the exhibition.

Before two o'clock the committees had prepared their reports and placed them in the hands of the President, A. S. Roberts, who addressed a few remarks by way of encouragement, to farmers to persevere in so meritorious a cause; the reports were read by him in the presence of several hundred persons, announcing to the successful competitors the premiums assigned to them—a copy of which is appended.

Perhaps on no former occasion has the award of the different committees been received with greater satisfaction; the unsuccessful candidates evincing the best and most liberal temper, and a determination to make another trial at the next annual meeting.

The premiums offered by the Society on this occasion, amounted to more than six hundred dollars.

At three o'clock the members of the Society present, with the judges and a few invited guests, amongst which were some of the distinguished gentlemen of the editorial corps of the city and county, sat down to a most excellent dinner provided for the occasion, by Mr. John Gheen, of the Lamb Tavern. After the removal of the cloth, addresses were delivered by the President, Mr. Roberts, M. M'Michael, Esq., Professor Robert Hare, and others, all of which were listened to with the greatest attention, and elicited the hearty applause of all present.

Among the large number of persons in attendance at the exhibition, were many distinguished farmers from our own and the neighbouring States. Old Virginia was also represented by that ardent and honoured friend of agriculture, General W. H. Richardson, who expressed his high approbation of the articles and animals exhibited.

The whole affair passed off in a manner highly creditable to the Society, affording the greatest encouragement to persevere in a cause in the success of which the comforts and happiness of the human family are chiefly dependent.

In conclusion, it is to be hoped that the day is not distant when every farmer will be convinced that he would be benefitted by becoming a member of an Agricultural Society, and a subscriber to an agricultural paper.

Robert T. Potts,
Isaac W. Roberts,
A. L. Elwyn,
George Blight,
Aaron Clement,
David Landreth,
David George,
Dennis Kelly,
Manuel Eyre,
A. S. Roberts,
Committee of Arrangement.

Philadelphia, Nov. 3, 1847.

The Agricultural Fair and Cattle Show.

Yesterday, October 15th, in pursuance of notice given, the annual exhibition of the Philadelphia Society for promoting Agriculture again met at the Lamb Tavern, on the Lancaster Turnpike. The attendance of farmers, agriculturists, and others who take a deep interest in all that concerns agriculture, farming, the feed of cattle, &c., was large, though not so great as last year. The horses were excellent, of the best breeds, and commanded general admiration. Mr. R. J. Potts, of Montgomery county, exhibited some splendid specimens of oxen, as did also Mr. Blight, of Philadelphia county. There were several fine specimens of swine of various breeds exhibited, all of which were spoken of in terms of exultation on account of their great weight, singularity of appearance and cleanliness. Mr. B. Hickman, of Chester county, Mr. James Ezray, of Blockley Township, Mr. H. J. Helmbold, of the Pennsylvania Hospital for the Insane, Chester county, and Mr. Robert Green, Chester county, had some admirable specimens of various herds on exhibition.

Sheep.—There were several capital specimens of various breeds of this animal shown; amongst the rest the following: Southdown, Bakewell, and mixed blood. Of those who contributed their stock may be mentioned, Mr. John Johnson, of Montgomery; Mr. John F. Thurlon, Mr. D. Robinson, Mr. John Worth, Mr. Aaron Clement, and Mr. Isaac Newton. There were some splendid specimens of the Durham, Devonshire, and Alderney bulls and cows, and also of the American breed of the same cattle.

With regard to agricultural implements, we may mention that the assortment was tolerably large; Mr. D. O. Prouty, of this city, alone deposited about forty specimens of implements, as fanning mills, a corn sheller, hand corn mills, seed planters, threshing machines, ploughs, &c. Mr. E. Chandler, of Market street, also exhibited a recently patented machine for grinding corn. There was a great variety of spades, shovels, hoes, forks, &c.

A variety of vegetables and grains were also exhibited—cabbages of enormous size—mammoth beets, and huge turnips. There were some rare specimens of Indian corn and sweet potatoes—being the finest and the largest we had ever seen. Those who contributed these articles were Mr. Isaac Newton, Delaware county; Mr. George Blight, of Philadelphia county; Mr. R. G. Potts, of Montgomery county; and Mr. J. J. Taylor. Some fowls of very rare and beautiful breeds—the Muffler and Marraboo, were also exhibited, which drew forth marks of admiration.

About ten o'clock in the morning, the various competitors for the premiums offered by the Society, to those farmers who should exhibit the most skill and excellence in ploughing, came off in a field, the property of John Hare Powell, Esq., at a short distance from the Lamb Tavern. Eleven persons, ploughmen, tried their skill by ploughing each a quarter of an acre of ground, either with two horses, or two or four oxen, attached to ploughs of various constructions. Great ability and rapidity were generally exhibited, and much praise was given to those who had most distinguished themselves. Besides the judges in attendance, there was also several hundreds of agriculturists, farmers, scientific characters and others, as well from the country as from the city and county of Philadelphia.

At two o'clock, the judges and the committee on premiums met, and announced to the people assembled within the enclosure, where the fair was held, the premiums which they had come to the determination to award. Owing to a want of space in our paper of this day, we are compelled to defer the publication of them until Monday next. At three o'clock, the gentlemen comprising the committee, together with the judges, and a large number of other gentlemen, sat down to an excellent dinner provided by the landlord of the Lamb Tavern; and before the dusk of the evening they separated, after having passed a few agreeable and instructive hours together.—*Pa. Inquirer.*

Premiums.

Horses.—The committee on horses respectfully offer their report:

For the best thorough bred stud horse, they assign the first premium to John Sharpless, for his horse Valentine, $10.

Second premium to Austin Mellor, for his bay horse, Colman's Tour.

FOR THE FIELD AND ROAD.

The first premium they assign to Evan Lewis, for his iron grey, Jackson, jr., $8.

Second premium to Elisha and George Worrall, for their grey stud horse, Fagdown, Colman's Tour.

For the best thorough bred brood mare, they assign to W. W. Barbour, for his bay mare, Kitty Stanley, $8.

For the best mare, adapted to field and road, they assign the second premium of Colman's Tour, to Samuel S. Richie, for his bay mare, Jenny Blackburne.

For the best horse colt between two and four, they assign the first premium to Morris

Penrose, for his bay stallion, Sir Harry, $6

Second premium to W. Blackburn, for his brown colt, Dread, Colman's Tour.

For the best filly or mare colt, between two and four, they assign the first premium to W. W. Barbour, for his bay filly, Modesty. $4.

Second premium to Clinton Smedley, for his grey filly, Fagdown, $1.

For the best filly or mare colt, between one and two, they assign the first premium to W. Blackburn, for his dark bay filly, Speedwell, $3.

A. L. Elwyn,
James Torbert,
Joseph C. French,
Jacob Peters.

The horses for the field and road were this year more than usually good, indicating judicious and careful breeding. The committee deems it due to those gentlemen who exhibited the horses of this class, to state that in their opinion all are deserving of public patronage. The duty devolved on them of making a selection, and where the merits of the several animals were so nearly equal, this required a very cautious exercise of judgment. They include in these remarks the two horses Trafalgar and Black Prince, that from coming to the ground too late, were, by the regulations of the Society, excluded from competing for the premiums, as well as Mr. Eyre's fine thorough bred stallion, Mingo Junior, who was also ineligible, from having already taken the first premium at a former exhibition of the Society.

October 14th, 1847.

Cattle over two years old.—The committee appointed as judges of neat cattle over two years old, after having examined the different animals submitted to their view, award premiums as follows, viz:

For the best Durham bull over three years old, to Dennis Kelley, for Valentine, $10.

For the next best to Isaac W. Roberts, for Sir Robert, Colman's Tour.

For the best Durham bull, between two and three years old, to John Jackson, for Sugnan, $8.

For the next best, to John R. Suplee, for Tom Thumb, Colman's Tour.

For the best bull of Devon blood, to Judge Longstreth, for Doctor, $8.

For the next best to Manuel Eyre, for Melbourne, Colman's Tour.

Ayrshire bulls, none offered.

For the best Alderney bull, to Benjamin R. Suplee, for Jerry, $8.

For the best Durham cow over four years old, to John H. Andrews, for Pocahontas, $8.

For the next best, to J. W. Roberts, for Flora, Colman's Tour.

For the best Durham cow, between two and four years old, to J. T. Huddleson, for Fanny Grey, $8.

For the next best, to Samuel Cooper, for Lady Jane, Colman's Tour.

For the best Durham heifer between two and three years old, to John Jackson, for Victoria, $6.

For the next best, to Samuel Oven, for Jess, Colman's Tour.

For the best heifer of mixed breed, between two and three years old, to John H. Andrews, for Betsy, $4.

For the next best, to Dennis Kelley, for Lady Montgomery, Washington's Letters.

For the best cow of Devon blood, to W. W. Roberts, for Lady Jane, $6.

For the next best, to Manuel Eyre, for Dewdrop, Washington's Letters.

For the best Alderney cow, to John R. Suplee, for Jenny, $6.

For the best cow of mixed blood, to Henry J. Helmbold, for Beauty, $4.

For the next best, to Owen McCue, for Jenny, Washington's Letters.

For the best cow of native breed, to Josiah Barnett, for Nell, $4.

For the next best, to Samuel Cooper, for Sally, Washington's Letters.

For the best yoke of working oxen, reference being had to their performance, to Mr. G. Blight, $10.

For the second best do., to J. W. Roberts, $6.

For the third best do., to R. T. Potts, Colman's Tour.

For the best fat steer, to David S. Bunting, $6.

The committee noticed a beautiful Scotch Mountain cow, exhibited by Mr. Samuel Rogers, of Blockley, and also one by Joseph Kirkner, both pretty animals, displaying good milking properties. A Kerry cow was shown by Mr. J. S. Huber, showing prime points and good properties. Mr. H. also had several other good animals on the ground.

Many other fine cattle were exhibited that were worthy of premiums, and the committee regret that they had not more to bestow. Many of the spirited farmers of the adjoining counties of Delaware, Chester, and Montgomery, have displayed a most praiseworthy evidence of their determination to continue the improvement of their stock.

Thomas S. Woodward, *Chairman*,
Benj. Serrill,
John Hibberd,
David George.

Cattle under two years old.—We the undersigned, a committee of the Philadelphia Society for promoting Agriculture on neat cattle under two years old, report as follows, viz:

For the best Devon bull, between one and two years old, to Joseph Kirkner, for Judge, $4.

For the best Durham bull calf, under one year old, to John H. Andrews, for Montezuma, $2.

For the next best to the Pennsylvania Hospital, for bull Sultan, $1.

For the best Alderney bull calf, under one year old, to John R. Suplee, for Oregon, $2.

For the best bull of mixed blood, under one year old, to Francis Collins, for his bull Jim, $2.

For the next best to Isaac Newton, for his bull Rodney, $1.

Heifers.—For the best Durham heifer between one and two years old, to A. C. Roberts, for Rowena, $6.

For the next best, to John H. Andrews, for Beauty, Washington's Letters.

For the best Devon heifer, between one and two years old, to Morris Longstreth, for Fox, $4.

For next best, to Morris Longstreth, for Lilly, $2.

For the best Alderney heifer, between one and two years old, to John R. Suplee, for Silly, $4.

For the best heifer of native breed, between one and two years old, to Mrs. Frances Hennis, $4.

For the best Durham heifer calf, under one year old, to Isaac W. Roberts, for Vermillion, $2.

For the best Alderney heifer calf, under one year old, to John R. Suplee, for Daffy, $2.

For the best heifer of mixed breed, between one and two years old, to Wm. Webster, for Cherry, $4.

For the second best to Wm. Webster, for Becky, $2.

For the best heifer calf of mixed blood, under one year old, to H. J. Helmbold, for Almira, $2.

Isaac W. Roberts exhibited a fine young steer, Rough and Ready, for which the company awarded a complimentary premium of $2.

All of which is respectfully submitted.

Joseph Crawford,
John M. George,
William Johnson,
John Johnson,
Samuel Cooper.

Sheep.—The committee on sheep report that they award to Aaron Clement for the best Bakewell buck, $4.

For the next best, to Aaron Clement, $2.

For the best Southdown buck, to Aaron Clement, $4.

For the next best do. do. $2.

For the best Cotswold buck over one year, to Aaron Clement, $4.

For the best Southdown buck to Aaron Clement, $4.

For the next best, to Aaron Clement, $2.

For the best Bakewell ewes, to John Johnson, $4.

For the best Southdown ewes, to Aaron Clement, $4.

For the next best, to John Thurlow, $2.

For the best ewe lambs, to D. Robinson, $2.

For the next best do. do. $2.

For the best four ewes of mixed breed, to D. Robinson, $2.

David Lardner, *Chairman*,
David Whitall,
Benedict Gheen,
Enos Gheen.

A superior lot of mixed blood sheep were brought to the ground last evening, by Mr. John Bradley, of Chester county. They reflect great credit on the enterprising breeder. The committee regret that they arrived too late for examination.

Hogs.—The committee on swine beg leave to report that they have examined the different pens, and award—

For the best boar, to James Esray, $4.

For the next best do., to H. J. Helmbold, $3.

For the best boar over six months and under one year, to James Esray, $4.

For the best sow, to Pennsylvania Hospital, $4.

For the next do., to Manuel Eyre, $2.

For the best boar pig, between two and six months old, Chester county breed, to James Esray, $3.

For the next best Chester county, H. J. Helmbold, $2.

For the best sow pig, between two and six months old, to James Esray, $3.

For the next do., James Esray, $2.

For the best five pigs under two months, to Richard Cartwright, $4.

For the next best, to Robert Green, $2.

For the best sow pigs, between two and six months old, of Chester county breed, to Benjamin Hickman, $3.

For the next best, to Benjamin Hickman, $2.

For the best boar pig, between two and six months old, to Benjamin Hickman, $3.

For the next do., Benjamin Hickman, $2.

The committee were much gratified with the fine display of pigs, &c., &c.

JOHN LARDNER,
DAVID WHITALL,
BENEDICT GHEEN,
ENOS GHEEN.

The committee on butter and poultry, beg leave respectfully to report—that they award

For the best pair of Jersey Blue fowls, to Aaron Clement, $2.

Also to Aaron Clement for second best do., $1.

For the best pair of other improved breeds, Poland fowls, to William Leonard, $2.

For the second best improved breed, to M. Crouse, $1.

For the best pair of capons five months old, to Anthony Newbold, $2.

For the best pair of ducks to —— Cartwright, $2.

For the next best to —— Cartwright, $1.

For the best pair of geese, to Manuel Eyre, $2.

To Anthony Newbold, a special premium for his Chinese (Thangber) and Marrabar fowls, $2.

M. Crouse, a special premium for his Malay Cock, $1.

The committee report that they were highly pleased with the general display of fowls. William Leonard deserves great credit for the attention he has given to the improvement of the Poland fowls; also, much praise is due to Michael Crouse for his white and black Poland chickens. The Jersey Blues exhibited, were very superior.

To John Thomas they award the first premium of a silver butter knife, $5.

For the next best, to —— Tothweight, Colman's Tour.

GEORGE WRIGHT,
JAMES MCPHERSON,
HOMER EACHUS.

The committee on implements and produce, report—that the objects brought together have been unusually numerous, and worthy of attention. The most extensive and best display of implements made by one person, was that of D. O. Prouty, to whom they award the first premium of $10; and the next best that of E. Chandler, the second premium, Colman's Tour.

The Wheat Fan made and exhibited by Edwin Chandler, of Philadelphia, besides preparing the grain for market, has an arrangement by which the seed of Timothy is deposited so as to be obtained separately. The committee award for this the first premium for Wheat Fans, $4.

For the next best Fan, which also separates the Timothy, they award the second premium to J. Bamborough's Fan, Lancaster, Pa., $2.

For the best Corn Sheller they award the first premium of $4 to D. O. Prouty, for his improved large double Corn Sheller, for shelling and screening corn, and separating it from the cobs, adapted to hand or horse power.

For the next best to E. Chandler, for his double Corn Sheller, they award the second premium of $2.

For the best horse power Straw or Stalk Cutter, to Jesse Urmy, of Wilmington, Del., for his Corn-stalk Cutter and Grinder, $6.

For the best Straw or Hay Cutter, they award the second premium of $4 to J. G. Talbot, for Richardson's patent.

For the next best Straw or Hay Cutter, they award the second premium of $2 to D. O. Prouty, for Hovey's patent.

For the best Drill Machine, they award the first premium of $2 to Pierson's Grain Drill.

For the second best to Smith's Grain Drill, $2.

For many machines and implements of great value no premiums have been offered by the Society. Among those which particularly attracted the attention and admiration of the committee, may be named, the Grain Thresher and horse power exhibited by Wheeler, Meleg & Co., of Norristown, Pa., together with the Cutter adapted to the horse power, for which the committee award an honorary premium of $4.

The committee would also deem worthy of special notice the Double Geared Self-Adjusting Chain Horse Power, of Jesse Urmy, of Wilmington, Del., together with his Stalk Cutter, and Corn-cob Crusher and Grinder.

R. T. Potts exhibited a drill for planting corn, made by E. J. Dickey, of Hopewell, Chester county, Pa., which had proved itself very efficient in putting in the crop of the present season. For this Corn Drill the committee award an honorary premium of $2.

To D. O. Prouty, for his Churn, the committee award an honorary premium of $2.

To Jacob Rogers, Jr., a premium of $2 for Birdsell's Double Pointed and Self-Sharpening Cultivator.

The committee also noticed an alleged improvement in the Water Ram made by N. and G. M. Kohl, of Willow Grove, Pa.,—said to consist in the substitution of brass inner valves.

For the Wheat Fan of Armstrong & Montgomery, they award an honorary premium of $2.

The Wheat Drill exhibited by Mr. M. Eyre is worthy of notice, for its economy and alleged good performance.

Also the Cradle Corn Cutter, exhibited by the same gentleman.

Produce.—For the greatest variety and best display generally, the committee award the first premium to George Blight, $8.

For the next best to Samuel Cooper, of Penn Township, Colman's Tour.

For the best sample of red wheat, the first premium is awarded to C. S. Stockton; for the next best to George Blight, $1.

For the best white wheat they award the first premium to Robert T. Potts, $3, and for the next best to the Pennsylvania Hospital, $1.

For the best sample bushel of rye, they award the first premium to Isaac W. Roberts, $2; for the next best to George Blight, $1.

For the best sample bushel of flint corn, they award the first premium to Samuel Cooper, of Penn Township, $2; for the next best to S. S. Richie, $1.

For the best Gourd Seed corn, they award the first premium to Edward Rogers, $2; for the next best to Charles Waters, $1.

For the best mixed corn, they award the first premium to Enos Green, of Brandywine, Chester county, Pa., $2; for the next best to Isaac Newton, $1.

For the best sample bushel of potatoes, they award the first premium to Samuel Cooper's College potatoes, $2; for the next best to Mrs. F. Hennis, $1.

For an uncommonly fine variety of white corn, the committee award an honorary premium of $1 to Wm. Potts, of Montgomery county.

For beautiful bouquets presented to the Society by Robert Henry, gardener of G Blight, the committee award an honorary premium of $2.

The committee would notice, as particularly worthy of admiration, W. D. Rapp's white Mediterranean wheat, the fine vegetables from the farm of R. T. Potts, and the Pennsylvania Hospital; the Isabella and Powell grapes of A. S. Roberts, a fine display of mangel wurtzel and ruta bagas by Isaac Newton; the Mammoth and Cheese pumpkins, Valparaiso squashes, ruta bagas and carrots, from the farm of Samuel Williams; the Norfolk white turnips and ruta bagas of Wm. Webster, and the carrots and ruta bagas of S. S. Richie.

All of which is respectfully submitted.

G. Emerson, *Chairman*,
Samuel Williams,
Jesse George,
Robert Hare,
Daniel Dager,
Anthony Newbold.

Lamb Tavern, Oct. 15th, 1847.

The committee on ploughs and ploughing were highly gratified with the superior manner in which all the ploughing was done; it being very difficult, where all was so good, to decide which was in reality the best, and wished it were in its power to give each man a premium. We however award the first premium for the best plough to Prouty's No. 3½. $10; second best, Colman's Tour, to Buckman's No. 8; first premium for the best ploughman, $5, to John Hall; second best, Colman's Tour, to Joseph Rhoads.

We also award a complimentary premium of $3 to Robert T. Potts, for his superior working oxen—performing the work in the best manner, without an extra driver.

Samuel S. Richie,
Isaac Newton,
John Sharpless,
John P. Hunter,
Chalkley Harvey.

Economy.

A thorough-going, hardworking man and his wife, who pulled together, had, by dint of labour and good management, laid by a sum of money, with which he stocked a farm, although scantily, it must be confessed. He worked two horses, and his wife milked four cows; and the business worked finely the first year: but then one of his horses died, and the other fell lame; and to prove the truth of the old saying, "misfortunes never come single handed," all his cows died by the distemper, then raging in the country. This also was the year, when the fly literally destroyed his wheat, and the drought the potatoe crop; so there was an end of all his hopes, and with them, the power for future exertion! In his distress he went to an old friend of his father, who lived in the city, and told him his tale. His friend desired him to call next day, and he would, in the mean time, see if anything could be done. On meeting him next morning, his friend said, "I know your honesty and industry, and you must not give up. I will lend you what money you may want, until you can repay me; go ahead. The

only condition I shall exact of you is this—that neither you nor your wife spend one shilling, before taking it in your hand and asking yourselves, "can we possibly do without spending this?" and to your honesty I leave the result.

The man consented, and purchased three horses and six cows, and a fine large lot of town dung, as indispensables, with some improved tools, for he knew the value of them. But when his jacket, for the third time, was gone at the elbows, and his trousers at the knees and behind, and his wife thought she could no longer possibly mend them, they conscientiously resorted to the ordeal of the trial by the shilling, and ordered, that a piece of bed ticking, which his wife had by her, would suit both purposes; while the shirt, patched in the body so as almost to resemble Joseph's coat, would be quite as well without sleeves this hot weather, and shoes are useless when the weather is fine. His wife's gowns had become much straightened, by cutting up one to mend another; for, by the ordeal of the shilling, it was found possible to do without spending it in repairing pieces. In the mean time, everything flourished out of doors. The increased strength of teams and dairy, the improved tools, and purchased manures, had increased their means threefold; and to lay by a dollar, was far more pleasant than to spend it—a fine maxim that.

Suffice to say, in far less time than his friend expected, he called on him, in his patched clothes, to repay the borrowed money; and to the question, how had he been enabled so soon to do it? he replied, "by adding to my resources out of doors, and by the rule of the shilling; but only see what a figure I am!" adding, "to you I am indebted for a secret which will enable me to buy a farm instead of renting one." After this, we would advise young farmers to "Borrow all you can, and lend it to the farm. Trust to it and the trial by the shilling, and by the Divine blessing you will become rich, and no mistake."—*Boston Cultivator.*

Curious Phenomenon.

Amid all the wonders which unfold themselves in the great temple of nature, there are some in its arcanum which we can but imperfectly comprehend or analyze. The ascension and circulation of sap, to perfect the growth and nutrition of plants, has employed some of the most able minds, without arriving at any satisfactory conclusions. I recollect, in the month of April, 1840, that a phenomenon occurred to me which attracted my attention. Being out one morning on a ramble in my favourite pursuits,* I discovered a specimen of a bird which I was desirous of obtaining perched upon the loftiest summit of a white birch tree, *Bétula populifólia.* A discharge of the gun brought down the bird, and when stooping to pick up my game, I was much surprised at a continued shower of rain, in large drops, oozing from the bark of the branches of a large limb just above my head: this continuing unabated, I was forced to go from under the limb, to prevent my powder being wet when re-loading. As the leaves had not expanded, and the buds had just begun to germinate, I took particular pains to investigate the matter, as the sky was perfectly clear, and no more than ordinary dew on the grass. The location of the tree was near the base of a high hill, the ground very moist, and studded over with springs of water. The tree on examination proved to be of a healthy structure throughout, and no appearance of water dropping from the limbs of any other part of the tree except the branch alluded to; this, to all appearances, was sweating from every twig and ramification, from the junction of the limb with the main trunk to its termination. This continued for an hour, and I left. Returning that way late in the afternoon, the raining from the limb had but slightly diminished, presenting nearly the same appearance as when I left in the morning. By what law this singular ascension of the aqueous fluid could have taken place in a separate limb of the tree, I am not able to answer.—*Hovey's Magazine.*

Remarks on Pickling.—The season is approaching for preparing pickles and preserves for home consumption, and a friend at our elbow gives us a hint to caution our thrifty housewives to be careful in their selection of vessels to be used in this business, as common earthen or potter's ware is dangerous to health on account of its being glazed with lead, which all acids will corrode or dissolve—and by this means it becomes mixed with our aliment, the effect of which on the health of individuals cannot but be sensibly felt. Vessels made of glass or stone ware, are decidedly the best for pickles and preserves—and even wood may be used for pickles with good effect. Vessels of large size should not be used for these purposes—the smaller the better—for it should be opened and exposed to the air as seldom as possible.—*Boston Journal.*

* He is a distinguished ornithologist, and has furnished several hundred beautifully prepared specimens of birds from Florida to Maine, for the museum of the Natural History Society in Portland.—*H. A. S. D.*

Silas Wright's Address,

At the Exhibition of the New York State Agricultural Society, 9th mo. 16, 1847.

(CONCLUDED.)

Does any one believe, that for generations yet to come, the agricultural operations of the United States are to be circumscribed within narrower comparative limits than the present; or that the agricultural productions of the country are to bear a less ratio to our population and consumption than they now do? I cannot suppose that any citizen, who has given his attention to the considerations which have been suggested, finds himself able to adopt either of these opinions. On the contrary, I think a fair examination must satisfy every mind that our agricultural surplus, for an indefinite future period, must increase much more rapidly than our population and the demand for domestic consumption. This I believe would be true without the efforts of associations, such as this, to improve our agriculture. The condition of the country, and the inclination and preference of our population for agricultural pursuits, would render this result unavoidable; and if this be so, when the impetus given to agricultural production by the improvements of the day; the individual and associated efforts constantly making to push forward these improvements with an accelerated movement; the mass of educated mind turned to scientific researches in aid of agricultural labour; the dawning of a systematic and universal agricultural education; and the immense bodies of cheap, and fresh, and fertile lands, which invite the application of an improved agriculture, are added to the account, who can measure the extent or duration of our agricultural surplus, or doubt the soundness of the conclusion, that the export trade must exercise a great influence upon the market for the agricultural productions of the country for a long series of years to come?

Such is the conclusion to which my mind is forced, from an examination of this subject, in its domestic aspect simply; but there is another now presented of vast magnitude and engrossing interest, and demanding alike from the citizen and the statesman of this republic, the most careful consideration. All will at once understand me as referring to the changes and promises of change in the policy of the principal commercial nations of the world, touching their trade in the productions of agriculture. By a single step, which was nothing less than commercial revolution, Great Britain practically made the change as to her trade; and subsequent events have clothed with the appearance of almost superhuman sagacity, the wisdom which thus prepared that country to meet the visitation of famine, which has so soon followed, without the additional evil of trampling down the systems of law to minister to the all-controlling necessities of hunger. Changes similar in character, and measurably equal in extent, though in many cases temporary in duration, have been adopted by several other European governments, under circumstances which render it very doubtful how soon, if ever, a return will be made to the former policy of a close trade in the necessaries of human life.

New markets of vast extent and incalculable value, have thus been opened for our agricultural surplus, the durability and steadiness of which it is impossible yet to measure with certainty. It is in our power to say, however, that a great body of provocations to countervailing restrictive commercial regulations, is now removed, in some instances permanently, and in others temporarily in form; and it would seem to be the part of wisdom, for the agriculture of this country, by furnishing these markets to the extent of the demand, with the best articles, at the fairest prices, to show to those countries, and their respective governments, that reciprocal commercial regulations, if they offer no other and higher attractions, present to their people a safeguard against starvation.

Such is the connection, now, between our agriculture and the export trade and foreign market, and these relations are to be extended and strengthened, rather than circumscribed and weakened, by our agricultural advances. The consumption of the country is far short of its production, and cannot become equal to it within any calculable period. On the contrary, the excess of production is to increase with the increase of population and settlement, and the improvements in agriculture and agricultural education. These appear to me to be facts, arising from the condition of our country, and the tastes and inclinations of our people, fixed beyond the power of change, and to which theories and principles of political economy must be conformed, to be made practically applicable to us.

The American farmer, then, while carefully studying, as he should not fail to do, the necessities, the wants, and the tastes of all classes of consumers of his productions in his own country, must not limit his researches for a market within those narrow bounds. He must extend his observations along the avenues of commerce, as far as the commerce of his country extends, or

can be extended, and instruct himself as to the necessities, and wants and tastes of the consumers of agricultural productions in other countries. He must observe attentively the course of trade, and the causes calculated to exert a favourable or adverse influence upon it; watch closely the commercial policy of other countries, and guard vigilantly that of his own; accommodate his productions, as far as may be, to the probable demands upon the market, and understand how to prepare them for the particular market for which they are designed. Next to the production of the best article at the cheapest price, its presentation in the market in the best order and most inviting condition, is important to secure to the farmer a ready and remunerating market.

So long as our agricultural shall continue to be an exporting interest, these considerations, as second only to the science of production itself, will demand the careful attention and study of our farmers, and in any well digested system of agricultural education, its connection with manufactures and the mechanic arts, with commerce, with the commercial policy of our own and other countries, and with the domestic and foreign market, should hold a prominent place. A thorough and continued education in these collateral, but highly necessary branches of knowledge to the farmer, will prove extensively useful to the American citizen, beyond their application to the production and sale of the fruits of his labour. They will qualify him the more safely and intelligently to discharge the duties of a freeman; and if called by his fellow citizens to do so, the more beneficially to serve his state and country in legislative and other public trusts.

I hope I may offer another opinion in this connection, without giving offence, or trespassing upon the proprieties of the place and occasion. It is that this education in the just and true connection between the agricultural, the commercial, and the manufacturing interests of our country, equally and impartially disseminated among the classes of citizens attached to each of these great branches of labour, would effectually put an end to the jealousies too frequently excited; demonstrating to every mind, so educated, that, so far from either being in any degree the natural antagonist of the other, they are all parts of one great and naturally harmonious system of human industry, of which a fair encouragement to any part is a benefit to all; and that all invidious and partial encouragement to any part, at the expense of any other part, will prove to be an injury to all. The education proposed will do all that can be done to mark the true line between the natural and healthful encouragement to either interest, and an undue attempt to advance any one, at the expense of the united system, merely producing an unnatural and artificial relation and action, which cannot fail to work disease and injury.

The labours of this Society, and of kindred associations, have done much to inform the minds of our farmers in these collateral branches of knowledge useful to them, and much remains to be done. The science of production claims the first place, and is a wide field, as yet so imperfectly cultivated as to afford little time for collateral labours. To secure a stable and healthful market, and to learn how to retain and improve it, also opens an extensive field for the mental labours and energies of the farmer. Between these objects the relation is intimate and the dependence mutual. The production makes the market, and the market sustains the production. The prospect of a market stimulates to activity in the field of production, and the fruits of that activity urge the mind to make the prospect real. Success in both contributes to the health and vigor and prosperity of agriculture, and of that prosperity commerce and manufactures cannot fail largely to partake.

All are willing to promote the cause of agriculture in our State and country. Most are ready to lend an active co-operation, and all are cheerful to see accomplished any valuable improvement in this great branch of productive industry. The difficulty hitherto has been in adopting any general plan to effect this desirable object. Hence, most usually, when the public mind has been awakened to the subject, arbitrary, and in many cases visionary experiments have been introduced, based upon no philosophical investigation of cause and effect, but upon some accidental trial, by a single individual, of some novel mode of culture, which, under the circumstances attending the experiment, has met with success. This single experiment, without an inquiry into, or a knowledge of the cause which, in the given case, has secured the successful result, is at once recommended as an infallible rule of husbandry. The publication and dissemination of detached experiments of this character, for a long period, constituted the most material additions to the stock of literary information connected with agriculture, supplied to our farmers; while many of the experiments were too intricate and complicated to be reduced to practice with any certainty of accuracy, and others were so expensive that the most perfect success would not warrant the outlay. Unsuccessful attempts to follow the directions given for making these expe-

riments, brought what came to be denominated "book farming," into great disrepute with the industrious, frugal and successful farmers of the country, and excited a jealousy of, and a prejudice against this description of information upon agricultural subjects, which it has cost years of patient and unceasing effort in any measure to allay, and which are not yet removed.

In the mean time geological research, heretofore principally confined to investigations into the mineral kingdom proper, has been extended to its legitimate office, and has brought within its examinations the formation of the various soils, and their minute constituent parts. Chemistry has commenced where geology closed, and by a careful analysis of these constituents of the various soils, of the principal agricultural products, and of the usual manures, is labouring to establish upon philosophical principles, the true relations between the soil and the manure to be applied, and between both and the crop to be planted and produced. It is seeking out, with rapid success, the appropriate food of the various vegetables cultivated by the farmer, the soils and manures in which the food for each is found, and the way in which it may be most successfully administered. So with the food of the domestic animals, and the most economical manner of feeding it.

These investigations are the reverse of the former system of arbitrary experiments. There a result was made to justify the arbitrary means adopted to produce it. Here causes are ascertained, and being so ascertained, are relied upon to produce their natural effect, which effect is the result sought.

The importance of this great subject is effectually arousing the attention of the literary and scientific men of the country, and the success already experienced is drawing to these researches minds qualified for the labour, and energies equal to its rapid advancement. The progress made is bringing together the unsettled mind of the country, and producing the very general impression that the time has arrived when the foundations of a systematic, practical agricultural education should be laid, and the superstructure commenced.

It is universally conceded that agriculture has shared but lightly in the fostering care and government patronage which have been liberally extended to commerce and manufactures, nor is it believed that additional public expenditure is necessary to enable the State to do all that can reasonably be required of it, to accomplish this great object. Our educational funds are rich, and the colleges, academies, and common schools of the State share liberally in the distributions from them, while a Normal School, for the education of teachers, instituted at the seat of government, is also mainly supported from these funds. These institutions present the organization, through which, perhaps better than through any independent channel, this instruction can be universally disseminated among the agricultural population of the State. The annual additions to the school district libraries may be made with reference to this branch of education, and thus place within the reach of all the discoveries as they progress, and the rules of husbandry deduced from them, as they shall be settled and given to the public from the pens of the competent professors engaged in pursuing the researches.

This Society, and like associations, may, through appropriate committees, their corresponding secretaries, public spirited commercial men, and otherwise, collect and embody in their transactions, facts and information respecting the markets, foreign and domestic; the present and probable supply of agricultural products; the mode and manner of presenting the principal productions in the various markets in the most acceptable form; the state and prospects of trade at home and abroad, and the changes present and prospective in the commercial policy of our own and other countries, with the probable influences upon the agricultural market. The commercial and agricultural press will doubtless come powerfully to the aid of the associations, in all efforts of this character, and having these great objects in view.

In this way the foundation may be gradually laid, and the materials collected for the commencement of those agricultural studies, which time and application, with the constant evidence of their utility in practice, would ripen into a system, to be engrafted upon the course of regular studies pursued in the colleges, academies, and common schools, and made a branch of the studies of the male classes in the Normal School, placed under the superintendence of an instructor selected for the purpose, and qualified to prepare his classes for teaching the studies in the common schools of the State.

Thus a generation of farmers would soon come forward, well educated in the great and essential principles of agricultural production; in the true relations existing between agriculture, commerce and manufactures, and in the adaptation and preparation of their products for the agricultural markets. Such farmers, with the continued aid

of the schools in which they were taught, would become the best manual labour instructors for their successors.

The passage of time reminds me that I am extending these remarks beyond the proprieties of the occasion and the patience of my audience. A single reflection shall close them.

However confidently the opinion may be entertained that other circumstances and relations might present a prospect for the agriculture of our State and country more stable, independent and flattering, certain it is, that the future here opened is full of cheering promise. We see in it the strongest possible security for our beloved country, through an indefinite period, against the scourge of famine. Our varied soil and climate and agriculture double this security, as the disease and failure of any one crop will not, as a necessary consequence, reduce any class of our population to an exposure to death from hunger. We see also, in addition to feeding ourselves, that our surplus is almost, if not altogether, sufficient, if faithfully and prudently applied, even now to drive famine from the length and breadth of Europe. And that it is in our power, by faithful mental and physical application, soon to make it equal to the expulsion of hunger from the commercial world. We see that, dependent upon the commercial markets, our agriculture may bring upon our country a high degree of prosperity, and enable us, when extraordinary occasions shall call for its exercise, to practice a national benevolence as grateful to the hearts of the humane as to the wants of the destitute. And we see that by the wider diffusion and more secure establishment of a successful agriculture among our citizens, as a permanent employment, we are laying broader and deeper the foundations of our free institutions, the pride and glory of our country, and prized by its freemen as their richest earthly blessing; the history of all civil government, confirmed by the experience of this republic, furnishing demonstrative proof that a well educated, industrious, and independent yeomanry, are the safest repository of freedom and free institutions.

A New Remedy for the Curculio.

Sir,—I made one of those accidental discoveries this season, which often prove more valuable than the results of a carefully conducted series of experiments.

This is no less than a preventive to the attacks of that most unconquerable enemy to all smooth stone fruit—*the Curculio.*

I have long been so troubled with this insect, that I have considered the plum tree of little value to me.

This season, wishing to stimulate a couple of old plum trees, which stood among others in my fruit garden, I directed my gardener to place round each tree a couple of barrowfuls of fresh horse manure from the stable. This was accordingly laid on the surface of the ground, and as work was rather pressing at the time, it was suffered, though rather strong in ammonia, to lie thus for a fortnight. I think it was put about the trees just as the fruit began to swell, and before it became as large as peas. The result is, that these two trees are bearing a good crop of fruit, while every other plum tree in my garden has, as usual, been stung, and dropped all its fruit. There was no punctures, or scarcely any, to be found on the fruits of these two trees.

I understand from this, that the pungent fumes of the fresh stable manure, are so offensive to the curculio, that it avoids the trees under which it is placed. If this, on repetition, proves to be the case, we have, I think, a weapon against the depredator; for though the effect of the application is not the most agreeable one in a neat fruit or kitchen garden, yet no one would hesitate to resort to it, annually, if the curculio can be driven away by such means.

Yours,

A Subscriber.

Philadelphia, Aug. 10th, 1847.

[This is interesting, and we have some corroborative evidence. This season being one when insects of all kinds are unusually abundant, we have ourselves suffered somewhat from the attacks of the curculio, though not to such an extent as to prevent our having a moderate crop of plums, apricots, etc. But we observed some time ago, with some surprise, that upon a couple of large nectarine trees, growing directly against a fence which shuts in our stable yard, not a single fruit was punctured by the curculio, though other nectarine trees, sixty or eighty feet distant, did not escape. We attributed it at the time to the fumes from the litter thrown daily into the yard. Since our correspondent's experience, which is more direct, would appear to confirm the opinion, it will, as he suggests, be well to make a more extensive trial of the effect of a direct application next season.—*Ed. Horticulturist.*]

The Oswego Times says that on the 16th there were ground, bolted, packed and shipped, at the flouring mills of H. Fitzhugh & Co., in that village, 814 barrels superfine flour, with six runs of stones only in motion.

Sewage Manure,

In reference to its use for Agricultural purposes.

There is no subject, perhaps, within the memory of man, connected with the proceedings of the British legislature, that has developed more important matter for national reflection and practical operation, than the facts elicited by the Health of Towns' Commission—an inquiry which, while it has made us acquainted with the most appalling evidence of the diseases of humanity consequent upon the absence of municipal precautions, has also pointed out the means by which the calamity may be in future permanently averted; those means, too, having not only the advantage of eradicating what has been hitherto so fatally noxious to human health, but at the same time—as has been more obviously shown by a subsequent inquiry—of providing a new agent for augmenting the productions essential to the sustentation of man. In a word, more commodious and sanatory dwellings for the labouring poor, improved ventilation, and an extended system of sewage, have been the judicious recommendations of these respective investigations.

It is in reference to the latter—namely, sewage, and its invaluable properties for husbandry purposes—that a few useful hints may be brought under the notice of agriculturists; for at no period could they be more appropriately made known than the present, when the peculiar position of the British farmer, and the direful necessities of millions—through a visitation of Providence,—alike claim the sympathy and co-operative suggestions of the community at large.

It is not a little remarkable that while the system of agriculture of this island is admitted to be transcendently superior to that of any other country, one of the most valuable agencies for stimulating the produce of the soil should have been at all times so little regarded by the English cultivator. The collection of manure in other countries, and that too in a manner totally different from anything ever adopted in this country, has for ages constituted a prevalent and most lucrative pursuit. In China, for instance, its collection is an object of so much attention that a prodigious number of old men, women, and children are, we are told, constantly employed about the streets, public roads, and banks of canals and rivers, with baskets tied before them, and holding in their hands wooden rakes to pick up the dung of animals, and offal of any kind that may answer the purpose of manure. In various parts of a farm, and near the paths and roads, large earthen vessels are buried to the edge in the ground for the accommodation of the labourer or passenger who may have occasion to use them. In small retiring-houses, built also upon the brink of the roads, and in the neighbourhood of villages, reservoirs are constructed of compact materials, to prevent the absorption of whatever they receive. Such a value, in short, is set upon the principal ingredient called *ta-feu*—night soil—for manure, that the oldest and most helpless persons are not deemed wholly useless to the family by which they are supported.

In Belgium, as in China, manure is also an article of trade. The towns let the cleaning of the streets and public retiring places at great rents. In every town, travellers tell us, there are sworn brokers expressly for the purpose of valuing night-soil, the price of the different manures varying from five to twenty-four francs the cart-load of 1,500 lbs. The most efficient applications of the town manure in that country are in the liquid form; it is there applied, not by a water-cart, but by hand labour: a man carries on his back a *dossier*, from which he sheds it out and distributes it.

In Paris the very stuff which in London washes through the streets and under the streets of London into the Thames, is carefully collected. At Meurice's Hotel, early in the morning, may be seen some fifty or sixty large quarter-casks rolled up out of the subterraneous part of that establishment, containing the water of the water-closets, and the water from washing, all of which is sent into the country, and "people—says the conductor of that house—are glad to fetch it away." While in the British metropolis it is a well ascertained fact, so slightly is such an invaluable commodity appreciated, that "three loads a day of dung are dropped in Regent street, between the Quadrant and Oxford-street! and that the amount of actual solid fertilizing manure, deprived of all its liquid diluting substances, that goes into the Thames, is, from the different sewers, actually 725,000 tons a year!" In short, the whole of the towns on the continent make an annual revenue by the cleaning out of cesspools.

To a limited extent, the use of sewage water as an efficacious manure has been availed of by the farmers in this country, particularly in Scotland. At Stirling, the well known Mr. Smith, of Deanston, not very long since instituted a set of experiments which produced the most satisfactory results. Some land was laid out in portions, in rather a sandy loamy soil. First, a division was manured with farm dung and ashes mixed, at the rate of twelve tons per acre,

and at a cost of 48s.; a second portion, with the same compost, giving sixteen tons per acre, and at a cost of 64s.; a third division, with guano, two cwt., costing 16s.; a fourth with guano, four cwt. per acre, at a cost of 32s. Another ridge, similar in extent to the whole of this, was manured with sewer water, at the rate of sixteen tons per acre, and taking it at 3d. per ton the cost would be 4s. The average produce of the whole variety—the different specimens were not ascertained separately—was, with the dung and guano, forty-five bushels per acre of good barley; that with the sewage water averaged forty-two bushels per acre—showing that this small quantity of sixteen tons had the effect of coming very nearly up to the dung and the guano, but showing also that more liquid manure might be given with safety. The sixteen tons were applied twice; all the others were once. The sewage water was taken from a tank, into which it flows from the streets of Stirling. A second experiment was made in raising turnips (the green top yellow) upon a similar soil, to the extent of a quarter of a rood, with two tons of sewage water, equal to thirty-two tons per acre, costing 8s.; the produce twenty-eight tons per statute acre of bulbs—so that a ton of sewage water very nearly raises a ton of turnips. Another experiment was made in 1845, also by Mr. Smith. This was by retaining the night urine of two people during a given time, to enable them to apply it to a rood of land. This being mixed with ashes, to make it applicable in that way, gave 27 tons per acre of turnips; and calculating from that, Mr. S. found that the urine of two persons would suffice for an acre per annum. The remainder of the ground was manured somewhat differently: one with 500 cwt. of guano, the produce 32 tons per acre; one with farm-yard dung (20 tons,) 31 tons per acre; another with ash-dung (30 tons,) 31 tons of bulbs per acre; one with ash-dung alone (12 tons,) 23 tons per acre. Another experiment was made upon a farm at Glasgow, where the liquid manure was put over the land, and the growth continued during the whole of the winter of 1845–6 in a very remarkable way. That season, it is well known, was a great season for grass everywhere; but notwithstanding that, Mr. Smith says it was distinguished before all the grass of the country round, he having seen in the beginning of December, 1845, forty-three Irish bullocks wading to the fetlocks in grass upon some of their fields, and eating it most greedily, while the fields upon the farms in the neighbourhood were perfectly bare.

Mr. Harvey, of Glasgow, also applied sewage water to some wheat land before the crop was sown, and he had a luxuriant crop, more so than the other crops in the neighbourhood, and upon land which was rather cold, backward land.

The following is another instance, showing how the solid manure of farms may be converted into a liquid form. A gentleman near Dumfries has made a tank, into which he has carried all the water from his farmstead and his house, the sewage of his house, and also has put in some solid manure, and has applied water to it; and just with a common pump, which is worked by two men, he was, during the whole of the winter of 1845, irrigating his lawn, which produced the most beautiful flush of fine grass. The operation was performed with the hose-pipe early in the morning, and without emitting any annoying smell. Indeed, when the sewage water is sufficiently diluted to be most beneficial to the earth, there is very little smell.

The result of the comparison between the effects of liquid and solid manure is shown in the following experiment: Mr. Barber, of Muirdroachwood, had twenty-seven acres of land before his house, and the land was so poor that it originally only fed two cows: he had forty cows and four horses in his stable close to his house. He put the dung of forty cows into a tank, and passed a rill of water through the tank, and irrigated twenty-two acres. With the miscellaneous refuse of his house, the scullery, he irrigated five acres. The produce was so large that on that same plot he has been enabled to feed the forty cows and his four horses.

Another very important fact is also deserving of mention. At Edinburgh, where sewage water is also very extensively used, land which formerly let near the sea, sandy land at not more than half a crown an acre, and from that to five shillings, has been let regularly for many years at £20 an acre.

Such are some of the results of the application of sewage manure by practical agriculturists in Scotland. Nor are there wanting similar instances by others south of the Tweed. Mr. Dixon, the well known horse dealer, by the application of liquid manure—in this case urine and water, which is very similar to the sewage water—has kept 100 horses—as far as grass was required—from the Italian rye-grass grown upon four acres. The water is collected from the stables by small covered drains, and conveyed into a tank in the yard. Mr. Dixon, in his evidence before the Parliamentary Committee last session, says:—"I have a drain down the centre of the stall, connected with the stink-trap, before it is carried away into the urine

tank; but I have from time to time discovered the value of the urine to be so great that I have altered my mode of drainage, to catch more forcibly all its power with it; because the urine contains various descriptions of food, the life-restoring principle, which is the ammonia. Ammonia revives us when we have lost blood, and it does the same to the plant. The salt is the life-sustaining principle, and we lose both these when we allow the straw, which contains lime, to evaporate the liquid. I have endeavoured, as I have discovered the value of urine as gold among the metals, to catch it immediately it falls, and catch the whole of it with all its power." Mr. D. added, that in his stables each horse would produce three gallons of urine in a day, and eleven gallons of urine he deemed sufficient to manure one acre of grass.

For the irrigation of meadows sewage manure has also been applied with similar efficacy. Mr. Magnay, a farmer and land agent in Yorkshire, has practised the use of sewer water extensively in irrigation, and has laid out considerable tracts of land in Cumberland for that purpose. "My attention," he says, "was first drawn to the subject from the circumstance of a great quantity of water flowing through a village which I considered of value: I applied it to about twenty acres of meadow, which I increased to four-fifths of the produce which had been previously obtained from it. The most advantageous way of applying it was by a level gutter, laying it out in levels so as to flow over all points of the level alike, passing over the plane at a distance of about twenty-one yards, and the re-collecting it and carrying it to a further level down again."

We believe one of our most intelligent and experienced Essex farmers, Mr. Baker, of Writtle, entertains doubts as to the preference of liquid manure over solid manure, by reason of the expense of carriage, if conveyed any distance by water-carts. As this opinion may probably be held by others, it may be useful to give the results of Mr. Edwin Chadwick's inquiries, at home and abroad, into the applications of liquid manures:

"I obtained," says Mr. C., "an account of the irrigations with the refuse of Milan—which is given in the Report of the Health of Towns' Commissioners,—and in company with Dr. Arnott I visited the irrigated meadows near Edinburgh. I also visited the Clipstone water-meadows, formed by the Duke of Portland, near the town of Mansfield. From the information collected in this stage of the inquiry, I conceived the conclusion established, that there are no means of applying manure so cheaply and productively as in the liquid form. Some inquiries as to the expense of cleansing streets by watering by the hose, as at Philadelphia, where they have a constant supply of water, instead of by the watering-cart, showed that two men, when pipes were properly fixed, might water an extent of street equal to nearly twenty acres per diem. It suggested itself to me that this instrument might be made the means of achieving what was wanted for the distribution of liquid manures. In the summer of 1842 I was staying with a friend—Mr. Thomson, of Clitheroe, where Dr. Lyon Playfair was also staying. Mr. Thomson has extensive print-works, where he employs about 1,000 persons, and from the works has much liquid manure. I then advised the application of this manure by means of the hose. So far as I am aware, this was the first suggestion and experiment of the kind. The only modes of applying liquid manure then in use were by the method of irrigation, by the water-cart, or by hand. The land adjacent to Mr. Thomson's works was a stiff clay. I advised that it should be previously drained, and that Mr. Smith, of Deanston, should be consulted as to the drainage, and on the mechanical appliances for applying the refuse. Mr. Smith very soon entered into my views on this subject. The drainage was carried out as he recommended. Mr. Henry Thomson, jr., who took great interest in the subject, carried out the first experiment of the application of the refuse by the hose, which appears to me to have been completely successful. In another place in Lancashire I advised a friend to apply the liquid refuse by means of the hose, and to engage Mr. Smith to carry out the preparatory work of land-drainage. Mr. Thomson pumped up the sewage water from a well or shaft, into a tank made at the top of a field about 80 feet above the rest of the farm. He found that under that 80 feet pressure, by means of the hose, with the labour of two men, one to remove the hose, and another to direct the nozzle, they could distribute about 2,000 gallons of liquid manure in an hour (per acre). The important result was this: that it was to be accomplished by the labour of two men; and suppose we give 2½d. or 3d. an hour, that delivery of the 2,000 gallons was accomplished for 6d. They tried the water-cart—this was on land immediately adjacent to the farm;—the water-cart, and expense of delivery of the same quantity by that was, I think, about 5s.; the expense of leading and spreading stable-dung was about 11s. That was about the relative mechanical cost: 6d. for the de-

livery by the hose; 5s. by the water-cart; 11s. or 12s. in the distribution of stable manure." There is this great disadvantage also (adds Mr. C.) in favour of the hose, though you cannot give an estimate in money value as to the relative amounts—that in the distribution by the water-carts there is the poaching of the land by the weight of the cart and hose, and probably the damage of which would be more than 5s., and, of course, still greater damage in the case of the cartage of the heavier produce of stable manure. Mr. Chadwick subsequently says: "I think these 2,000 gallons of sewer water were found equal to about three cwt. of guano, and about fifteen tons of stable manure. But there was another important point which was established beyond a doubt, which was, that the friction through the hose, for a considerable length, was much less than we anticipated; for instance, we used half a mile of hose, and carrying it on the surface, over furrows, and through a ditch, and over a hedge, I think at the end of 800 yards it gave out a jet something, as near as I could judge, of 40 feet, nearly half the height due to the pressure. These experiments appeared to establish the fact that the hose, in many circumstances, for the delivery of a given quantity of water, even considering it as a means for the distribution of simple water, would have been cheaper than the water meadow itself; and you have the advantage, also, with that, of being able to apply the liquid manure to arable cultivation. With the water-meadow you only apply it to grass land. There are several gentlemen now who, have recommended this process of distribution by the hose, who are now applying it."

The experiments made by horticulturists have also been equally successful. Mr. Pince, a very able horticulturist near Exeter, applies the liquid manure twice a week; and with one of plain water, as he expresses it, in the interval between each watering with the liquid manure, he gets rid of fibrous matter; and to use his own expression, "I give this water with the manure in it so clear, that if you were not to know what it was, you would not object to drink it." Mr. Knight, the horticulturist of Chelsea, is also of opinion, from the successful experiments he has made, that "farm-yard manure will not be much regarded after a few years; people will give attention to the preparation of manure in a liquid state." And another authority, which we have already quoted more than once—Mr. Smith, of Deanston—says, "I have no doubt that when farmers come to know better the fact and advantages of using this liquid, they will make their dungsteads in covered tanks, and fill their tanks with the liquid, and mix it with their manure."

The experience of the Duke of Portland and others discloses also another curious fact, namely, that the liquid manure is equally efficacious during frost as at other periods.

Here, then, we bring the subject to a close. Enough of practical experience has been brought forward to show the vast benefit that cannot fail to accrue by the general application of this new species of manure to both tillage and grass lands; and no question is more deserving of a deliberate discussion by those useful institutions, the farmers' clubs, than the information that may be elicited by such of their members as have found their account in its adoption.—*Farmers' Magazine.*

How to treat Lard.—The trying of lard is an important branch of economy, requiring no little care and some direct information. Water, be it remembered, should never be made use of in this process, since it cooks the fat and makes it soft and liable to become speedily rancid. Put a lump of fat into a pot, and then stand the pot alongside of the fire, gathering round it a few embers; let a little of the fat try out, after which put the fat over the fire; with such precaution there is no danger of the lard scorching and no need of water, but the lard, when fully cold, will be found quite firm and solid, which cannot be the case if water be made use of in trying out.—*Scientific American.*

It should be kept well stirred—and salt is not essential, though a little will do no harm.

Cold Bed-rooms.—A person accustomed to undress in a room without a fire, and to seek repose in a cold bed, will not experience the least inconvenience, even in the severest weather. The natural heat of his body will very speedily render him even more comfortably warm than the individual who sleeps in a heated apartment, and in a bed thus artificially warmed, and who will be extremely liable to a sensation of chilliness as soon as the artificial heat is dissipated. But this is not all—the constitution of the former will be rendered more robust, and far less susceptible to the influence of atmospherical vicissitudes than that of the latter.—*Journal of Health.*

From the Horticulturist.

On Preserving Grapes for Winter Use.

Dear Sir,—The Isabella and Catawba grape vines are among the most valuable fruit trees known to Americans; for I am inclined to doubt greatly, if any other tree will bear so large and so regular a crop as they do, in all soils and in all sections of the country, except the upper part of New England, where the climate is too cold for them.

They have been multiplied within the last ten years so much, in some of the Atlantic States, that there is now hardly a farmer's garden without one or more of these vines. In many farmers' door-yards I have noticed, with much pleasure, the Isabella grape, trained over a trellis, in front of the kitchen or dairy, so as to make a cheap or very ornamental kind of verandah, such as you may see in Italy.

There are but few, however, of those who raise this prolific grape, who are aware how much the season in which ripe grapes are fit for the table, may be prolonged by a little care and management. Indeed, for my own part, I consider the case with which these two grapes may be kept for winter use to be one of the strongest recommendations to their culture.

I will, if you will allow me, detail two modes of preserving these native grapes, that I have, for three years past, practised with success. They are, no doubt, familiar to many of your readers, but as I very seldom meet with this pleasant fruit at any of my neighbors' houses in winter, I conclude that it will also be new to many others.

At my farm, a few miles from the city, I have an ice-house well constructed, which keeps a supply of ice through the whole year. In this I practice one mode of preserving grapes. This mode is applied to those which I wish for more immediate use, say from the season of frosts till near Christmas.

I have, in this ice-house, a series of open shelves, made of thin and narrow strips of pine, so as to form slender lattices. As soon as there is danger of a frost which might injure the grape, (in general early in October,) I have the grapes for this purpose carefully picked, and laid in single layers on these lattice shelves in the ice-house. There the temperature is so low and regular, that no perceptible change takes place for a long time, and I am therefore, able to supply my table every day with grapes, as fresh, to all appearance, as when picked, for a month or six weeks after they are usually to be had in market.

The second mode is calculated to preserve them for a longer time. By its means, I usually have a good supply from Christmas to March, and have once or twice kept them quite sound till April.

It is very simple. The grapes should be gathered a little before full maturity—say the last of September here. A fine windy day should be chosen, and the fruit should be picked and packed away, quite dry, as upon this depends their keeping well. You should be provided with a proper number of small boxes, holding about a peck each, grape jars, or champagne baskets—the latter answer the purpose well, if lined loosely with paper before using them. I put a layer of cotton in the bottom, and then a layer of grapes, and so alternately till the box is full; I then cover with a layer of cotton, and fasten the cover down with nails or otherwise.

I do not find it best to endeavor to exclude the air entirely. Decay takes place sooner when that is done. For the same reason I have found it better to choose *small* boxes, such as may be opened every week, as wanted for use, rather than larger ones.

As it is considered by my family no mean addition to the dessert, these grapes in abundance in winter, I have no doubt there are numerous readers of the Horticulturist who will put this simple process of preserving them into practice. I ought to add, before closing my letter, that the boxes should be kept in a dry airy place, free from frost.

Your obedient, W. Williams.

New York, October 11, 1847.

Prospects for New-Settlers in Eastern Virginia.

To the Editor of the Farmers' Cabinet:

Respected Friend,—In compliance with thy request, I will now endeavor to give some account of what I saw in my late journey to the eastern and southern portions of Virginia. After spending nearly a whole month, in viewing various neighbourhoods, several of them for the first time, and receiving every where the greatest kindness and hospitality, and every facility that could be desired,—I am more than ever convinced, that the prospects for new settlers in eastern Virginia, described in my former essays, have not been overrated. The appearance of the country generally, and the crops of corn especially, would convince the most sceptical, of the capacity of the soil for improvement, and high production, with the most tolerable husbandry. Nothing is needed but good management, to make the products equal, in every respect, to the best portions of New Jersey and Pennsylvania. If our people would but make a careful examination of this region, and especially the counties of Prince George, Surry, and Charles City,

adjacent to the noble James' River, which divides the latter from the two former—inspect the numberless deposits of rich calcareous marl—the effects of this cheap and most excellent fertilizer, where it has been applied to the soil—the facilities for reaching, with the greatest ease and convenience, all our northern markets, as well as all the world besides—the great abundance of fine timber, and wood, which find a ready sale on the banks of the river,—and the delightful climate, a just medium between the northern and southern extremes of our extended country,—I believe they could scarcely fail to give it the preference, over every other portion of the United States. But it is impossible to form a correct estimate, without a patient and careful examination—a single locality may be seen in a shorter time; but where so much has been abused and neglected, and presents so forbidding and discouraging a prospect at the first glance,—time must be taken to view and examine some bright spots, where the proprietors have with enlightened views, and most praiseworthy perseverance, departed from the habits which have heretofore prevailed, and applied the means, which almost every where are on the farms in the greatest abundance, to renew and increase the fertility of the soil.

One of the most gratifying incidents of my life, was a visit to Beech Wood, at Coggins' Point, in Prince George, the residence of Edmund Ruffin, Jr., to meet there his father, the author of the "Essay on Calcareous Manures," &c., late editor of the "Farmer's Register." works which will ensure him the gratitude and veneration of every enlightened agriculturalist, as long as works on agriculture remain to be read. To ride and walk with him, over the scenes of his early and successful experiments,—to visit with him the very marl banks, from which his first experiments were made; and to listen to his remarks, and observations, the result of so many years of the most persevering and indefatigable labour and study, was indeed most gratifying and instructive. Here, the enquirer after a knowledge of the action of calcareous manures on soils, may have all demonstrated to his satisfaction—and if he will see, can no longer doubt the capacity of the soil of this region for the highest productiveness, by a judicious application of means which are abundantly supplied, in almost every farm in this region.

Within a short distance of Coggins' Point, I visited many farms, of 250 to 600 acres each, mostly with good buildings, and on, or very near navigation, with marl of good quality, finely watered, well timbered, and producing now fair crops, which can be purchased at prices varying from $5 to $10 per acre; the terms of payment as easy as could be desired in most instances. In the same region, lands can be had without improvement, at much lower prices; and in one instance, a few miles from the river, one tract of 100 acres was shown, which can be had for $1 per acre. Here, I think, is one of the finest places for the settlement of a colony of northern farmers, that I have seen—in a space of a few miles, enough land may be had, for many families,—and I may remark here, that in the latter part of the 8th month, I found the people generally, throughout this region, in the enjoyment of health quite as good, and I think better, than in Burlington county, when I left home; and although every one agreed that the weather was more oppressive than it had been at any time previously, during the summer, I did not find the mercury above 85°; and I was careful to observe the temperature. At home at the same time it was often above 90°.

There are several other princely estates on the river which ought to be visited, as Evergreen, a little below City Point, the residence of Capt. H. H. Cocke. Florida Hundred, the residence of J. Wilcox, Upper and Lower Brandon, &c., all in Prince George, and Shirley, the residence of H. Carter,—Berkley, the birth-place of Gen. Harrison, Westover, the seat of Col. Bird, now the residence of J. Seldon, in Charles City Co.; several of these my time would not allow me to visit, but their reputation for skilful management and high productiveness, is well established.

After again partaking of the generous hospitality of my excellent friend R. B. Bolling, during most of the time I remained about Petersburg, he was so kind as to accompany me again to his noble estate at Sandy Point. Although this estate has been several times noticed in the Cabinet, I shall, for reasons which may appear more justifiable hereafter, attempt to give a more full description than has heretofore appeared, though it would require many pages to do it full justice. This estate is situated at the junction of the Chickahoming with the James River, at the eastern end of Charles City Co., Va., about half way from Richmond at the head of the tide, to Old Point Comfort, where the latter river enters the Chesapeake Bay. It contains over 7000 acres of land, of excellent neutral "mulatto" soil—considered in the "Essay on Calcareous Manures," as the best quality for agricultural purposes generally; it has a river front of near twelve miles—the river banks are high with a beautiful clean beach, and no marsh or wet land worth naming—affording many most delightful si-

tuations for residences. The river is navigable for the largest ships and a full mile in width, abounding in fine fish, which can be taken all the year; and in winter, wild geese, ducks, &c., are there in great numbers—in the forests, deer, wild turkies, and partriges, are very plenty. Steamboats pass daily up and down the river between Richmond and Petersburg and Norfolk and Old Point, where they connect with the boats to Baltimore and the north—stopping at Sandy Point for passengers or produce. A person can leave this place about noon, and be in Richmond, Petersburg, Norfolk, or Old Point the same afternoon, or in Baltimore by sunrise the next morning, and in Philadelphia five or six hours later. The winters are so short and so mild, that cattle and sheep need very little fodder, the grass being scarcely checked in its growth; and ploughing may go on the whole year almost without any interruption. Harvest comes, and fruits ripen nearly a month earlier than in the vicinity of Philadelphia. Peaches and other fruits and vegetables may be sent to Philadelphia and New York a whole month before they are ready in the vicinity of those cities. The markets for grain, are as good there as any where in the northern States.

About 27,000 acres are cultivated,—all having been limed, and enormous crops of clover being turned under with every ploughing for a crop,—it is all in a very high condition. The wheat field the present year contained 910 acres; the crop was excellent, though much damaged by a remarkably late frost, and by cold and wet weather while in bloom. A very recent letter from the proprietor says, "Thus far we have measured 13,500 bushels, and I do not despair of getting 20 bushels per acre." He is extremely modest in his estimates, and from the best information I could get while there, it will considerably exceed that quantity, and equal at least 20,000 bushels. 545 acres are in corn, which is estimated to average 30 bushels per acre. All the other land is in clover of most luxuriant growth, to be ploughed in as a dressing for wheat—a very small portion being cut for the stock. The whole is most judiciously divided by roads, which are skilfully and nicely graded and kept in the most perfect order. The buildings are numerous and excellent, and well distributed: Large barns with stabling for the stock, are located conveniently over the farm—the arrangement of the stables is admirable, and they are kept in the most perfect order—the manure is constantly removed, and the floors kept covered with gypsum, so that the ammonia is immediately absorbed and preserved in the very best way to be useful to the crops, and the manure is not suffered to lie in the yards, but is hauled out and spread over the clover, which immediately covers it, and appropriates all the nutriment. All of the enormous quantities of straw, too, is spread over the clover, which soon finds it way through it, and by covering and keeping it moist, it soon decomposes and assimilates itself again with the soil, to aid in the production of another crop of wheat. Near the river bank, a short distance west of the mansion, is the spacious barn, with steam engine to work a saw-mill for the use of the farm—a mill for grinding corn-meal,—a mill for grinding plaster,—and threshing machines, which are capable of getting out and cleaning 1000 bushels of wheat or corn in a day. This was at work while I was there, and was one of the most gratifying exhibitions I ever witnessed—its average day's work was about 800 bushels, threshed and cleaned, and put into the bins; but I was told that under the most favourable circumstances, over 1000 bushels could be done. The immense field of 910 acres was harvested and secured in eight days, being put up in the field in large shocks. A sufficient number of teams are employed to bring it into the barn, and so arranged that one is always unloading at the door, and another ready to take its place as soon as it is unloaded—thus keeping the machine employed. The threshers are on the second floor, from which the wheat falls into the fans on the floor below, after passing through the fans it is taken by the elevators to the third story, where it is made to pass through screens, and then by machinery into the bins, almost without any assistance from manual labour—it is a beautiful operation, and would alone repay a visit to Sandy Point—the straw is also removed by machinery to a considerable distance, when it is taken up by the women and boys, who are each provided with a cord, with which they enclose a bundle of such size as they find it convenient to carry, and placing it upon their heads, they mount an inclined plane, and deposit it in immense oblong stacks, the size of which would astonish most of our northern farmers. This barn is surmounted by a neat cupola, in which is a clock with four large faces, which can be seen from nearly all parts of the farm, and the bell which strikes the hours regularly can be heard much further. The vane above, in excellent taste, is a finely formed gilled plough.

Over 4000 acres of this estate is in timber of primitive growth, none ever having been cut except for the use of the farm—competent judges estimate eighty cords to the acre, if all were cut into cord wood; but

there is a vast quantity of white oak of very large growth, and of excellent quality for ship timber and plank—and an equal or greater portion of an immense growth of yellow heart pine of the very best quality: many of the trees are from 50 to 75 feet to the first limb, and from two to three feet in diameter; with these are intermixed much hickory, black and red oak, black walnut, &c., &c.

Cord wood is constantly in great demand on the banks of the river, for the steam boats, and for the eastern cities;—large vessels come and take it to Baltimore, Philadelphia, New York, Boston, &c., &c. On the river bank oak wood sells for $2 50 to $2 75 and pine for $2 25 to $2 50 per cord—it is cut and corded in the woods for 25 to 37½ cts. per cord, and it can be put on the landing for 50 to 75 cts. more—making it worth at least $1 25 to $1 50 standing in the woods. The best heart pine lumber is worth from $20 to $30 per M., and the white oak not less in the northern cities, and it can be taken there for $3 to $5 per M. The vessels from the North River coming after wood, bring back lime, which they sell for six and a quarter cents per bushel; the proprietor of this estate has purchased several hundred thousand bushels at this price.

The noble minded and public spirited proprietor, anxious for the regeneration of his native state, and determined to offer the strongest inducements to northern men of enterprising, industrious, and virtuous habits, to come and establish a prosperous and beautiful colony, offers to sell a large portion of the timber land upon this estate to a company who will be actual settlers after it is cleared, upon terms which must be satisfactory to all, who will give the matter a careful examination. He has fully authorised the subscriber, to form such a company—a plan with full details is now in readiness, which will be shown to any one disposed to enter into it, and any other information will be cheerfully given to all who wish to know more of this or any other neighbourhood visited.

SAMUEL S. GRISCOM.

Moorestown, Burlington Co., N. J.,
Tenth mo., 20th, 1847.

PRODUCTIVE LITTLE FARM.—At a late meeting of the New York Farmers' Club, the committee on farms reported that that of Messrs. Cooper, near Bushwic, Long Island, containing thirty acres, was a model for thorough culture and extensive products. They have four men to work it, and occasionally men, women and children to pick and weed. The products the present season are—342 bushels of peas in pod, sold at 75 cents; 1000 bushels of potatoes, sold at 69 cents per bushel; and 500 bushels to dig; 1200 bushels of tomatoes, sold at 50 cents per bushel; 1200 do. of bush beans, sold at 44 cents a bushel; 75 bushels of wheat: and they have growing 4000 poles of lima beans, three acres of corn, one and a half of turnips, one and a half of cabbages, one-twentieth of an acre in cayenne peppers; besides raising hay enough for their stock. That sold has yielded them $2508 75—that on hand is valued at $993 50—making a total of $3498 25 off of thirty acres.

Rye among Wheat to prevent the Fly.

WE are quite inclined to the opinion, that our correspondent below from Ohio, may much more attribute his escape from the fly, while his neighbour was injured by it, to the superior condition of his land, than to the rye among his wheat. Good land, and seed well and timely put in the ground, are among the excellent means of overcoming, if not of preventing the fly.—ED.

To the Editor of the Farmers' Cabinet:

I noticed in your September No. of the Cabinet, an article supposing the "weevil in wheat" had been prevented by sowing a small quantity of rye among the wheat.

I seeded ten acres last fall with Mediterranean, about the 20th of September. There was a small quantity of rye which got into the seed accidentally; about two acres of it were seeded with old wheat, and had considerable more rye in it. This kind falls down before harvest, which is all the fault it has; it is in good repute here.

The soil is a sandy loam, rather inclined to stiffness, with a brittle clay sub-soil; it is in good condition, having been cleared twelve years. I have had it in possession nearly ten, and cultivated it with a four course: wheat, corn, barley, and clover; it was clover pasture, broken in middle of August; I then harrowed twice at an interval of nine days. The seed was shovel-ploughed in. I dunged it for corn, and the last two courses for wheat. I have threshed enough to ascertain the yield will be a little over twenty bushels per acre. The fly or weevil was on it, but not to hurt it much.

My neighbour, on the farm adjoining, broke a clover pasture the latter end of June, ploughed second time just before he seeded it, and harrowed it in. The land is very similar to mine, only not quite so stiff; both fields slope to the north, on the same side of Mill Creek. The kind of wheat was the red chaff bearded. I did not see a single

stalk of rye among it; but the fly, or weevil, had damaged it considerably. I went into the field while they were reaping it, and estimated the crop at eight bushels per acre. The land was much lower in condition than mine; it had clover sown twice in eighteen years; but no dung;—four persons had occupied it in that time. B.

THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

PHILADELPHIA, ELEVENTH MONTH, 1847.

BOSTON and its vicinity have long been famous for the successful cultivation of the pear. At the annual exhibition of the Massachusetts Horticultural Society in the Ninth month last, R. Manning as usual, "led off" with two hundred and fifty-five sorts, some of which, we learn from Hovey's Magazine, were large and fine. The President of the Society, M. P. Wilder, exhibited one hundred and fifty-nine kinds, many of them entirely new. Hovey & Co. had seventy varieties, more than half of them shown for the first time. Of the grapes exhibited, the Magazine assures us, that the magnificent specimens in the rooms, left little to be desired for further improvement. Numerous other persons brought forward fifty or sixty or eighty varieties of pears, and five and twenty or thirty of grapes. Boston is a great place for the amateur in fruit.

FOREIGN papers assure us, that within the last two years in New South Wales, more than 350,000 cattle and sheep have been slaughtered and boiled up for their tallow.

WE suppose that our correspondent "L," on page 81, of last No., forgot to acknowledge what he should certainly have done, that the statements forwarded were taken from the *American Agriculturist*, one of our numerous excellent agricultural papers.

UPWARDS of 22,000 barrels of apples were imported into this city, during the last month; chiefly from the eastern States and New York.

As frequent enquiries are made by the subscribers to *Colman's Tour*, when the ninth number will probably appear—it is proper to state, that we are unable to give the desired information. When we last heard of our friend he was in Switzerland prosecuting the objects of his journey, and looking closely into its agricultural operations. It was his intention to continue his travels into Italy and France, before making up the matter for his ninth and tenth numbers. These will give his views of the Agriculture of the Continent, and close the work. It has been much longer in hand than was anticipated—but we trust it will not be the less valuable. Without being advised in the matter, we shall look for the two succeeding numbers during the coming winter. As soon as it shall be in our power, our subscribers shall receive them.

THE quantity of rain which fell in the 10th month 1847, was ..... 3 in.

Penn. Hospital, 11th mo. 1st.

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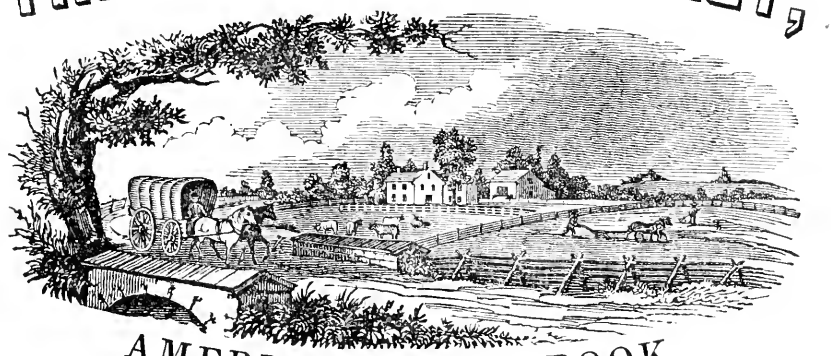
Joseph Rakestraw, Printer.

THE FARMERS' CABINET,

AND



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Perfect Agriculture is the true foundation of all trade and industry.—LIEBIG.

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BY JOSIAH TATUM,

EDITOR AND PROPRIETOR,

No. 50 North Fourth Street,

PHILADELPHIA.

Price one dollar per year.—For conditions see last page.

For the Farmers' Cabinet.

House-feeding Sheep.

MR. EDITOR,—Your account of the stall-feeding establishment for sheep, at Swainston,* in the Isle of Wight, is interesting, very. I love to see gentlemen amuse themselves in this way, and Sir Richard Simeon is a man who knows how such things ought to be done.

It is now about twenty-five years ago that I visited him at his princely estate of St. Johns, near Ryle, for the purpose of examining his piggery, well deserving its name of "Hog Palace," which covered a very large space of ground, divided into apartments for every purpose, and where I saw several hundred hogs, young and old, all of the white breed, which were kept as clean as the horses in his stables, feeding on the fat of the land; for the milk of a dairy of more than fifty Short-horned cows, valued at many hundred dollars per head, after yielding cream for butter, was devoted to their use, being poured into large cisterns sunk in the ground, to which barley meal was added; this being stirred with a large spatula, soon began to ferment, when it was fed to the hogs; while other cisterns were preparing for their use in the same way. And this, being fed to the whole herd from their youth up, no wonder that many of them could not rise without help, nor see out of their eyes for fat. Here, any man wanting to purchase a fat hog, went and selected one for himself, which was killed and dressed the next day, by the slaughterman of the establishment, ready for delivery; with the fat, liver, &c., belonging to it, "all in apple-pie order," as the neighbours used to term it. I remember, the price, at the time I speak of, was 8*d.* or 16 cents per lb., but it was conceded by all, that every pound so fatted, had cost a third more than it sold for. Sir Richard was particularly choice of this breed of hogs; I was informed, that he had just sent a sow by horse and cart, a distance of one hundred and twenty miles, to obtain a cross with a premium boar, in possession of another *Lossing*, at that distance from his establishment. But all would not do, *there*, any more than *here*, for the breed run out, and dwindled down into a race of *pigmies*, and then the establishment *went* out.

Sir Richard was also famous for raising green crops for his stock of cattle and horses, going in for a very large growth of roots. At the time of my visit, I saw, packed with

* See current volume of Cabinet, p. 94.

straw in the farm-yard, a large heap of mangel wurzel, the produce of sixty acres; with thousands of bushels of potatoes in cellars, whence they were taken to be roasted in a large oven, expensively erected, with iron doors, and newly invented apparatus for economising fuel, &c.; and then they were fed to the cows, and, as I understood, to the horses also. After this, I heard that Sir Richard went largely into the carrot and parsnip culture, and succeeded to admiration, although it must be admitted, the nature of his land was cold, wet and poor, resting on a hungry clay gravel; "but such a man can make a gold mine anywhere," as the saying was: but with him too, as with every man since the days of king Solomon, when gold was the precious metal, and still continues so to be, it takes a guinea in gold, to make twenty shillings in silver.

Sir Richard Simeon is a nobleman, in the best acceptation of the term. Noble by birth, parentage and education, he is the friend of the poor, and the companion of the rich and great. He inherits the beautiful seat of St. Johns, from his uncle, Sir R. Simeon, Bart., and the inimitably elegant mansion of Swainstone, in right of his lady, the eldest niece of Sir John Barrington, Bart. There may be those amongst your readers who can remember the character of the pleasure grounds of Swainstone, in the time of Sir John; if so, I pray them to attempt a description, as they were known by the appellation, the *Willow Woods*, and I will thank them. Often as I have visited them, I confess I should feel at a loss how to begin; the account of the *Leesowes* might afford them a text to preach from.

I am truly glad to find that Sir Richard Simeon still lives, and retains his love of the country and its pursuits—may he live a hundred years; but his sheep stall-fatting establishment, like his Hog Palace, are more to be admired than coveted, by men who have a living to obtain, instead of a fortune to inherit.

P. W.

A Discourse upon Agriculture.

At a Meeting of the Citizens of Oxford and vicinity, Chester County, Pa., assembled for the purpose of forming an Agricultural Society, September 4, 1847.

By William Darlington, M. D.

And he gave it for his opinion, "that whoever could make two ears of corn, or two blades of grass, to grow upon a spot of ground where only one grew before, would deserve better of mankind, and do more essential service to his country, than the whole race of politicians put together."—*Gulliver's Travels.*

Gentlemen,—Having, on some previous occasions, uttered all that I really had to say, in reference to the noble pursuit in which you are engaged,—I had arrived at the very natural conclusion, that I was finally done with the subject: but a call for a renewed evidence of my good will to the cause, proceeding from a district of my native county in which agricultural skill and enterprise are so conspicuous, was found to be irrisistible—notwithstanding my conscious inability to respond, in appropriate terms, to the flattering invitation. Were it as practicable to renovate an exhausted intellect, as it is to restore verdure and fertility to a worn-out soil, the demonstrations of successful culture in this vicinity, might almost warrant a hope of reproducing before you—with something of original freshness—the results of past observations and reflection: for, in truth, I can but serve up, anew, thoughts and opinions which have been long entertained and repeatedly expressed. It is vain, however, to apply the theory of terrestrial culture to cases of intellectual exhaustion; and therefore I must rely entirely upon your good nature, to tolerate the repetition of views which have been heretofore presented to my agricultural fellow citizens.

In complying with the request to prepare a discourse for this occasion, there was an additional motive to the effort, in the recollection that a goodly portion of the improvement, everywhere so visible in this region, owes its introduction to the discernment, skill, and persevering energy of a departed friend, whose memory is deservedly dear to all who knew him,—and will be especially cherished in the district where his example was so beneficial to all around him. I have long felt that some tribute, or testimonial, was due to the memory and services of one who did so much for the advancement both of agriculture and manufactures; and the present seemed a fitting opportunity for an attempt to discharge that duty. To the older residents of the vicinage, it will be unnecessary to say, that my allusion is to the late Col. David Dickey,—a man whose uprightness, sagacity, and active public spirit, rendered him an ornament and a benefactor to the community in which he lived. It was my happiness to know him well: and the last public employment in which either of us was engaged, made it my agreeable duty to serve as his colleague, in a joint commission from the several counties traversed by the *State Road*,—which, passing

in our midst, extends from New Jersey to the Maryland line.* That service, I have the satisfaction to believe, was performed in a manner generally acceptable to those concerned: and it is but justice to the memory of my lamented colleague, to say, that much of the value of that performance was owing to the same zeal, activity, and sound judgment, which he had previously displayed in his agricultural improvements. His was, emphatically, one of those enterprising spirits which are sent among us from time to time—and as it were providentially—to demonstrate, and to teach thoughtless, sluggish mortals, how much an *individual* may accomplish, in promoting the welfare of our race. But if *individuals*, by their isolated efforts and example, can exert such a salutary influence upon the community—what may we not hope from the joint labours of *associated* intelligence? It will scarcely be questioned, I think, that we were designed for social beings. Man is, by nature, a gregarious animal,—and evidently intended for the performance of mutual good offices. Even in his rudest condition, he soon learns the importance of co-operation with his fellows in producing desired results: and as he advances in civilization and refinement, he discovers that the benefits to be derived from combined skill and energy are in a direct ratio with his progress in improvement. The developments of science not only excite a salutary emulation among individuals, —but they also show how much more may be accomplished by a concentration of effort —by a skilful union and concert, of individual talent and energy. Hence the resort to *Societies*, for the promotion of desirable objects. By a judicious combination of their several means, and capacities, in the mode best suited to render them all available, men have accomplished purposes which, *individually*, they could never hope to perform.

Associated efforts having been found thus valuable, in all great works of Art, requiring skill and force—and in the prosecution of researches after scientific truth,—the inquiry is naturally suggested, why the important business of *agriculture*, may not, also, be benefitted by a resort to similar expedients. Is there no sort of knowledge involved in successful agriculture, which may be reciprocated, with good effect, among the members of a Society—or promoted by a generous co-operation? Is there no scientific or practical skill requisite, in the amelioration of soils—the culture of plants—or the management of stock—which may be advantageously imparted by the experienced, for the benefit of young beginners? If there are truths in nature, which farmers are interested to know—or processes in Art, wherein dexterity and economy are desirable,—can any good reason be assigned why the cultivators of the soil should not associate, to secure to themselves those advantages? It may, perhaps, be alleged,—for the unreflecting do often make such random allegations,—that agriculture is essentially a *practical* Profession; and therefore has little occasion for artistical skill, or scientific accomplishments. I am prepared to admit all that can be fairly urged in behalf of sound experience and plain practical common sense —not only in agriculture, but—in all human pursuits. I grant that the cultivation of the soil is eminently a matter-of-fact business. It is true, moreover, that the veriest clodpoll in the land may pursue the beaten track of his annual labours with tolerable success, —and may gather in his crops with little more knowledge of the objects around him, than is possessed by the cattle he drives: but I can never believe that *true knowledge* is injurious to the operatives, or to the interests of any profession or business;—nor can I be persuaded that boorish ignorance is the proper condition and character of a thorough bred agriculturist. Most assuredly, it is not the appropriate character of an American farmer. While I not only agree, but would insist, that a sound *practical* knowledge of their profession should be the primary object of the cultivators of the soil,—I must, at the same time, contend for the feasibility and necessity—in the existing state of society, and under institutions like ours—of an adequate acquaintance with the laws of nature, and with the properties and true character of the objects immediately concerned in agriculture. That acquaintance, of course, should be based on correct scientific principles,—so as to be always available when applied to the useful purposes of life. I hold it, indeed, to be essential to the safety and duration of this Republic, that our *yeomanry* should keep pace with the march of general intelligence. As they value their just rights, and would cherish the attributes of freemen, they must take care that their attainments never lag behind the age in which they live, —nor they, themselves, become unfit to mingle, and to struggle, with the master spirits who, for good or for evil, are ever seeking to direct the course and control the progress of communities. *Agriculturists* being a

* This road begins at the Bridge over the Delaware, at New Hope, and crossing the counties of Bucks and Montgomery, passes along the whole length of Chester county, through the Boroughs of West Chesler and Oxford, and part of Lancaster county, to the Maryland line.—Ed. Cab.

majority of this nation, it is perfectly obvious that they must be either the intelligent regulators of its glorious career,—or the blind instruments of its destiny in the hands of artful demagogues;—and consequently they will be held responsible for the fate of the Republic, by their remotest posterity. Ought they not, then, to employ every means, and exert every nerve, to qualify themselves for the high duties thus devolved upon them?

There is nothing unreasonable, nor extraordinary, in the acquirements thus indicated as appropriate and indispensable to the *American farmer*. In a nation fitted for freedom—or which hopes to continue free—such attainments are enjoined upon all classes and descriptions of the people.* Where men stand unfettered on the platform of equal rights, it is justly expected of every one, that he shall qualify himself to meet all the responsibilities belonging to his station in society: and this is eminently true of the particular business to which he is devoted. The remark is as correct as it is pointed and forcible, that "where knowledge is a duty, ignorance is a crime." No man should be held excusable for neglecting the opportunity to inform himself of that which it is his interest and his duty to know. *Professional men*, so termed, are bound to be familiar with the entire history, and with every department of their several callings. The *Jurist* must make himself acquainted with the intellectual processes whence our present *rule of action* has been deduced,—in order that he may correctly apply that rule to all cases of difficulty between man and man. The *Physician* is required to know the structure of the human body, and to understand the laws of the animal economy,—so that he may avail himself of that knowledge, when called upon to relieve the various "ills that flesh is heir to." And the *Divine*, also—whose sacred office it is to minister to our spiritual wants,—to expound the objects of our probationary existence here, and "vindicate the ways of God to man,"—even he is expected to furnish "a reason for the faith that is in him." *Artists* and operatists of every description, who would adorn their several pursuits, find it necessary to understand the *theory*, or principles, involved in their manipulations,—as well as to become expert in the practical details. Such being the unquestionable fact, in reference to all other vocations,—it may well be demanded, why the business of *agriculture*—itself a comprehensive system of natural science, involving more or less an acquaintance with all physical laws, and all terrestrial phenomena—and being moreover the great substratum and support of every other human pursuit—*why should agriculture, alone*, of all earthly employments, be regarded as calling for no scientific attainments—no intelligent observation of the varied natural objects, the interesting facts, and curious processes around us: in other words—no rational exercise of the intellectual faculties with which a beneficent Creator has endowed us? It was, indeed, wisely provided, that an art to which the whole human family is indebted for sustenance, should be so simple in its essential features, that even stupidity can make a living, and mere muscular energy be profitably employed in its prosecution: but, in the nature of things, it cannot be, that a business involving so much of Natural History—and controlled by so many of the laws indelibly impressed upon matter,—it can never be predicated of such a pursuit, that a knowledge of its true principles is superfluous—nor that its best interests may not be promoted by a cultivated intellect. I shall therefore assume, as an established position, that a knowledge of the profession, *in all its relations*, is requisite to ensure the perfection of agriculture, and to elevate it to its proper rank; and moreover, that in a country where laws rule, and the yeomanry have a potential voice in their enactment, it is indispensable to the perpetuity of their institutions, that an agricultural people should be an educated and an intelligent people.

I shall not venture, on this occasion, to trespass upon your patience, by dwelling on the practical details of the farmer. I shall make no idle attempt to entertain *you*, by descanting on the culture of fields, or the management of stock. Instead of essaying, *here*, to teach those first lessons in the art of giving fertility to the soil, it would become me rather to seek instruction from those who have so happily demonstrated how it can be done. I have not now to learn, that *this* is precisely the district of our county, where a renovating agriculture has achieved its greatest triumphs. I shall, therefore, avoid the well-understood topics of lime and manures, and the rotation of crops: and will solicit your indulgence for a few moments, while I advert to the expediency of promoting some of the more intellectual qualifications of the farmer,—those interesting attainments which give an appropriate finish to the agricultural character,

* We have the authority of that excellent man and accomplished friend of human rights, Sir William Jones, for the opinion, that "The principles of government are so obvious and intelligible, that a clown may be brought to understand them."

and impart an additional dignity and grace to the profession.

This, indeed, has been a favourite theme with me, on occasions like the present: for wherever *practical* excellence was known to be established, my attention was naturally directed to those ulterior accomplishments—hitherto so little regarded—and yet, in my judgment, so worthy to be superadded. When the intelligent young farmer has become expert in all the *manual* operations of his profession, and understands the whole *practical routine* of agriculture,—what can more appropriately claim his attention, than the intimate nature,—the structure or composition, the properties and relations—of the various objects involved in his pursuit? Why should he not make himself acquainted—*scientifically* acquainted—with the character of the several *earths* which compose the soil he cultivates? Knowledge of that description—and sufficient for all useful purposes—is readily acquired by the mind that craves rational intelligence; and when once obtained, may often be turned to good account by its possessor. It may not only enable him to become a more successful cultivator, but it will also greatly enhance his interest in his employments, rendering him a wiser and a happier man. The occupation of the farmer, as already remarked, is emphatically with the objects of *Natural History;* and the contemplation of those objects, by an observing and disciplined mind, is a continual source of instruction and gratification. His studies, indeed, are mainly *ultilitarian* in their character: but if rightly directed, are calculated to expand and elevate his views of the Creator's works: for they embrace, to some extent, the three grand divisions of the material world—the Mineral, the Vegetable, and the Animal kingdoms. The first business of the skilful agriculturist, is with the inorganic matter of the *Mineral* kingdom,—so far, at least, as may be requisite to understand the quality of the *soil*, and the best mode of improving and managing it; so that it shall sustain the greatest amount of organic life. His next care will be extended to the primary *organized* beings, viz: the *Vegetable* creation; so regulating the production as to secure the largest contribution towards the sustenance of the most valuable animals. This is *agriculture*, in a technical and restricted sense—i. e. *the culture of the fields*,—and implies, of course, an acquaintance with the *plants* cultivated, or a portion of what is denominated *botanical* science. But the end and aim of the farmer's operations, in the promotion of vegetable growth, is to support the higher organization of the *animal* kingdom,—and by the multiplication of his flocks and herds, to enhance the comforts and favour the increase of the human family. Hence the science of *Zoology* is involved, and the wonderful laws of the animal economy present a claim to be studied and understood. Thus it is manifest that the farmer is directly interested in possessing *some* knowledge of the three great kingdoms in Nature; and it will scarcely be doubted that his knowledge, of whatever extent, will be valuable in proportion to its *scientific accuracy.*

I would, therefore exhort our young farmers to acquire so much Natural Science as will enable them certainly to know, and to discriminate between the more important objects of their daily care and attention,—and by means of which they may also treat of those objects intelligently and correctly, in their intercourse with others. They should be so far acquainted with *Geology* and *Minerals*, and understand so much of *Chemistry* and its laws, as to have a general idea of the structure and stratification of the earth's crust, and a just conception of the reciprocal influences exerted by the constituent portions of the soil and the atmosphere. This information may now be readily obtained from elementary works within the reach of every one who has the taste or the inclination to possess it: but, that all might have a fair and equal opportunity to profit by such knowledge, according to their several capacities, it should be made an indispensable branch of the education of youth, and faithfully imparted, by competent teachers, to every child in the Republic. Until such instruction shall be provided, it may be confidently maintained, that no better substitute can be devised than is afforded by the intercourse of intelligent public spirited men, in well conducted *Associations.*

Similar remarks may be applied to the expediency of a reasonable acquaintance with the *Vegetable* and the *Animal* kingdoms. What sort of an agriculturist is he—in this age and country—who is so ignorant of the interesting *plants* on his own farm, as to be continually overlooking the most pernicious weeds, when they invade his premises; or mistaking, for them, those of a comparatively harmless character; and who knows so little, even of those he annually cultivates, as to be unable to designate them by a name that is certainty comprehended beyond the limits of his native parish? Is the young American farmer, who can rest contented with such imperfect intelligence in his immediate profession,—is *he* calculated,—in this progressive era—to advance the interests, or maintain the appropriate rank, of

that first and noblest, and most indispensable of secular employments? Surely it ought not to be thus with *agriculture*—when all the kindred sciences are going ahead with rail-road velocity. The several departments of knowledge are auxiliary to each other. They reciprocate lights, by which their obscurest truths are illustrated. They should, therefore, all proceed with equal step. It is not necessary, neither would it be expedient, for the practical farmer to spend his time in studying the unimportant species of the vegetable creation, nor in tracing the distinctive features of all the various tribes—"from the cedar tree that is in Lebanon, even unto the hyssop that springeth out of the wall." But, as his business is especially with the more interesting kinds—with the *culture of useful plants*, and the *extirpation of pernicious weeds*,—I hold it to be his duty to acquire a knowledge of *these;* and such a knowledge, too, as shall be adequate, both to the proper management of them, and to the delineation, when called for, of their true botanical character. This would be a limited task, and an easy attainment, quite within the reach of every ordinary capacity. Some three or four hundred species, comprise all the more important plants usually observable on our farms—whether in the forest, the fields, or the kitchen-garden; and it must be an obtuse intellect, indeed, which cannot learn to know and distinguish that number of vegetable forms. The juvenile pupils of some of our female seminaries are, every year, demonstrating the facility with which the task may be performed.*

I shall not detain you with observations concerning the importance of *zoological* information: for *that* is a kind of knowledge so intimately connected with our prosperity and comfort, that we cannot well avoid the acquisition of a reasonable share,—at least, with reference to the larger animals which are domesticated, or indispensable on the farm. Our daily habits and associations force the attainment on us all. The rudest bumpkin that ever heedlessly trampled upon flowers, or worked among weeds, without being able to distinguish one from another, is nevertheless compelled to become acquainted, in some degree, with both the valuable and the mischievous animals,—fowls, as well as quadrupeds: indeed, it is wonderful to observe how well, and thoroughly, such untutored persons do often learn the distinguishing traits, the dispositions, and the characteristic peculiarities, of animated nature. Still, there is a *scientific aspect*, of which every department of Natural History is susceptible,—under which it assumes a methodical perspicuity, an illustrative arrangement, which is exceedingly gratifying, as well as instructive, and merits the attention of all inquiring minds. There is, moreover, a *branch* of Zoology, embracing myriads of tiny creatures, and many of them of the most destructive character to the hopes of the farmer, which is yet imperfectly understood, and demands the closest scrutiny of every one concerned in the products of the vegetable kingdom. I refer, of course, to the multitudinous *insect* tribes; some of which are occasionally so injurious as to spread dismay throughout whole nations,—and, at the same time, of habits so obscure as to require the most patient observation, and the utmost sagacity, to ascertain their true history. Even these minute researches, too generally neglected or despised, are demanded by the best interests of agriculture; and to be successful, they must be conducted on scientific principles. A little mental discipline, however—backed by perseverance—will soon enable the curious observer of nature to make valuable contributions to the common stock of information. I would, therefore, have every *American farmer*, who can appreciate the responsibilities of his position, to cultivate his intellect with the same care and assiduity that he does his acres. Let him habituate himself to note the facts, to observe the phenomena, and to investigate the theory of the processes, which are continually taking place around him: and let no one delude himself into the belief, nor seek to excuse his deficiencies by the stale and hackneyed plea, that he has not *time* for such pursuits. Why, those very pursuits are part and parcel—and a very important part, too—of his own appropriate business. It is precisely for such business that his *time* is allotted to him. At this day, and in this land, it will not do, to urge the want, either of time or opportunity, for the due performance of our parts in life. Most people contrive to find time for what they really wish to do; and if driven to the necessity, are apt to *take* it, at any rate, for

* It may, perhaps, be admissible to mention, here, that I have recently compiled a sort of *Farmer's Flora*,—or a descriptive enumeration of those Plants which are most interesting to the American Agriculturist—and of which it is scarcely reputable to be ignorant. It was prepared in the hope of thereby promoting a kind of knowledge which I have long thought desirable,—and is designed more especially for the use of our enterprising *young farmers*. I would beg leave to add, however, that I have not the slightest personal, or pecuniary interest, in the success of the work;—for I made a *present* of the manuscript to the first Printer I found, who had the courage to risk the publication.

those pursuits which they are resolved upon. But the fact is, we all idle away, or waste in frivolous amusements, more time than would be requisite to fit us for the performance of our several duties. We are very prone to mistake the real nature of our *wants*. It is not so much to the *want of time*, as to the *want of inclination*, and of a proper sense of our responsibilities, that we should attribute our failure to possess the accomplishments which justly pertain to our profession, and station in society. It is *this want*—this neglect of the more elevated attainments, and this lack of a just perception of the beautiful—which has, hitherto, been most striking and conspicuous among the agriculturists of our country. While our farmers have generally attended, faithfully and successfully, to what is familiarly and truly denominated "the main chance," it must be confessed that too many among them have exhibited a lamentable want of tact and skill in planning and improving, or in availing themselves of natural advantages in the arrangement of their rural establishments.

Next in importance to successful culture, and a correct knowledge of the objects and principles involved in the process, is the attainment known as good *taste*, or that refined sense of the beauties of nature, which knows how to appropriate her charms, in the embellishment of farm houses, or cottages; and to invest them with that witchery and grace which should ever be associated with a country residence. No person, who has enjoyed the delights of a tasteful rustic dwelling, embossed among venerable trees, and reposing amid the verdure of flower-spangled lawns, can fail to be shocked at the contrast of a rude vulgar looking tenement, awkwardly stuck in some open weed-grown space, without a shade-tree, or an enclosure, to protect it from the rays of a burning sun, or the annoying approaches of the trampling cattle: and yet the difference may be entirely owing to the exercise of a cultivated taste in the one case, and a total destitution of it in the other. *Fruit trees*, and *shade trees*, should be regarded as indispensable appendages of every human residence. If duly attended to, the former will amply gratify the palate, while the latter will also minister to our enjoyment, directly, by the refreshing shelter afforded to ourselves, and indirectly, by attracting to their branches the lovely serenaders of the feathered race. How delightful in a tree-embowered cottage, to be roused from our slumbers by the gushing melodies, which, in such abodes, ever greet the dawn of a summer morning! By providing a shady retreat for the little warblers, and protecting them from the weapons of reckless sportsmen, we not only secure their punctual attendance, with the grateful tribute of their vocal strains, on each returning spring; but we are rewarded, tenfold, for all such benevolent offices, by the industry with which the welcome visitors labour to rid us of annoying and destructive insects. It should, therefore, be the business and the pleasure of the intelligent farmer, wherever located, thus to improve and adorn his premises. In a region so rich in native attractions, as our own favoured *county of Chester*, it should be the study and ambition of every occupant of her soil, to develop all her agricultural resources, to acquire for himself the knowledge and scientific skill which rightfully belong to his profession, and by the exercise of a refined taste, to make our ancient bailiwick as eminent for the beauty of her country seats, as she has long been for the neatness and fertility of her cultivated fields.

For the Farmers' Cabinet.

Upland Cranberries.

We have so often written upon the subject of Upland Cranberries, as to be almost ashamed of saying anything more; but at the risk of being considered as having but one idea, will give some facts from the culture of our friend, Mr. Gardner, of Mass., of this year. In writing to me lately, he says, "My swamp cranberry vines were much injured by a late frost in June. An early frost in the fall completed the destruction of fruit for this season. My upland plants bore a full crop, having escaped both the spring and fall frosts."

B. G. Boswell.

Philad., Dec. 9th, 1847.

Longevity of Trees.—Trees are naturally very long lived, and grow to a vast size. In Britain, there are still extant and growing, oaks, and probably elms, which were planted before the Conquest, *i. e.*, more than 800 years ago. And there are yew trees much older still. There are some at Fountain Abbey, near Ripon, in Yorkshire, which are believed to be more than 1200 years old; two in the church-yard in Crowhurst in Surrey, 1450 years—one at Fortingall in Perthshire, 2500 to 2600 years; one in Brabourn church-yard in Kent, is said to have attained the age of 3000 years: and another at Hedsor in Bucks county, which is in full vigor, and measures above 27 feet in diameter—appears to be upwards of 3200 years old.

Holkham, the Seat of the Earl of Leicester.

This magnificent place has been hitherto known to the public chiefly for its agriculture, and the princely hospitality of its owners. Men of all countries have been here to learn the arts of rearing the best breeds of cattle, and of turning the soil to the best account; and no one doubts that the examples here given have been the means of stimulating many throughout the world to carry out similar improvements. There is, however, an additional lesson very legibly displayed here, which proprietors would do well to attend to—I mean its foresting. Trees anywhere, in good land even, are triumphs; they are looked upon as such in rich sheltered valleys, on slopes with mountains at their back; but to have them of commanding stature, in defiance of every obstruction, soil, situation, climate—a biting sea air in this instance—is an achievement which ought at least to be noted and commended to all who have lands similarly situated. The late Sir Fowell Buxton took the hint, and not the least of his legacies was a series of thriving plantations stretched along the side of the German ocean at Runton and Trimmingham.

Holkham, "on an open, barren estate, was planned, planted, built, decorated and inhabited in the middle of the eighteenth century. Such is the record over the entrance door into the hall. Ceres and Sylvanus have now their temples here; and it would be difficult indeed to find an estate over which cornfields and woodlands are more judiciously interspersed. The sale of the timber alone realizes about £4,300 yearly.

The chief object of this notice is to draw the attention of land proprietors who have poor lands near the sea, to a grand feature at this seat, caused by the introduction of the Evergreen oak—*Quercus ilex*. It is here, as a timber tree, magnificent beyond example in this country, and in the greatest profusion. Its appearance in the Holkham woods, proves two things: 1st, that the tree is well suited to dry exposed soils within the influence of the sea air, as has been frequently stated in the Chronicle; and 2ndly, that on chalk bottoms it is entitled to a place beside the beech. In the obelisk wood here, a great part of which is on chalk, it is in several instances intermixed with the common English oak, which it surpasses both in height and bulk, growing luxuriantly after the latter has ceased to thrive.

Of the Evergreen oak as an ornamental object, especially in autumn and throughout winter, it is unnecessary to speak. The only hindrance to its more general cultivation is its high price, and the uncertainty of its growing when transplanted. I am happy to say that Mr. Gorrie, the forester here, has the merit of obviating the latter objection, and with it the former will, no doubt, be considerably modified. He transplants the seedlings about mid-summer, a plan which has turned out to be completely successful. Following his recommendation, I had several hundred put into small pots in the latter part of June, and I now find that they are not only all alive, but have made a second growth. Those who are in the practice of raising seedling Ilexes, will have observed that they complete their first growth in June, and that towards the end of the month the buds assume the appearance of maturity, the leaves becoming rigid and glossy, and that the whole plant is apparently prepared for winter. A few weeks elapse, and it is observed that they commence to shoot with renewed vigor, making in some instances about six inches of additional wood. It is during the interval of rest, therefore, that the plants should be removed. It is of course necessary to shade them from sunshine, and to water them copiously for a week or so after being transplanted.

All who visit this seat, and are interested in this tree, had better ask particularly for the Ilexes in the Obelisk wood; for after walking forty miles, a few years since, for the purpose of seeing the best trees, those only on the lawn in front of the house were shown to me. They are certainly fine, spreading, park-like objects; but the others are majestic and forest-like, and almost justify the extravagant language of Pliny, when writing of the species as it grew about Rome. One tree in this district measures 15 feet in circumference at a foot from the ground; another is eight feet four inches in circumference, has 28 feet of a clear hole, and is 70 feet high: a third is nine feet in circumference, has a clean hole of 20 feet, and is 75 feet high: another is 12 feet in circumference and covers a space of 22 yards in diameter.

The usual approach to this seat, on the Fakenham road, is skirted with thriving young trees of the Araucaria and Cedrus deodara, which in a few years more will be large enough to confer a striking and graceful effect. A considerable number of the latter has been raised from the seed by Mr. Gorrie, and it is intended to plant them on an extensive scale, both as ornamental objects and forest trees. The Araucaria grows here without the slightest protection during winter; and it will be interesting to those who are about to plant within the influence

of the sea, to know that they may safely include the Laurustinus as a shrub which will succeed well in such places. Here it is used in some instances as a hedge plant, and in this capacity, it stood throughout the last severe winter without being injured.

The whole sylvan picture at this seat forms a profitable study. The lesson is, this great woodland, its beauty, the shelter it gives to bleak lands, and the splendid revenue derived from it, may be repeated elsewhere through diligence and perseverance. Nature is the same to all without distinction; and if we find her in any instance wearing a richer or more valuable garb than she displays over other lands similarly circumstanced, it is only because her favours have been in that instance sought in a more liberal spirit. Draining, subsoiling, and manuring, are amongst the petitioners whom she always answers.—*Gardener's Chronicle.*

Chess,—Deep Ploughing.

An intelligent farmer of Berkley county in Virginia, makes the following remarks in a letter recently received from him, dated the 4th inst., although our own opinion in the matter is not shaken; yet the fact as stated, in regard to the chess, is curious, and adds one more to that long catalogue, which has perplexed naturalists, without convincing them that nature would do anything, so entirely and thoroughly out of her usual course. Wheat, we believe, never yet, turned to chess, and never will.—Ed.

In order to add some information to what has not yet been conclusively settled by agricultural writers, I would state, that my neighbour, a very intelligent farmer, received a beautiful sample of wheat—about a pint—this fall one year since, and carefully drilled it in the corner of a field, which this last harvest produced 20 bushels to the acre; it was the corner next his house and barnyard. I saw it just before harvest; it had been drilled in four rows, 60 feet long, and every particle but about a dozen heads was cheat;—this experiment has conclusively persuaded me that wheat will turn to cheat; my neighbour accounted for it by its having been eaten off late in the spring by chickens; if this be true, it was a little remarkable, that the wheat not one foot from it of another variety, was a thick, regular, and fine crop of wheat.

Experiments upon deep ploughing for corn, have been carefully performed, and the result has been that in a dry season, the corn will suffer much more than when the ground is left compact. I know this is opposed to the general impression, but I have seen the experiment this past year so clearly and carefully performed, that I begin to doubt my former opinion, that deep ploughing was essential for this crop—the soil was a lime stone slate—the corn planted with a sharp stick, in ground which had not been ploughed for a year; its after cultivation was removing the weeds with a hoe.

From the Horticulturist.

On the Use of Water in Transplanting Trees.

This is a practice which is condemned by many gardening writers; but is their objection founded on careful experiment; or has the subject, like so many others, been prejudged? Experience and reflection have given me a high opinion of the use of water in transplanting trees, and I will give you a brief description of my method, which you may take for what it is worth.

After preparing the border for the tree, I take out sufficient earth to give the roots room to lie in their natural position. This earth is finely pulverized. One man now holds the tree in a perpendicular position, with its roots in the hole, while another pours two pailsfull of water into the hole, and a third slowly sifts the fine soil into the water, being at the same time careful to fill the outsides of the hole so as to keep the water about the tree.

This process leaves the roots exactly in the position which they occupied before removal, and it makes the earth settle about them in the most perfect manner. If the soil is fine, and if it is sifted into the water slowly, it is deposited on every side, and every part of the roots, filling all of the holes and interstices, coming in contact with the smallest fibre, and covering the surface with perfect uniformity, like the deposits of gold in galvanic gilding.

Trees set in this manner, maintain their upright position much better than trees set by the ordinary method. If you take hold of a tree immediately after it is set, in the way I have described, you can pull it over very easily, but after it has stood a few hours, it feels as if it had grown in its new position.

Finally, I am confident, from practice, that the trees are more certain to live and grow vigorously when water is used in this way, while they are being planted. After losing a great number of trees, I adopted this plan of transplanting, and have since set about five hundred, out of which I have lost about a dozen, and I think most of these were dead when they were removed.

George Bartlett.

Smithfield, R. I., Oct. 7th, 1847.

Prince George Agricultural Society.

We make the following extracts from an Address delivered by Thomas F. Bowie, on the 15th of Tenth month last, before the Prince George County Agricultural Society, Md. We find the Address in the Marlborough Gazette.—Ed.

The most important improvements which have taken place in the practice of husbandry, within the last few centuries, may indeed be justly ascribed to the formation of Agricultural Societies. The progress of Christianity and the consequent advance of civilization may, it is true, be claimed as the prolific parents of every melioration which has taken place in the condition of the human race. Their prominent and controlling influences are no less seen in reforming the habits and softening the asperities of crude and unregenerate nature, than in the progress of science, and in the general diffusion and increase of knowledge among men. To these, as the remote causes of every blessing which has been vouchsafed to man, we yield our willing assent. But as the faithful chroniclers of truth we must remember, that Christianity and civilization flourished for more than twelve hundred years, before any visible improvement took place in the pursuit of agriculture. It had existed to be sure, from the earliest period of which we have any account, both with savage and civilized nations, as one of the most useful and important of human occupations, but its practice was unaccompanied by any other knowledge than that derived from mere experience, and was confined for the most part to the simple process of exhaustion, unaided by any acquaintance with those principles of re-invigoration, which later years have so successfully developed. The ancient Chaldeans and Egyptians were skilful in practical husbandry. The Egyptians ascribed the invention of the art to their god Osiris; and such was their veneration for it, that they actually worshipped animals that were employed in tilling the earth. The ancient Chinese were also well versed in the practice of it; and to them has been ascribed the invention of drill husbandry, which is now so successfully practiced both in England and in this country. Mago, the celebrated Carthagenian general, wrote no less than twenty-eight books upon the subject of agriculture, which, Columella informs us, were translated into Latin by an express decree of the Roman Senate. The ancient Romans thought it the most honourable employment of life, and that the highest civic honours belonged to him who cultivated well his own lot of ground. Cato the great, wrote a large treatise on agriculture, and was the first Latin author on the subject. He was followed by Varro and Virgil. Columella, who lived in the reign of the Emperor Claudius, wrote twelve books on the subject. But from his time to the reign of Constantine IV., agriculture seems to have declined, when it was again revived by that Emperor, who made a large collection of the most useful practices and precepts which he caused to be extracted from the best authors, under the name of Geoponics. From the time of Constantine IV., however, down to the sixteenth century, agriculture was much neglected and seems to have sunk into great disrepute. It was not until about the sixteenth century, when agricultural associations began to be established, that the pursuit of agriculture assumed a more elevated rank in England. At this period, men of genius and of science devoted their attention to the subject, and in a short time it received an impulse from their philosophical researches, which soon placed it among the most desirable and interesting pursuits of life.

Among the first in England, who invested the subject of agriculture with a charm, wholly unknown to it before, was Sir Anthony Fitzherbert, an eminent Judge of the Court of Common Pleas. His writings on the subject not only stimulated men in the highest walks of life to the pursuit of it, but they unfolded a fund of knowledge concerning the growth of plants, the nature and properties of soils, and the various kinds of aliment required for the different vegetable productions of the earth, which gave to the pursuit of agriculture, all the elements of a refined taste, and of strict philosophical research. These, together with the writings of Sir Hugh Platt, and of Gabriel Pluttes, at a somewhat later period, the two latter of whom treated more particularly on the subjects of manuring and of draining, worked an entire revolution in the whole system of husbandry, which before that time had been practiced in England. What had once been considered a low and menial pursuit, became now, one of the most prevailing among men of rank and of education; and Peers of the realm, as well as country gentlemen, whose fortunes had been impaired by the political violence of the times, found it necessary to seek refuge from distress, by engaging in agricultural employments. These results necessarily lead to more extended inquiry after that sort of information which could only be derived from the experience of practical men, as well as to more thorough examinations into the nature and properties of the various kinds of stimulating substances, which might be supposed to possess the qualities of fertilization. What could not be

done by individual exertion, was accomplished by associated enterprise. Agricultural societies were soon established, composed of men of eminent learning and of practical experience in the art of husbandry, and by means of the information which they collected and diffused, the spirit of emulation they promoted, and the inducements they held out to discoveries of new and useful improvements in the management and cultivation of the soil, agriculture in a short time advanced from a comparatively low and degraded condition, to one of exalted honour and excellence.

We are indebted to Samuel Hartlib, the friend of Milton and of Cromwell, a distinguished English agriculturist of the sixteenth century, for the establishment of agricultural societies. In a work called the Legacy, which he published about the middle of that century, he strongly recommended the foundation of a National Institution, for the encouragement of husbandry; and also the formation of individual associations for the promotion of agricultural knowledge. It does not appear that the Government followed his recommendation, by establishing at that early period any public institution of the kind, but in accordance with his suggestions, individual associations were formed in several parts of the kingdom; and in a short time their beneficial effects were manifested by the renewed assiduity with which agriculture was pursued, as well by the nobility as by the gentry. From this time down to the year 1660, when the rebellion and civil wars which had for so many years convulsed the nation, terminated; and from that time, to the year 1793, a period of more than a century, the subject of agriculture attracted more attention in England, than it had done in any former years. The writings of Kaimes, of Sinclair and Hunter, of Evelyn and Ray, of Duckett, Dugdale and Young, of Anderson, and many other eminent men during this period, together with the establishment of agricultural societies and other literary institutions, having for their objects the promotion of the useful arts: such as the Royal Society, the Society of Arts, and others of a like nature, had so elevated the art of husbandry, and so thoroughly imbued the great mass of the people with a love of its pursuit, and awakened them to a sense of its usefulness and importance, that the Government, in the year 1793, established for the first time, a Board of Agriculture, similar in many respects to that which Hartlib had recommended more than a hundred years before. To the exertions of this institution, in obtaining and disseminating information on the objects of its formation, by its offer of rewards for important discoveries, its premiums for articles of excellence in all the departments of agricultural industry, and to its efforts generally in promoting and advancing the agricultural interest of the nation, may be ascribed that spirit of enterprise and eminent success, which have since marked the prosecution of agricultural pursuits in England; and which, within the last fifty years, have placed the art of husbandry in the advance of all other human occupations.

The same successful results seem to have followed the establishment of agricultural societies in France, in Germany, and other European States. No less than fifteen societies were formed in one year in France, with the sanction of the Government, for the express purpose of encouraging the pursuit of agriculture; and premiums were offered for the best essays on the subject of practical husbandry, as well as for every variety of useful improvements in the manufacture of labour saving machinery. The Royal family used to attend these societies in person, and at Lyons, Bordeaux, and Amiens, were periodically assembled the most influential and scientific men of France, lending their zealous co-operation in advancing the interest, and promoting the happiness of the cultivators of the soil. Throughout Germany, particularly in the province of Bavaria, at Berne in Switzerland, and at Stockholm in Sweden, similar institutions were established. To the spirit of emulation and general fondness for agricultural pursuits, created by the formation of these societies in Sweden, may be ascribed the botanical and other writing of the great Swedish philosopher Linnæus, to whose indefatigable exertions and philosophical researches we are indebted for the best exposition of the nature and properties of plants, and for the most perfect analysis of the laws of the vegetable kingdom, which has ever been presented to the world.

At no period, however, and in no part of the world have agricultural societies exerted so happy an influence on the agricultural industry of a nation, as they have done, within the last quarter of a century, in the United States. Notwithstanding the high degree of excellence which the practice of husbandry had attained in the old countries of Europe, it seems to have made but little progress among the early settlers on this continent. In old and thickly populated countries, where prerogative privileges are the fruits of hereditary right, and where, from the nature of their political institutions, the masses of the people are excluded from general participation in what are usually termed the professional pursuits, agriculture is more

likely to become the prevailing occupation of life; and as population becomes more dense, the necessity of subdividing lands, to supply the increasing demands of agricultural labour, becomes more and more urgent. Hence, in those countries where the farmer is compelled by the force of circumstances to restrict his operations to the same piece of land, he looks beyond the primary process of production, and seeks out new sources of renovation, which the exhaustion of repeated culture has rendered indispensably necessary. Under such circumstances the practice of husbandry is more apt to flourish; and great and varied improvements are almost sure to take place, as necessity may require their successive development. But in a new and uncultivated country, where population is scarce and land abundant, like that which our Anglo Saxon ancestors found on this continent, where nature had so lavishly bestowed her choicest gifts, abounding in rich and fertile lands, covered with timber of every variety; and requiring only the axe of the husbandman to be brought under successful tillage, the principles of scientific and experimental agriculture, it might be supposed would be not only but seldom resorted to in practice, but might even be considered as utterly valueless. It is not at all surprising then, that our ancestors on this continent should have neglected the study of scientific husbandry. The earth, when cleared, yielded almost spontaneously to their wants; and when exhausted nature became weary of productiveness, new and maiden soils, teeming with vegetable life, were ready to send up their bounteous offerings. This practice of relying on newly cleared lands, to supply the place of those which had been worn out by cultivation, seems to have been the settled course of husbandry in this country, even down to a period long since the revolution. It exists, at the present day, as the established course of culture in many of the western and southern States of the Union. There are many persons, and perhaps some now present, who can recollect when it prevailed almost exclusively in our own State; and indeed, we are not without examples in this and the adjoining counties, of persons within late years, leaving their homesteads and the places of their nativity, simply because they had no more lands to clear; and seeking new homes in the woods and forests of the west, where alone they supposed could be found the true elements of agricultural prosperity. But I am happy in being able to say, this practice no longer prevails. The pursuit of agriculture has attained in this country as elevated a character as it ever enjoyed in any other. The formation of agricultural societies and the establishment of agricultural journals have produced the same results with us that have followed their progress in other parts of the world. The American farmer is not a whit behind the English farmer in the knowledge of those great properties of matter which science has developed, and the hand of industry applied to the cultivation of the soil. If the Englishman can look down upon the "golden valley of Herefordshire," and exclaim in a spirit of patriotic pride, here are the fruits of our industry and here the evidences of our skill in the art of husbandry; so too can we, with the same exultation and delight, point to the rich and renovated fields of New England, for similar evidences of agricultural improvement. Skill has taken the place of ignorance; and by its union with industry, brings forth its increase no longer in dwarfish and starvling proportions, but in all the fulness of gigantic exuberance. Scenes of desolation, and prospects of dire and barren waste have been changed, as if by magic, and in their places are now seen rich fields of abundant verdure, presenting in landscape to the eye, every thing that is beauteous to behold, and to the appetite, every thing that is wanting for the sustenance of life. The hand of science has lifted up the veil which hitherto obscured our knowledge of the laws of vegetation; and unfolded to our view those concrete principles of production and re-production, of which the earth was made capable, when it came from the hands of its Beneficent Creator. Unlike our unenlightened ancestors, we are no longer obliged to roam from field to field, and from woods to woods, in search of new and unexhausted soils, but cleaving to our own beloved homes, and to our own native spots, with all that tenacity which nature has instinctively planted in the human breast, and which it delights to gratify—no matter how worn out by culture, or exhausted of their energies, we can make them to bloom again with all their original fragrance, and to become redolent with more than their original fertility. Such has been the progress of improvement in the art of husbandry, and such the beneficial results of agricultural societies, and of agricultural journals.

With reference to the consumption of breadstuffs in our own country, I believe it to be much greater than is generally thought to be. Take, for example, the article of Indian corn, which is certainly more extensively grown, as well as more extensively consumed, than any other article; and by reference to the returns of the census of 1840, we may approximate to something

like a fair estimate of its probable domestic consumption. The growing crop of Indian corn for that year was estimated at 377,531,873 bushels, or 75,506,375 barrels. We will assume this to be the crop of the last year: although the crop of the last year is not believed to have been so large as those of preceding years. The population of the United States at present is supposed to be, in round numbers, 20,000,000. Of these, 3,000,000 are under the age of ten years: leaving 17,000,000 above that age, who may be put down as consumers of Indian corn to a greater or less extent. In 1840, there were in the United States 26,301,293 of hogs—19,311,374 of sheep—14,971,586 of neat cattle—4,335,669 of horses and mules—$9,344,410 in value of poultry; and estimating these at an average value of thirty cents each, there was in number, 30,000,000 of poultry in the country. There were also, 41,402,627 gallons of spirituous liquor distilled, of which, one-half, say 20,701,313 gallons were made of Indian corn, which required 6,900,437 bushels, or 1,380,089 barrels. Now, this crop of 75,506,375 barrels, only gives to each hog one barrel and a half of corn—to each sheep two gallons—to each of the neat cattle one-half barrel—to each horse one barrel and a half—to each of the poultry two gallons—and to each human being, over ten years old, one barrel; after deducting the number of barrels distilled into spirituous liquor. Besides these, it is believed there are 1,000,000 of dogs of all descriptions, in the United States; and lest I may be considered as having given out too large an allowance to the above named description of consumers, I think, with the aid of a "Philadelphia Lawyer" to assist me in counting the millions of rats, and squirrels, and raccoons, and bears, and goats, and deer, and crows, and blackbirds, and other graniverous and bread eating animals, not enumerated in the census, all of which will get their share in spite of you—together with the consumption, by means of wastage, losses by transportation, and other "accidents by flood and field," we may together, make out consumers enough, likely to take whatever surplus may be left. And yet, notwistanding the claims of these various consumers, which show, at least, the extent to which the domestic consumption of Indian corn might be pushed, we actually exported to Great Britain and Ireland during the year ending the 1st of September, 1847, the amount of 17,298,744 bushels of Indian corn, and 847,280 barrels of corn meal, making together 4,307,628 barrels of Indian corn: besides nearly 20,000,000 bushels of wheat, —including wheat and wheat flour—which latter amount is nearly one-fourth of the entire estimated crop of wheat of the year 1846. Now all these things go to show, not only the vast extent of the domestic consumption of the country, and the point to which it might be made to reach, but at the same time, they furnish ground for serious reflections, whether the exportation of breadstuffs from the country may not be carried to an extent which might produce a scarcity at home—such in fact now seems to be the case in parts of Pennsylvania, and in regard to the article of wheat, there are reasons for believing that the crop will be deficient throughout the country.

Chess.

Bromus Secalinus.

Few subjects of practical agriculture have a greater interest than this. Substituted for wheat, not a more miserable crop exists. Its appearance in a field of wheat is like the *plague spot* on the human frame. To avoid it the farmer is obliged to see that his seed wheat is pure, and utterly destitute of that seed. It is the remark of many thorough farmers, that they never raise *chess*. This would be adequate proof in any other case of the origin of the plant.

But the remark is often made that the fields in which the wheat is *winter-killed*, abound in chess. The proof is palpable. Numerous such fields have been seen this year. Is this adequate reason for the opinion that *wheat is converted into chess* by the frosts of winter? I think not, for the following reasons.

1. All the wheat fields in which the wheat has been killed by the winter, do not abound in it, and some of them are free from it. It is curious that the chess is not the uniform result of the killing of wheat, if the supposed change is effected by the operation of winter.

2. Wheat and chess are not found growing on the same root. The contrary has been alleged, but an examination of the cases has ever proved that this is not the fact. If wheat is converted into chess, all the plants on the same root are the subjects of the transformation.

3. The distinctness and difference of the two. Wheat has a long head, or *spike*, of sessile flowers, and does not send out branches; chess has a diffusely divided stem or *panicle*, in several places towards the summit, in form like oats, and bearing short, and rather close, short *spikes*, or collections of flowers. The supposed change, therefore, affects the whole form and appearance of the plant. The embryo plant is formed in the seed of wheat, and the change must affect the very form of the embryo, and cause a

great modification of the whole plant. The fruit or seed, too, is changed in its form, manner of growth, and character of the matter which it contains. No similar change occurs in other plants, and there is no proof of the said change in this. In all their characters, wheat and chess are more diverse than rye and wheat, barley and wheat, oats and rye, barley and rye, apple and pear, cherry and plum, and the like. Chess is not like a *hybrid* of other plants. It is not the *pollen* which effects the change in chess, but the form and peculiarities of chess exist before the flowering and the evolution of the pollen take place.

It has been said that *rye* has been changed into *oats*, but there is needed a satisfactory proof of the fact; as there is that the brain of man is at one time that of a fish; at another, of a crow; and at another, of an ape. Such peculiarities must have been maintained to ascertain how far credulity can extend, and how large a part of men can believe themselves to be *improved tadpoles*.

4. There are adequate sources of the seeds of chess. They may have been sowed with the wheat, and developed with greater fertility as the wheat was absent from the well cultivated earth. Such a fact is often noticed in the growth of other plants.

The seeds may have been already in the ground, and buried too deep for germination, till cultivation placed them in a situation to grow. This is a well-known fact in respect to a multitude of plants, whose seeds are long preserved in the ground, and germinate on the proper exposure.

The wheat of new lands, if the seed is usually pure, is remarkably free from chess. The seed is probably always carried with the wheat, and this begins the chess, which is afterwards developed in the circumstances favourable to its growth. One of these is the absence of wheat by being winter-killed. *Let it be shown* that the seed of chess is not in the ground, before the influence of winter is made the cause of its appearance.

5. Chess propagates itself by seeds like other grains. Thus it is like any other plant, as the "herb yielding seed after its kind, and the tree yielding fruit, whose seed is in itself after its kind," a principle fundamental in human belief. If cold and frost may change wheat to chess, why does not heat change chess to wheat? If the farmer intends his wheat shall be free from the seeds of useless, or injurious, or noxious plants, he must remove the seeds from his seed wheat, and weed out the plants from the growing grain.

It is of no avail to say, may not the transformation of wheat to chess take place? It is inconsistent with all the known laws of vegetation, and the violation of fixed laws, by natural causes, is impossibility. What miraculous power might effect is not to the purpose, when the laws of matter, organized or unorganized, are under consideration.

A writer has, indeed, called chess a hybrid; but of what is it a hybrid? Where are the two plants which are thus assimilated? A hybrid is formed by means of two closely related species, the pollen of one being transferred to the flower of the other. If the two plants are closely related, the modification can sometimes be effected. Its infrequency, when the number and proximity of plants* is considered, is proof enough of the difficulty. Besides, if it was an easy process, hybrids would be common over the fields. Wheat and rye are nearly related species; but they are grown together often by the farmer, and yet both preserved distinct—not a hybrid of them appears. But chess has generic characters, which separate it far from those of wheat. Wonderful, indeed, would be the modification of the one into the other. A hybrid of it must be, not chess, but some yet unknown vegetable.

Fields of wheat sometimes abound in *cockle*, Lychnis *githago*, whose seeds are so ruinous to good flour. Why has not this plant been considered some modified wheat? Because it is so different. What is the limit to differences, when wheat and chess may be said to have the same origin?

The correct knowledge of chess leads directly to safe agricultural practice. The remedy is as palpable as the difficulty. Let the soil be freed from the seeds of chess.—*American Journal of Agriculture and Science.*

Mode of Keeping Milk to prevent Souring.

In passing a store a short time since, in rather an obscure part of the city, and seeing a large number of milk cans standing about the premises, I walked in and learned the following particulars from a fine healthy woman, of middle age, who, with her daughter, a buxom girl of about sixteen, was standing behind the counter waiting upon customers. They sell the milk of three hundred cows, principally consigned to them from Orange county by different farmers, which brings three cents a quart at wholesale, and four cents retail. Each can is marked with

* A dozen or more plants of different kinds, and several of them in flower at the same time, may be found on a square foot of grass lands.

the initials of the farmer from whom the milk is received, in order to avoid confusion when they are exchanged for return.

In answer to some inquiries about sour milk, I was informed that there is a great difference in that brought by different individuals. Some of that which is brought the greatest distance keeps the longest; and in one instance they had never lost a single can. On asking the reason of this, I was told that the milkers must have filled the cans of cold milk with warm milk directly from the cows, which causes it to sour. "This," said the woman, "is always the effect of mixing the two." Another cause of souring, she said, "is in consequence of not immediately depriving the milk of its animal heat. Some farmers set the cans of milk in cold water, and there leave them. The water soon becomes warm, and is but little better than if they were not put in at all. Others draw off the water as soon as it becomes warm, and replace it with cold, until the milk is sufficiently cooled; while others place their cans in a cold spring or vat of running water, where it soon becomes perfectly cold. But the best way," said she, "for I was brought up on a dairy farm, is to put the milk in large pans placed in running water, which will cause it to cool immediately; and then pour it into the cans, leaving off the lids or covers for all the gases to escape, until they are ready to convey to market."

By this time the husband came in, and I turned my attention to him, as his wife and daughter were busily engaged in waiting upon their customers. On asking him whether some lots of milk from the same cows do not make more butter at one time than another, he replied that he had churned through the hot weather with his own hands; that he had measured the milk and weighed the butter produced from it; and that he had found it would require from eleven to twenty quarts of milk, brought from the same farm, to make a pound of butter, but could give no satisfactory reason why it was so.—*American Agriculturist.*

Hereditary Propensities in Dogs.—Roulin relates that the dogs employed for hunting deer in some parts of Mexico, seize the animal by the belly, and overturn it by a sudden effort, taking advantage of the moment when the body of the deer rests only upon the fore legs; the weight of the animal thus thrown over being often six times that of its antagonist. The dog of pure breed inherits this disposition, and never attacks the deer from before while running: even should the deer, not perceiving him, come directly upon him, the dogs slip aside and makes his assault on the flank; whereas other hunting dogs, though of superior strength and general sagacity, which are brought from Europe, are destitute of this instinct. A new instinct has also become hereditary in a mongrel race of dogs employed by the inhabitants of the banks of the Magdalena, in hunting the white lipped Pecari. The address of these dogs consists in restraining their ardor; attaching themselves to no animals in particular, but keeping the whole herd in check. Now, among those dogs, some are found, which, the very first time they are taken to the woods, are acquainted with this mode of attack; whereas a dog of another breed starts forward at once, is surrounded by the Pecari, and, whatever may be his strength, is destroyed in a moment.—*Millengen's Mind and Matter.*

For the Farmers' Cabinet.

Hymn for the Country.

Come to the fields,—our God is there;
Above, around, his glory view;
With bended knee and heart of prayer,
Mark yon waving green—sky of blue.

Come to the fields,—far up on high,
His throned magnificence see!
Those wondrous worlds, that ever fly,
And onward roll, in majesty.

Hark! to the hum of life, the chime
Of happiness, the busy glee,
The ceaseless beat, and pulse of time,
Throbbing thus tumultuously.

Come to the fields,—for ever there,
Is the Almighty's Holy Writ;
No dark, deep secrets, bring despair,
Our own hearts declare—disclose it.

All nature, its high truths reveals;
Its messenger—the lightning's flash,—
Th' elation the happy spirit feels;
Its eloquence the thunder's crash.

Th' ocean, th' air, its Prophet sages,
The harmony and voice of birds,
Nature's glories are its pages—
Its types, its letters, and its words.

Remember, man, of this thou art
The most wonderful—of the whole
The nobler and loftier part—
But thou, hast an immortal soul.

All perishes,—the vast, the grand;
Yon moving worlds, and all on high,
Struck and crushed by the Almighty's hand;
Save thou, immortal! all shall die.

A. L. E.

Philad'a, Dec. 1st, 1847.

For the Farmers' Cabinet.

Hints for Horticulturists and Lumbermen.

Mr. Editor,—I take the following extract from Dr. Liebig's great work on Agricultural Chemistry. It may be found in the chapter headed "The Art of Culture."

"A new and peculiar process of vegetation ensues in all perennial plants, such as shrubs, fruit and forest trees, after the complete maturity of their fruit. The stem of annual plants at this period of their growth becomes woody, and their leaves change in colour. The leaves of the trees and shrubs on the contrary, remain in activity until the commencement of the winter. The formation of the layers of wood progresses, the wood becomes harder and more solid; but after August the leaves form no more wood; all the carbonic acid which the plants now absorb is employed for the production of nutritive matter for the following year; instead of woody fibre, starch is formed, and is diffused through every part of the plant by the autumnal sap. According to the observations of M. Heyer, the starch thus deposited in the body of the tree, can be recognized in its known form by the aid of a good microscope. The barks of several aspen and pine trees* contain so much of this substance, that it can be extracted from them as from potatoes, by trituration with water. It exists also in the roots and other parts of perennial plants. A very early winter, or sudden change of temperature, prevents the formation of this provision for the following year; the wood, as in the case of the vine stock, does not ripen, and its growth is in the next year very limited. From the starch thus accumulated, sugar and gum are produced in the succeeding spring, while from the gum those constituents of the leaves and young sprouts which contain no nitrogen, are in their turn formed. After potatoes have germinated, the quantity of starch in them is found diminished. The juice of the maple tree ceases to be sweet from the loss of its sugar, when its buds, blossoms and leaves attain their maturity. The branch of a willow which contains a large quantity of granules of starch in every part of its woody substance, puts forth both roots and leaves in pure distilled rain water, but in proportion as it grows, the starch disappears; it being evidently exhausted for the formation of the roots and leaves."

Here we have some very useful facts; indeed, the full extent of their usefulness hardly appears at first sight—it requires reflection in order to get acquainted with it. I shall treat upon it in connection with a variety of operations, each of which is highly important.

First, in connection with transplanting trees and shrubs. When these are transplanted, many of the roots are absent, and the plant deprived to the same extent of the means of external support. If this be done in the summer, when the plant has but little or no starch, and therefore no internal means of support, the plant suffers by the operation, and without great care seldom survives. But if the transplanting takes place in the winter, or at any time after the starch is deposited in its cells, and before the tree or shrub blooms in the spring, the plant does not so much suffer by the operation. It has within itself, by the aid of its starch, the means of subsistence and the first stages of growth, and therefore the roots may more readily be dispensed with. By the aid of its starch it puts out roots and leaves, and by the time the starch is all gone, it may depend upon those roots and leaves for its future subsistence. This is the reason why nurserymen advise the transplanting of trees and shrubs in the fall, winter and spring,—after August, and before the plants bud in the spring.

Owing to the carelessness often displayed in transplanting, the earth is not placed close to, or in contact with the roots of the plant, and the consequence sometimes is, that when the plant puts forth its small roots, they do not meet with the earth that should surround them, and therefore wither and die. This is one reason why it is better to transplant trees and shrubs in the fall instead of the spring, because during the winter and before the time of budding in the spring, the rains may settle the earth around the roots well, and the efforts of the plant when it puts forth its tender roots, are availing; and if all the other circumstances are equal, the chances for a successful operation of transplanting are good.

We come next to consider our text in connection with grafting. When a graft is well supplied with starch, as it is in a healthy tree, after, say November, and before April, it has the means within itself of growth, provided it has moisture. The graft should be so placed in the stock as to secure this end, if almost absolute certainty is aimed at. Remember the proper time to take grafts from the parent stock is after November and before April, for reasons stated above.

The same remarks with little variation, may apply to slips, cuttings, &c.

So much for the Horticulturist merely,—

* It is well known that bread is made from the bark of pines in Sweden during famines.

but we now come to show how important our text is to all who use wood—and who does not? It will readily occur to the minds of students, that when wood is filled with this starch, that it offers strong temptations to hungry insects, who are in search of food. They readily bore into it, eating the starch but unfortunately damaging the wood. This temptation is particularly great, when the starch by the addition of moisture and warmth, assumes the form and sweetness of sugar. It is then extremely liable to be attacked by insects, and if we would avoid them, we must cut such wood as we would use for mechanical purposes, in the summer, after the tree is in full leaf, and before August. This is highly essential; the tree has then but little or no starch in its cells, and when the wood becomes dry, it becomes very hard, and there being no temptation for the insect it does not attack it, and thus a great and often vexatious difficulty is avoided. Wood intended to burn, would be better cut in the winter, for then the starch as well as the wood, may be burned, and wood is easier cut when dry, when it is filled with starch, than when not, for in the latter case it is nearly as hard as iron.

Starch decays more rapidly than woody fibre, as it is more liable to chemical change. Lumber, therefore, that is filled with starch, or that has been cut during the winter, rots much more readily than that cut during the summer.

When clearing land it is desirable that stumps should not throw up shoots. This they are very liable to do when the tree has been cut during the winter, as the stump and roots have been well supplied with starch, and this starch enables the stump to throw up the shoots. If we would get rid of this difficulty, therefore, we will clear our land in the summer.

There is but one other view that may be taken of our text, that presents itself to my view at present, although there may be others that my attention may not now be directed to. That view is this—when fruit trees bear a very heavy crop late in the fall, they are apt to exhaust their supply of carbonic acid in the formation of fruit, and leave none for the formation of starch, for the use of the leaves and roots of the following year. Hence during the year after such late and heavy bearing, they appear sickly and weak, and although they often blossom finely, they bear little or no fruit. But during the fall of the non-bearing season, they again acquire their supply of starch and gum, and the next year, if other circumstances are equal, they bear their usual fine crop. On this account they are said to bear fruit *naturally* every other year, when if the cause was understood and the tree supplied well with lime, ashes, and ground charcoal, so that it might absorb and assimilate sufficient carbonic acid for its fruit and the formation of its starch—the tree might be made to bear every year—*naturally*.

I have necessarily been brief in all these points, Mr. Editor, but an intelligent mind and good judgment cannot fail, when opportunity offers, to make a good use of these hints,—and knowing you have many such minds among your readers, I submit them to you for publication. CHEMICO.

Chester County Farms.

IT is one of the modes of ascertaining the state of cultivation and mode of farming in a particular district, to ascertain the price at which farms sell. The following list is taken from a late number of the Village Record, published at West Chester, in this State, and will enable one to form—even without knowing the precise farms—a tolerably fair estimate of farm land in the vicinity.—ED.

THE farm of Levi A. Gheen, in West Whiteland, near the Indian King, has been sold for $59 per acre. It was bought by Richard White.

The farm of Mahlon Phillips, deceased, was put up and bid to $87 per acre, on the 3rd inst. It is located in Kennet township, and contains 101 acres.

The farm of Dr. Weeks, in the same section of the county, was bid in at $75 per acre—117 acres.

The farm of Mr. John Climenson, Uwchland, was sold on the 20th inst. for $76 per acre—100 acres, $7,600—to Mr. George Pennypacker.

The farm of John C. Dorat, in Londongrove township, containing 87 acres, was sold last Tuesday, to Job H. Jackson, for $6,500.

The farm of Thomas Shortledge, sold by assignee, in London Britain township, was sold on the 18th ult., 68½ acres, to Thomas Phelps, at $64 68¾.

The farm of Wm. Crooks, 126 acres, in Penn township, was bid to $33 12½ on the 20th inst.

The farm of Thomas Speakman, in Londongrove township, 136 acres, was sold a few days since to Mr. Cox, of Willistown, at $44.

The farm of Lewis Ferron, deceased, in Londonderry, 52 acres, was sold about the beginning of the present month, at $50 25 per acre, to Thomas Farra.

The farm of Conrad Keeley, deceased, in Uwchland, was sold by the executors, at $46,00, 125 acres, bought by Jacob Keeley.

The farm of George Fetters, deceased, in W. Pikeland, 68 acres, was sold on the 9th, at $45,91, Eli Pennypacker, purchaser.

The farm of James Pennypacker, deceased, West Pikeland, 147 acres, was sold on the 4th inst., at $61 12½, to Harman Pennypacker and others.

The farm of Benjamin Harley, Uwchland, on the 21st inst., was bid to $64, about 100 acres, but not sold.

The farm of David Hunter, deceased, West Nantmeal, 204 acres, was sold on the 24th inst. at $42 per acre.

The Use of Acorns.—Farmers in various parts of Germany, particularly in some districts of Saxony, successfully employ acorns for the winter fattening of sheep. English farmers, however, either totally neglect them, or use them almost solely for the feeding and fattening of hogs. In Hertfordshire and in the new Forest district of Hampshire, hogs, in many instances, receive very little other food than acorns, and commonly attain great firmness and weight, and yield a decidedly good and well-flavoured pork. Yet such as are, for a short time withdrawn from the acorn diet, and have their fattening completed by four or five bushels of barley flour or peas meal to each, are judged by some persons to yield pork of still better substance and superior flavor. The farmers of Gloucestershire bestow nearly as much care on the fruit of their oak trees as upon the produce of their orchards. They seldom sell their acorns, or can find any in the market, yet usually estimate their value from 1s. 6d. to 2s. per bushel, according to the price of beans; and they regard them as decidedly superior to beans at once for fattening hogs, for increasing their weight, and rendering their bacon firm.—*The Rural Cyclopedia.*

A Portrait of an Anti-Book Farmer.

He ploughs three inches deep, lest he should turn up the poison that, in his estimation, lies below; his wheat land is ploughed so as to keep as much water on it as possible; he sows two bushels to the acre and reaps ten, so that it takes a fifth of his crop to seed his ground; his corn land had never any help from him, but bears just what it pleases, which is from thirty to thirty-five bushels, by measurement; though he brags that it is fifty or sixty. His hogs, if not remarkable for fattening qualities, would beat old Eclipse at a quarter race; and were the man not prejudiced against deep ploughing, his hogs would work his ground better with their prodigious snouts, than he does with his jack-knife plough. His meadow lands yield three-quarters of a ton to a whole ton of hay; which is regularly spoiled in curing; regularly left out for a month, very irregularly stacked up and left for the cattle to pull out at their pleasure and half eat and half trample under foot. His horses would excite the avarice of an anatomist in search of osteological specimens; and returning from their range of pasture they are walking herbariums, bearing specimens in their mane and tail of every weed that bears a burr or cockle. But oh, the cows! If held up in a bright day to the sun, don't you think they would be semi-transparent? But he tells us good milkers are always poor! His cows get what Providence sends them, and very little besides, except in winter, then they have a half peck of corn, the ears a foot long thrown to them, and they afford lively spectacles of animated corn and cob crushers; never mind, they yield, on an average, three quarts of milk per day! and that milk yields varieties of butter quite astonishing.—*Western Farmer and Gardner.*

Treatment of a Contrary Horse.

When a horse gets in the way of being contrary and will not go forward at all, it is common to apply the whip freely. Solomon says "a whip for the horse," but he may not refer to cases of this kind. At any rate, it is often where thus used of no benefit, only the gratification of the enraged driver. A method which we have known more successful is to treat the animal very kindly. His contrary disposition is usually the result of having been fretted in some way, and kindness may overcome it. Make much of him at all times. Speak gently to him and so often that he will become accustomed to your voice. When he stops when attached to the carriage or a load and will not move, approach him in the same gentle manner. Stroke the mane and pat the hand frequently on his head. Means of this kind will have a powerful tendency to overcome his stubbornness, as brutes feel the power of kindness. We believe from what we have seen that young horses, especially in nine cases out of ten, may be successfully cured of contrary habits in this way, while the application of the whip would only increase the difficulty..—*Exeter News Letter.*

The autumn has been favourable for the ripening of the corn crop.

Cisterns for Farm Buildings.

Pure, wholesome water, as a constant beverage for man or animals, is essential to sound health. Its relative salubrity depends on the various animal, vegetable, or mineral particles, with which it may be impregnated, and the places whence it is procured. The transparency or purity of that obtained from wells or springs, varies according to the strata of earth through which it percolates. The most wholesome fluid is derived from springs issuing from pure sand-stone or primitive rocks, or from sandy soils, principally composed of granite or quartz, where it has undergone a perfect filtration. The water of lakes and ponds has similar properties in general, as that of rivers or brooks, but being less agitated, and containing more organic matter in a state of decomposition, it acquires a greater degree of impurity, and consequently is less fit for culinary use; though, on account of its softness, it may be employed with advantage for washing clothes.

Rain water collected in the vicinity of cities or populous towns, as well as in the neighborhood of marshes or mines, especially during summer, is always more or less impure. Therefore it should not be used, if it can be avoided, except for washing linen, &c., or watering plants, unless it be purified by filtration or other means. The fluid obtained by dissolving snow is somewhat purer; but of all natural waters, that obtained by melting hail is the most pure, as it contains fewer extraneous particles, in consequence of its congealing high in the air; so that it cannot combine with noxious ingredients during its descent. Like all water, however, which falls from the clouds, it contains minute quantities of air, carbonic and nitric acids, carbonate of ammonia, and other salts.

Well, or pump water, is generally less pure than any of the preceding, as it frequently contains large quantities of carbonate or sulphate of lime, which are the cause of its "hardness," and the property of curdling soap. In all large towns, that have long been inhabited, the wells are generally rendered unfit for use, in consequence of the ground having been tainted by church-yards, vaults, and other nuisances, which, doubtless, is the cause of much suffering, and even of the shortening of life itself. Therefore, in all regions where lime-stone or other impurities in the soil abound, or where the farmers unavoidably have to sink their wells to a great depth, we would recommend the construction of cisterns near all of the principal farm buildings for retaining the water which may fall from their roofs. By this means a large supply of wholesome water may be had all the year round, at a comparatively small cost, which will not only be essential in all purposes about the house, but will be found useful in irrigating the garden, as well as for the watering of stock.

The most convenient and durable mode of constructing a cistern, is, to make it of a circular form, under ground, with the bottom and sides lined with stone or bricks laid in hydraulic cement; and in many cases mortar may be plastered directly on the sides of the pit without the aid of bricks or stone. A cistern, eight feet in diameter and nine feet deep, will hold about one hundred barrels, and will require three thousand four hundred bricks to face its sides. The cement to be employed should be of first-rate quality, such as that used in the construction of the Croton acqueduct, or the Erie canal. If this cannot conveniently be obtained, a very good article may be made of four parts brick dust, finely screened; eight parts fine, sharp, fresh water sand; twelve parts lime completely slacked by burying in the ground, so as to exclude the air during the process of slacking; three parts powdered quick-lime, newly burnt; and three parts powdered charcoal. First, mix the slacked lime, brick-dust, charcoal, and sand with water sufficient to make a mortar thinner than usual, then sprinkle in the quick-lime. Mix well with a trowel, and use immediately, as it will soon grow stiff and hard.

Cisterns should be completely covered with planks or stone, so as to exclude all insects, leaves, and dust. If the buildings be situated on a hillside, it would be preferable to conduct the water to the place where wanted for use by means of a pipe, without the labor of pumping, or lifting it out by hand.—*American Agriculturist.*

The preceding remarks may be profited by in many places—but in many others where a stream of water and a fall of a few feet are at command, one of Birkenbine's Hydraulic Rams is far preferable to a cistern on various accounts.—Ed.

Cranberries.

The cultivation of this pleasant sub-acid fruit is now, we perceive, becoming quite common. In their management various methods are adopted—some planting them in bogs and swales, and others, with equal success, cultivating them on sandy soils, and indeed in almost every variety of situations which can be conceived, or in which the plants can be induced to take root. It is stated in one of our agricultural exchanges, that a Mr. S. Baies, of Billingham, Norfolk Co., Mass., cultivates this crop with surprising success. Mr. B. says that "low meadow land is the best for them, prepared in the first

instance in the same manner as for grain. The wild cranberry is then transplanted into this, in rows twenty inches apart. At first they require a slight hoeing; afterwards they spread and cover the field, producing crops annually thereafter without further culture. In this condition they produce much larger and finer fruit than in their wild state—the yield being from two to three hundred bushels per acre, worth, on an average in the Boston market, at least one dollar per bushel." Mr. B. furthermore states, that "a damp or wet soil has generally been considered necessary to their successful cultivation," but thinks this not essential, as any soil not inclined to *bake*, will answer. He recommends the early spring as the most proper time for transplanting. In several experiments that have been made, the cranberry has flourished and fruited well when planted on soils of a light character, and we can see no good reason why it should not succeed under such management, as well as other low ground productions. The elm, so common in our ornamental enclosures, is never found growing naturally on our hills or plains, yet it appears to be benefitted rather than injured by removal to them, and the same is the case with several other trees and shrubs.—*Maine Farmer.*

Cattle for Fattening and for the Dairy.

The following table exhibits the distinguishing characters of animals possessing the properties of fattening or grazing, as compared with those which indicate the faculty of yielding milk, viz:

FOR GRAZING.

Head—small; muzzle fine; ears large, a little erect, and transparent.

Neck—short, light, and nearly straight; small from the back of the head to the middle; dewlap large and loose.

Chest—wide and round; ribs deep and barrel-shaped; great depth behind the elbow.

Back—straight from the shoulder to the tail, and well filled up with muscle; hips wide.

Belly—nearly straight.

Quarters—full, long, and large; the muscles reaching close down to the joints; legs short; bones small and flat.

Tail—falls perpendicular from the line of the back.

Udder—firm and fleshy, and the milk vein small.

FOR THE DAIRY.

Head—large; muzzle coarse; ears rather pendent, and tinged yellow inside.

Neck—long, slender, and tapering towards the head; with but little loose skin below.

Chest—deep, but narrow, and strikingly deficient in the substance of girth; ribs flat and wide apart.

Back—narrow; joints wide and loose; bones prominent; hips narrow.

Belly—large and drooping.

Quarters—muscles thin, but very firm.

Legs—long, coarse, and inclined to be sickle-hammed.

Tail—set on low; haunch drooping to the rump.

Udder—large, thin, and loose, and the milk vein very prominent.—*Farmer's Magazine.*

Interesting Agricultural Experiment.

On the 12th of September, we stated that an experiment had been made upon a farm in South Lancashire, in the growing of roots, that might, if successful, serve to counteract the injurious effects of the failure of the potatoe crop, both as regards the farmers and the public. We have now the pleasure to state the result of this experiment, which has answered, and even exceeded, the expectation we then formed of its success.

The land occupied by this experiment, we found, on correct measurement, to have been three acres, one rood and eighty-three yards. The land was sown in alternate drills at a distance of thirty inches between each, first a drill of potatoes (cups, as they are called,) and then a drill of Swedish turnips: so that the potatoe tops in one drill did not come in contact with those of the next drill of the same root. The potatoes and the turnips thus grew together till about the middle of last month (October,) when the potatoes, which had been partially attacked by the prevailing disease, were dug up and sent to the Manchester market, where they were sold at 12s. per load of three bushels; but the turnips remain in the ground, and are growing vigorously, each drill having now twice the accustomed room for nourishment and growth.

The quantity of potatoes produced proved to be 68½ loads of large, 10 loads of small, and 5 loads of decayed potatoes, which sold as follows:—

68½ loads at 12s.	£41	2	0
10 loads of small at 6s. . . .	3	2	0
5 loads bad, unproductive.			
	£44	4	0
The turnips, as we have stated, are still in the ground, but from their appearance the crop may be safely estimated at 20 tons—value, 27s. pr. ton	27	0	0
	£71	4	0

The yield of cup potatoes, on an average of years, is 60 loads per acre, and the average price in the Manchester market, 5s. per load; so that if the whole field had been set with potatoes before, the quantity produced would have been 200 loads, at 5s.	50	0	0
Excess of produce in money this year over an average of years	£21	4	0

Independent of this gain in money, we have here a practical security against the future failure of the potatoe crop, or of having that failure made up by the two crops united. It may be proper to add that the manure used in the cultivation of this field was six cwt. of guano per acre, sown in drill, of the value of 6s. per cwt., and that the soil is reclaimed peat earth, which abounds to so great an extent in Lancashire and in most of the Irish provinces. As this favorable result is, we believe, principally attributable to the separation of the potatoe drills from each other, we see no reason to doubt but that under this system of husbandry the results would be equally favorable on any land suitable for the growth of these valuable roots. The risk of an experiment is very inconsiderable; and we recommend its adoption, to a certain extent at least, so long as the country shall suffer under the visitation of the loss of one of the most important articles of food for the people.—*Leeds Mercury.*

Royal Agricultural Society of England.

To show a little the extent of the operations of this noble Society, we take from the minutes of the last Annual General Meeting held on the 12th of Twelfth month last, at the Society's house, Hanover Square, London, the Earl of Egmont in the chair, the following statement of its accounts. It is not necessary to say to the readers of the Cabinet, that if we multiply the number of pounds sterling by five, we shall about have the amount in dollars.

The finance committee reported, that during the past half year 302 new members had been elected—56 had died, and 789 had been struck off the list, on account of arrearages of subscription not being paid up so far back as 1841 and 1842. There are still arrears of subscription due for 1843 to 1846 inclusive, £5,375! The capital of the Society invested in the public funds, amounts to £7000, or about $35,000.

Col. Austin stated that he would read the balance sheet of the Finance Committee, "but I wish," said he, "to premise that it must be borne in mind that the accounts are made out for the half year only; that is the half year ending on the 30th of June, and that this is the reason why sums since received on account of arrears are not credited. The letters which have this year been addressed to the members in arrear, calling for payment of their subscriptions, have been answered in an unusually quick and rapid manner; a fact which must be gratifying to the meeting." Col. Austen then read the balance-sheet, from which it appeared that—

Half-yearly account, ending June 30th, 1846.

Receipts.

	£	s.	d.
Balance in the hands of the bankers, 1st of January, 1846,	760	2	5
Balance in the hands of the secretary, 1st January, 1846	14	12	9
Dividends on stock	110	8	8
Sale of stock	1174	10	0
Life-compositions of members	372	0	0
Annual subscriptions of governors	747	10	0
Annual subscriptions of members	2666	12	10
Sale of Journal	139	10	2
Sale of Cottage Tracts	3	3	1
Receipts during the half-year, on account of the Country Meetings	4	5	9
Payment made in error by Messrs. Child and Co. to Messrs. Drummond	45	0	0
	£6046	15	8

Payments.

	£	s.	d.
Permanent charges	270	12	6
Taxes and rates	21	8	2
Establishment charges	935	12	10
Postage and carriage	27	5	6
Advertisements	13	5	0
Expenses of Journal	1568	7	10
Prizes	200	0	0
Payments during the half-year, on account of the Country Meetings	296	1	7
Subscriptions repaid	11	6	0
Miscellaneous payments	6	19	3
Repayment to Messrs. Child of sum paid in error	45	0	0
Balance in the hands of the bankers 30th June, 1846	2564	17	10
Balance in the hands of the secretary 30th June, 1846	25	19	2
	£6046	15	8

Steam Plough.—A French paper, *La Semaine*, announces the invention of a steam plough, or rather the mode of digging by means of steam, from which the most wonderful results are anticipated. The inventor is a young medical man, named Barat. The Journal states that one of the two-horse power was in operation at the residence of the maker, who was constructing another of double the power. The machine proceeds along the field, and digs the ground with the greatest precision. Two beams furnished with five mattocks each, act successively upon the soil, loosening it to the depth of 12 or 15 inches, and pounding it as small as compost. By using only one of the beams, a tillage of the usual depth can be effected.—*Farmer and Mechanic.*

Philosophy for Farmers.

The relaxation of commercial restrictions has had, among other effects, that of giving an impulse to agricultural industry, which has long borne the reproach of being behind the age. According to some authorities, agriculturists generally have proved themselves the most unteachable of mortals, willing rather to obey a mechanical routine, than to be guided by true principles. Whether such be the case or not, the ceaseless labours of the press are doing much to remove ignorance in every quarter; and science, which gradually insinuates itself into all human operations, is doing for agriculture what it has done for manufactures—taking it out of the domain of uncertainty, and showing it to be equally dependent on natural and philosophical principles. With these aids, and a more active competition, there can be little doubt that agricultural pursuits will soon become characterised by a high degree of commercial activity.

It frequently happens that valuable scientific treatises are published, which remain totally unknown to the general reader, and thus become lost for purposes of practical utility. A paper of this character, on "The Philosophy of Farming," which appears to us to be deserving of wider circulation, has just made its appearance in the last volume of the "Manchester Philosophical Society's Memoirs." According to the author, Mr. Just, "all cultivation consists in bringing to the plant, or placing within its range of action, such a supply of material as natural means cannot furnish it with in the situation where it grows. In order to cultivate well, it is therefore as necessary to know what plants want, as for the builder and contractor of material to know what is required for building." It is now pretty well understood that the growth of plants depends less on solid nourishment, than on fluid and atmospheric agents, of which the chief are carbonic acid gas, azote and water. In chemical language, these comprise four atomic elements; and according to their presence in the soil, is the abundance and deficiency of the crop. On the continent, the investigations of Liebig and Dumas on this important subject, as well as those of scientific men in this country, have brought to light many important facts and data, the whole extent of whose application is yet a matter of research.

Perfect drainage appears to be no less essential for fields than for towns: to secure an abundant supply of the elements above enumerated, the main requisite consists in due permeability of the soil, so as to admit of proper drainage. Hence it is that clayey lands, by favouring accumulations of stagnant water, are in so many instances unproductive. The disposition of the drainage should, however, be such that the whole of the soil concerned in the growth of the plants is permeable by the air, promoting a constant filtration and succession of materials that contribute to vegetable formations. Rain brings down ammonia from the atmosphere, and its beneficial effect on lands is greatly increased where the drainage is good, as the atmospheric particles then find their way readily to the roots of the plants, and the mineral substances in the soil are more effectually dissolved. "The two fundamentals of all good farming," says Mr. Just, "consist in thorough percolation of water through the soil, and a constant accession of air." Rapid drainage is not less important; main drains ought to cease discharging at the end of four or five days, instead of, as at present, as many weeks, ceasing only in long droughts; and to be dug so low, that the superabundant moisture of the surface shall be at once effectually discharged, with a constant current, otherwise the drains soon become choked by mud. It is evident that the mechanical arrangement of drains must vary with the nature of the locality to be drained; and no attempts at drainage should be made without first ascertaining the nature of the subsoil. The following data are given as guides to the inexperienced: "If, when the soil has been carefully removed from an area of a few yards in extent, and the surface of the subsoil has been left to dry, water is found to accumulate within it, when dug into, then that subsoil is drainable, and will draw water from the surface according to the depth dug; and the ground may be made perfectly dry by the usual kinds of drains, provided those drains be laid sufficiently deep, and allowed a free discharge. Whereas, if, after the same preparation, the subsoil or clay, when dug to a greater or less depth, be perfectly dry, then no drainage can be effected therein by ordinary methods, and recourse must be had to opening transit for the surface water in open channels, so that the supersaturation of the soil may run off as directly and quickly as possible." The author contends that land cannot be drained too dry, as fluids are not so essential to the growth of plants as aerial and gaseous matters, and perfect aeration is as much required as perfect drainage. Air brings constant supplies of material from every quarter; and where the soil is kept properly drained, conveys nourishment in certain but invisible forms to the roots of crops. Another advantage attendant on aeration of the soil, is the

increased economy and effect of manure; the more perfect the pulverisation of land, the more immediate is its contact with, and absorption of, the manures thrown into it; the descent of new particles into the subsoil is facilitated, and the whole quantity of productive soil is increased, with a fund of capability, so to speak, always at command within it.

From discussing the mode of treating soils, Mr. Just passes to that of sowing seeds. "Scattering seeds," he says, "indiscriminately over the surface of the ground previously prepared for their reception, is no more sowing them, than tumbling stones into trenches properly dug for the foundation of a building is laying those foundations." The object of sowing is to secure proper germination of the seed. Seeds are to vegetables what eggs and ova are to animals; the condition of development of the latter is warmth and protection. With seeds it is "a proper degree of temperature, a sufficiency of moisture, and a free access of air, with exclusion from the direct action of light." Hence the great advantage of complete pulverisation of the soil, that the seeds may not be buried deeply, and yet at the same time sufficiently covered: for, if within the influence of light, the chemical change of the farinaceous matter of the seed into living tissues is retarded; on the other hand, if buried too deeply, the plant is so much exhausted by its efforts to reach the surface, as to impede materially its future growth. A large amount of seed is annually lost by falling into the hollows between the furrows of ill-ploughed land. "It is not to please the eye only that the ploughmen of Westmoreland, Cumberland, and other well-cultivated counties take so much pains in drawing their deep furrows as straight as a line can make them, and laying them so compact, that not a crevice between them can be found in fields of many acres; but it is to favour this grand and fundamental principle of growth, though perhaps in few instances this service may either be known or appreciated by them." The importance of these considerations becomes manifest, when regard is had to the physiology of seeds. The greater part of their substance is simple nutritive matter, intended for the support of the young plant until it can take care of itself. But if this nutritive matter is to be expended in efforts to escape from unnatural circumstances, it is clear that the capacity for growth will be diminished. A starved seed can no more grow up into a healthy plant, than a starved infant into a healthy man; and if so much care be bestowed on exposing steeped barley frequently to the air, to insure simultaneous germination, while being converted into malt, ought less care to be shown to seeds while in the soil, when the food of millions is dependent on their proper growth.

The waste and misapplication of manure in this country is deplorable, and have been so often complained of by writers, that it might seem superrogatory to insist upon it farther; but there are some subjects to which attention can only be successfully directed by constant iteration and re-iteration. In many parts of Germany and in Belgium, the most rigid economy prevails with regard to all waste animal and vegetable matter, and its proper application to land. In China, the same course has been pursued for ages: and, according to Mr. Fortune's recent work, is still maintained in full activity. The measures now in contemplation for the effectual sewerage of towns are fraught with incalculable advantage to the agriculturist; but without some acquaintance with chemistry, no person can be certain that the manure he applies is that required by the soil, and a distinction must be drawn between germination and vegetation. Highly azotized manures are favourable to the latter process, but unfavourable to the former. Mr. Just says, "Guano sown along with the seeds of turnips prevents their germination, whereas, when scattered over the soil, or buried in the drills beneath the seeds, it promotes the vegetations of the plants to a very great extent afterwards. The same is the case when liquid manure, from banks in farm-yards, is applied to soils previously to sowing the seeds. I have known turnips sown on ground so treated, fail to germinate entirely; and by injudicious application of night-soil as a dressing for crops of barley, I have seen numbers of the grain totally destroyed by contact with it, and those which escaped pushed on to such a rank vegetation after this destruction, that they could neither fructify properly nor ripen."

The same principle holds good with regard to propagation by means of buds and tubers; and here, at the risk of prolonging what is felt by many to be a wearisome subject, we quote Mr. Just's observations on the treatment of the potatoe. "The cuttings of potatoes," he writes, "or the whole tubers which we plant, have to undergo a similar change in spritting as seeds undergo in germination, and require similar conditions to favour that change and aid germination. Yet in our treatment of this most valuable and accommodating of all plants given to man for food, we err more against nature than in all others put together. Patient of every climate under the sun, we forget that it can be subject to any wrong, or require

any of our care or concern for its welfare. Prolific beyond our wants, we have glutted domestic animals with it, and employed it largely in the arts and distillery to contribute to our luxuries. Yet there is a limit to all things, and we are approaching the limits of the abuse which we can unrequitedly heap upon it. Something is wrong already both in the field and in the store; already it has partially failed in its germination during the spring; already it has become the prey of disease in its vegetation and maturation in the autumn. Nature is vindicating her right to be obeyed; and since we have neglected to learn from her by lessons of examples which she has offered, she seems determined to make us wise by dear-bought experience—to make us feel, that we may remember.

"The first law of nature against which we transgress with regard to the potatoe, is our total neglect of the due preservation of our seed potatoes. If they are only good for food, we never inquire whether they are fit for planting. Yet were we but to reflect one moment, we should soon see how unnaturally we treat them. Nature, when she alone takes care of them, keeps them within the soil—like all other subterranean buds—during their season of repose; and because, in the warm climates, where they are indigenous, they cannot easily be cut off from a due temperature for their germination, she checks it by keeping them dry in the soil. We, on the other hand, dig them up from the ground, because we fear, and properly, the effect of frost upon them; but instead of keeping them dry, we heap them up wet in immense quantities on the ground, and cover them over there, to keep them so, *with soil*, thereby furnishing them, if they do not rot, with one requisite for germination; while the masses themselves raise and keep up the temperature to supply them with another, so that germination has not only commenced, but proceeded considerably, when we dig them up again for planting. Then, calculating upon the extraordinary degree of vitality with which nature has endowed the tubers, we pull off the sprits, cut up the potatoes, and endeavour to reduce that vitality to as low an ebb as possible before we plant them. If, by the spritting of potatoes, the whole of the diastase, situated just below the embryo in seeds, be expended, then there is no provision left for the conversion of fecula into saccharine matter for the formation of the first tissues of germination, and germination must therefore fail."

When it is borne in mind that the cuttings, weakened as described, are in most instances planted in highly azotised soils, surprise at the general failures which have taken place will be greatly lessened. The remedy consists in storing up the potatoes intended for seed in places perfectly dry and dark, and instead of one large mass, in small heaps, so that all tendency to generate heat may be obviated. The precautions with regard to the aeration of young grain crops are equally to be attended to with the young plants of potatoes. Without frequent stirring of the soil while the roots are forming, and complete aeration or ventilation, however favourable other circumstances may be, proper growth is not to be expected. The objects to be striven for by the agriculturist and cultivator are of such importance, as to reward any degree of perseverance. Implicit obedience to natural laws never fails of commanding success. Nature is not to be forced or diverted from her economy: the bringing to bear a little plain practical common sense on her multifareous modes of action, must tend to the realization of the sound theoretical views of the chemist and meteorologist.—*Chambers' Journal.*

For the Farmers' Cabinet.

Acclimation of the Fig Tree.

To the best of our recollection there has not been published any account of the best method of acclimating the fig tree; and this is why I should like to trespass somewhat in your columns.

John Naglee, Esq., in Front street, near Brown, about fifteen years ago, planted a fig tree in his garden. For many years he was in the habit sometime in the fall of the year, of placing around the tree seventy or eighty bundles of straw; this was bound round with cords, so as to resemble a tall stack—the straw was removed in the spring.

During the last two winters the tree has received no protection whatever. It produces as well as formerly, and may be considered as perfectly acclimated.

B. G. Boswell.

Philadelphia, Dec. 9th, 1847.

To Prevent the Smoking of a Lamp.—Smoke is the result of imperfect combustion. Combustion is always imperfect when more matter is decomposed than is consumed. This is evident from the fact, that smoke may be collected and *burned*. To prevent the smoking of a lamp, therefore, it is only necessary to prevent the decomposition of too much oil. This is done by *lowering* the wick till the blaze terminates without smoke. A little care in *trimming* a lamp will save expense—an unnecessary waste of oil—prevent the blackening of the ceiling, and the offensive and unwholesome smell occasioned by the smoke of a lamp.—*Southern Planter.*

The Expense of Farm Yard Manure.

BY D. P. GARDNER.

THERE are few farmers who adopt the plan of manuring to any extent, who have not been on mature reflection, somewhat surprised at the great expense they incur. When the cost of raising and storing the provender, of feeding out, of handling the manure, of carting to distant fields, of plowing, and in a great measure for the purpose of obtaining a fresh supply of provender, are duly considered, the expense is by no means trifling. It is indeed urged that stock is necessary to the farmer, and that he finds it profitable to feed such well; but I am not considering the question whether a farm be so situated as to make it profitable to graze, or make cheese and butter, but the more simple question of the expensiveness of employing farm yard manure as is now done or amending the system. It is urged by British agriculturists, that a supply of neat cattle is an essential to good farming, and that the farmer should be content to gain the manure only for his time, labour, provender and capital. The plan adopted under this recommendation consists in purchasing a number of Highland or Irish steers in the fall, when they are driven into England for the purpose, and maintaining them until spring, when they are sold in the neighbouring markets to the butcher; and we are assured that if the animals sell for as much as they cost in the autumn, the farmer is well paid for the heavy investment of capital in land and animals by the manure reserved. It is not denied that many make a profit of some kind besides, but this is the dictum of agricultural authors and unfortunately the experience of many worthy men. It is further considered that more than a third of the farm should be set aside for the purpose of supplying the hay, turnips, mangel wurzel or other necessary provender to carry out this scheme. Without desiring to push the expense to the highest figure, it is however useful to consider what may be the effect of this recommendation amongst us, allowing a fair amount of profit on the feeding. It is stated by residents of Dutchess county, in New-York, that it is a common practice to take up western cattle in the spring or during the early summer, graze them untill fall and then send them to market. The cost of the animals averages $20 a head, and they are sold at $30 each, in New-York market. On farms of 200 acres 100 head can be taken and this will pretty nearly exhaust the productive resources of the land.* Let us suppose that the animals exhaust the provender of the farm and the expense will be at 7 per cent. per annum,

Interest on land, worth $50 the acre,	$700 00
Interest on the investment for 6 months, 100 head at $20 each, - - -	70 00
Expenses of labour, 2 men and a boy 6 months, at $18 for each man and $10 for the boy, - - - -	276 00
Expenses,	$1,046 00

The profit on the cattle will be $1,000; the farmer does not therefore at this rate obtain a return of seven per cent. on his capital, in as much as he pays $276, for labour; and therefore if instead of farming, he made an investment of his money ($12,000) in bond and mortgage at 7 per cent. reserving his house, he would do much better than by this system. The numbers given above represent very nearly the condition of things, the only difference being that a small surface is in corn, grain, orchard and garden, which do not produce more than sufficient to maintain the stock used by the family and the vegetables and grain for the table. The manure dropped is left on the field and wasted very considerably from this cause, little is collected, and the whole broken and spread in the spring does no more than maintain the land in sufficient heart to produce the necessary crop for the next season. There is little doubt that this process is without economy, but it is extensively practised; and it is a subject of consideration whether it be not as profitable as any system in which the feature of feeding cattle for manure is introduced; to arrive at a fair conclusion on this subject we must omit all profits derivable from milk, cheese or calves, for in this case the stock is made a means of selling the crop as well as supplying manure, and they will consume more food and be a more permanent portion of the investment. It is yet a question with practical men, who are within reach of a good market, whether corn or grain can be profitably turned into flesh, and we are not disposed to entertain this matter, but are merely drawing attention to the great expense of farm yard manure.

Suppose, however, that all the straw is economized on a partially arable farm and this is added to the yard, the other provender being derived from a third of the land; will the operation be much more profitable! The number of head of stock kept will depend upon the condition of the grass land, which must be manured to keep up a fair yield, and little more than the straw will go back to the land from whence it came. The addition will unquestionably sustain the land in

* The statement of Mr. Wyckoff at the Farmer's Club, New York.

some degree, but by no means to the extent imagined. We are in the habit of considering the successes of British agriculture without remembering two great points, that the farmers of that country expend annually for one article of manure, bones, derived from foreign countries the prodigious sum of $3,000,000 without considering the home supply; that guano, nitre, plaster, salt, and lime are employed at such rates as to become a still greater charge: and secondly, that the corn laws under which their agricultural prosperity was fostered was a premium of 53 cents a bushel for wheat, or upwards of $10 an acre, by which this system of manuring was paid. Had it not been for the mineral and foreign manure, does any one believe that the agriculture of that country would have prospered? In Norfolk, a poor county originally, now one of the most fertile in England, it is the foreign manure much more than any other cause which has raised the farming. The contiguous port of Hull received in 1835, 25,700 tons of foreign bones in the year. No extra stock is kept in Flanders to supply manure, but that economical people resort to the cities and to other expedients.

In the foregoing remarks my design has been more to induce our farmers to think upon the subject, than to make an estimate of the cost of yard manure. The scene of my agricultural experience is not the State of New York, but central Virginia, and I cannot therefore speak with certainty, but rely upon the representations of others. The price of home-made manure in this State, in the river counties, is estimated at more than the cost in the city of New York with carriage and handling; this becomes in Dutchess county equal to 62½ cents for a single horse load of about 25 bushels delivered at the wharf. It is customary to add twenty or more loads of this manure to the acre for corn, at an expense, with labour, of nearly $20. If I am not correctly informed, I trust the reader will proceed with me, using his own calculations, but this estimate cannot be far from the truth, when it is remembered that the greater part of our intelligent farmers shrink from the expense, and have arrived at the conclusion, that for a man of limited means, the exhaustion of the soil is the most profitable system of farming.

The fermentation of yard manure is in no way different from that which occurs in other forms of organic matter placed under similar circumstances. The process is indeed a peculiar form of chemical decomposition or molecular change, by which the elements present, take on new combinations of a more permanent character. Water, carbonic acid and ammonia, are the principal resultants of this change; whilst heat is an incident. Practical men are altogether carried away by this phenomenon, regarding it as something occult, and beyond any solution of science, whilst indeed it is a process so simple and manageable, that the most ignorant may be taught in a few minutes to control or modify it. So far as I can make out the origin of the peculiar respect of farmers for yard manure, it seems to depend on this mysterious change. I think that Judge Buel and many others, have assisted to engraft on agriculture a sentiment to the effect, "that fermentation is the sheet anchor of the farmer." How far preconceived ideas and a want of knowledge of the process of fermentation have influenced these writers, will appear from the following considerations.

The agricultural world has been shaken by the contentions of those who advocated the use of long manure, and those, who denouncing this practice, have set their dependence on short or well rotted manure. Both these partizans have placed implicit confidence in the action of fermentation; but one set have in truth recommended such manure as was undergoing this change, whilst the latter prefer dung (well rotted,) which has long ceased to be in a state of fermentation. So that whilst in their essays they have denounced any thing but fermentation, they have uniformly used manure not undergoing this change. So soon as the dung-hill ceases to give out considerable heat, fermentation has stopped, and every practical man knows, that in six, ten, or twelve months, when the manure is thoroughly broken and short, there is no shade of heat in it. Other excellent farmers who have nailed on their standards the dogma of "*fermentation*," practice and recommend plans for the management of manure in which fermentation is completely arrested. This is the result when yard manure is composted with lime. In nearly all forms of compost into which lime, salt, or ashes are introduced, fermentation is made impossible, and yet every body knows that this is a common practice.

The contrary position, that fermentation has nothing to do with the success of yard manure, is much more susceptible of proof. Not only are the preceding remarks calculated to show this, but numerous other considerations establish the same point. But whatever may be the condition of the manure whilst in heap, writers have, without exception, failed to consider the effect of scattering it over the land, and mixing with the soil. The moment the manure is so dis-

posed, it is put in contact with air, over a large surface, and when plowed into a well drained mellow soil, the surface of contact is further extended. The effect of this is to stop fermentation, and induce the very dissimilar change of eremacausis. The tyro in chemistry knows this truth. What then is the origin of the loud controversy about long and short dung; in truth, nothing but ignorance, if the process of fermentation entered into the heads of the combatants as the great object of either. But we are told that certain forms of dung are hot and others cold, and therefore the former are suited to cold soils, &c. This notion has so much weight with many, that I cannot pass it by without notice; but it is indeed not worthy of discussion. The amount of heat given out by two parcels of manure in a given time, depends upon the rapidity of fermentation, and this upon the degree of dryness, or amount of animal matter present in either parcel. If the amount of animal matter in a parcel of cow dung be the same as that in a similar pile of horse dung, they will both yield the same number of degrees of heat; if they are both wetted to the same degree, they will give it out in the same length of time, but if either be wetter, that will take the longest time. Horse manure being drier than cow dung, ferments more rapidly in heap, but spread it on the soil and place it under all circumstances in the same position as cow dung, especially when the animals are similarly fed, and the difference vanishes. In turning them into the soil they are placed in circumstances nearly similar.

If however the practical man still adheres to the position that it is the condition of fermentation which is the source of the excellence of yard manure, there is no difficulty in discovering substitutes much less expensive. I allude to this position, because the idea of the mysterious influence of fermentation has so completely enthralled the minds of many agriculturists, that there is little hope of disentangling the subject by mere argumentation. One of the most eminent men of this school has recently dilated to some extent on the subject of applying *yeast* to the soil, as an universal manure. Masses of leaves enter into a state of fermentation precisely analogous to that of yard manure. Straw kept moist does the same, especially if watered with putrescent ditch water or urine. Green weeds thrown together with peat and kept moist rapidly ferment. Spent tanners' bark undergoes the same change. Litter of any kind kept moist, or made to surround fish, dead animals, or similar substances, rapidly ferments. One part of dung to three of peat, straw, or other waste vegetable matter, kept moist will throw the whole into fermentation. Many other plans might be described, but I trust the farmer will be satisfied at all events, that there is nothing mystical in the act of fermentation; and that it is very questionable, whether it can take place in the soil, or be in any way advantageous to his crop.

In no good experiment has it ever been found that farm yard manure failed to advance the crop, it has defects, but this is not one of them. When, however, the land is already well dunged, or very rich, its effects are much less apparent, indeed the largest crops have in every case been raised by other means. Lime, bones, ashes, plaster, salt, charcoal, nitre, and other manures, have each yielded immense crops on particular occasions, far outrivaling any thing that common manure yields; but they are not certain in their effects. In the same way a marling, claying, burnt clay, drainage, subsoiling, deep plowing are often attended with marvellous effects; but to adopt these practices with any expectation of success, requires mature judgment, and a heavy outlay. Yard manure does not yield very large crops by itself; when assisted by good tillage and other means it has done so, but alone it will not give in any case extraordinary returns. There are good reasons both for its uniform and limited success.

On a grain or hay farm, especially if it be remote from market, the straw or hay goes to the stock, and by them is converted into manure. I have already given a history of the ashes of hay, they contain every mineral component of the next crop of grass; so the ashes of any other kind of provender yield the mineral substances necessary to feed the future crop of the same plants. There is indeed a loss, inasmuch as the animals appropriate a considerable amount, and of the most important portion, to their substance and growth. The minerals are the same, but the proportions are not the same. Now if we regard the efficacy of the manure as depending in part on these minerals, it is evident that the grass or grain will be benefitted to some extent by finding in the soil an increased quantity of every mineral it requires. So far the manure, by enlarging the proportion of mineral matter fitted for the food of plants, secures an increase of crop; but this increase is within narrow limits, because the minerals added in manure are of sparing solubility, and are not in the full proportion required by the plants. The hay has been fed to growing animals, which have appropriated nearly all the bone earth it originally contained, for the making of bone, this is necessarily lost to the manure.

Instead therefore of adding to the meadow one hundred pounds of bone which might be required for a large crop, perhaps twenty pounds only go in the manure, any deficiency must be drawn from the soil, and this being a scarce and very insoluble body, the grass cannot obtain a sufficiency from this source. Now had a special manure containing a large quantity of soluble bone earth been put on this soil, the crop might have been doubled or trebled thereby.

In the case of every other plant, the same truth obtains. Each crop evinces some partiality for mineral substances, or for forms of nitrogen, none of these are in great excess in yard manure, but all are present; hence the crop will be certainly increased, whilst it can scarcely be inordinately great. When lime and other simple amendments which contain only one kind of plant food have brought about extraordinary results, it has arisen either from a want of the substance in the soil, a peculiar partiality of the crop therefor, or some collateral action. Mature deliberation is therefore necessary when a simple manure is employed to secure any result, or to guard against the possibility of doing the soil an injury. No empirical rules can cover this case, but when success is attained it is often immense and permanent.

We cannot overcome this objection to farm yard manure by increasing the dose, whilst there are other reasons against the attempt. Ask under what circumstances smut and rust attack grain crops; it will be discovered that this occurs chiefly on lands heavily dunged. On the sea coast, and where mineral manures are largely employed, smut and similar fungoid diseases are rare. The farmers of Cheshire have for years used little manure besides their native salt, to guard against the rust which had taken possession of their meadows. This is not the only cause of rust, but most certainly one of the chief. Another consequence of inordinate dunging is the laying of grain; the young plants run up so rapidly that they do not become sufficiently strong to bear the ears, and therefore fall, and the crop is lost or much injured. This effect is also seen on lands in timothy grass, and is sufficiently familiar. In the third place, the use of yard manure is additionally expensive to the farmer from the weeds it engenders. Where long dung is employed in quantity, the amount of weeds produced renders it almost impossible to grow plants broadcast, the effect being a less crop than if no manure had been used. This difficulty is in a measure removed by employing short dung; but then all the fancied benefits of the act of fermentation must be given up, as well as the effects of most of the nitrogen and the soluble salts of the dung and litter.—*N. Y. Agricultural Transactions.*

Cultivation of Raspberries.

A few words on the cultivation of this favourite fruit may be useful at this season, when the old beds require care, and new plantations should be made. The raspberry will bear fruit with almost any treatment, and this is the reason its culture is so often neglected. Odd corners of the garden, and shaded situations where nothing else will flourish, are often chosen, and a small crude fruit is the result. Like every other garden production, the raspberry knows how to turn free air and warm suns to excellent account, and every available advantage of this kind should be given them.

In most gardens, we find this plant cultivated in compartments, in rows just wide enough apart to allow of a passage for gathering the fruit; but, too frequently, these alleys become a mass of entangled branches before the summer ends, thus preventing the comfortable taking of the crop, and keeping the young shoots from the sun and air. Now, in whatever way you plant your canes, let there be great distances between the clumps, wide enough in the rows to allow of other crops. If the rule is observed, never to have two rows of raspberries together, but to put them at distances sufficient to allow of the growth of cabbages, turnips, celery, &c., every desirable end will be answered. In this case, the canes need not be far apart individually, and a greater as well as a finer produce will be secured.

In making new plantations, let the ground be trenched half a yard deep, and plenty of rotten manure be incorporated with the soil. this should be done a month or two before the time of planting, to allow of the settling of earth. As a general rule, raspberries planted this season should not be expected to bear fruit the next, as the object is to secure a vigorous growth of canes for another year. If you get your plants from a nursery with but little root to them, and probably very dry before you plant them, it will be necessary to nurse them well, in order to get any new shoots from them; and, if this year's stems are allowed to bear, you will probably have the fruit and nothing more for your pains, and have to fill up vacancies next year. You had better, therefore, cut down the stems to within a foot of the ground at the time of planting, and wait patiently till strong shoots next year repay you for your trouble.

But if you have a supply on your own

ground, or can go yourself and see the plants taken up at a nursery near your garden, you may secure a crop next season, without the risk of injuring your plantation afterwards. The writer has just planted out a quantity of the Fastloff raspberry, with the two objects of having fruit next season, and a permanent stock, and will detail his manipulations for the guidance of any who may have confidence in him to follow his example. In the first place, a hole was dug with a fork, about half a yard across, but not deep, the soil being only loosened by that instrument. With the same invaluable tool the plants were dug up from their old quarters, care being taken to have masses of root fibres adhering to them, and at least one strong bearing stem was inserted in each hole, surrounded by four or five smaller ones. The weak canes were cut nearly to the ground, but the strong were allowed about four feet, and from these the writer has no doubt abundance of fruit will be gathered, and, in most cases, shoots produced as well. The disturbance being small, and great care being taken in arranging and treading down the roots, the season also being early, it is concluded the canes will have no difficulty in progressing as well as they would have done in their former situation. This plan presupposes that you have an abundant stock of your own, or are not careful of expense, since more canes are required than would ordinarily be given to a new plantation.—*Gardiners' Chronicle.*

Pomology in Philadelphia.

Passing a few hours in Philadelphia lately, we made a hasty visit to our correspondent, Dr. W. D. Brinckle, who is already known to horticulturists as one of the most zealous of amateur cultivators.

Dr. Brinckle's *penchant*, as we were aware, is the production of seedling varieties of fruit. Hitherto he has been experimenting largely upon the *Strawberry* and *Raspberry*, but he has now turned his attention to the Pear, Apple, and other fruit trees.

His residence is one of the fine houses in Chesnut street, forming part of the block known as *Girard Square*. Of course, therefore, his gardening operations are mainly confined to the small space comprised in a deep yard of a town house. We confess that when we saw the collection of seedling fruits assembled there, in various stages of growth, hundreds within that narrow space, and all most systematically arranged—many that had already given surprising results, and a multitude of others that promised well—we found abundant proof how easy it is to bring great results out of small means, and how profitless to the country are thousands of gardens, of the largest size. The limited area before us, only a few hundred square feet, contained a promise of dozens of new varieties of fruit that may be of priceless value hereafter to every one leading a rural life.

Dr. Brinckle's plan embraces both *hybridising* and raising accidental varieties from seeds of the finest known sorts. In order not to lose time, and to be able perfectly to control the fertilization of plants under experiment, Dr. B. has been in the habit of having a large number of strawberries, raspberries, etc., in pots. These continue their growth, bloom, are crossed artificially, produce fruit, and the seed is sown in an apartment in the upper part of his house during the whole winter; thus ennabling Dr. B. to carry on his scientific experiments throughout the year. In Raspberries, he has been particularly successful. The *Cushing*, already made known to the public, is a variety of merit; but one which has fruited for the first time this season—a fine strong plant, eight feet high, with many side shoots, and which, we understood from a friend who is a capital judge, was quite a pomonal wonder in its way, bids fair to eclipse all his other seedlings. This is a true *yellow* sort, much larger and finer than the white [misnamed yellow] Antwerp, very productive, and of excellent flavor. Dr. Brinckle showed us a faithful drawing of this new Raspberry, which he proposes to call Col. Wilder, after the distinguished President of the Massachusetts Society. We hope to be able to give a drawing and description of this fruit in an early number of this journal. When the various new specimens of trees and plants have been tested, those worthy of preservation are removed to a farm some miles distant from the city. Altogether we left Dr. Brinckle, and his singularly rich and singularly limited grounds, with the feeling that he is doing as much or more in originating new fruits, in a strictly scientific way, than any other person in the country. —*Downing's Horticulturist.*

Shaker Barn at Hancock, Mass.

The Society of United Brethren, or "Shakers," at Hancock, Mass., have a large circular stone barn, which is justly regarded as a curiosity. In company with Wm. Bacon, Esq., of Richmond, we lately made a call at the Hancock village, and took a short look at this barn. It was built in 1826, is 300 feet in circumference, and 90 feet in diameter on the inside. The walls are of stone, 28 feet in height. The entrance for

loads is on the second story. The bay is in the centre. The teams on entering pass along an avenue between the bay and the wall—the loads are discharged, and the teams go out at the same place they went in. Twenty-five loads or wagons can be taken in at one time. The bay will hold 400 tons of hay. The stalls for cattle and horses are on the first floor, and are arranged in a circle corresponding to the shape of the building. The animals stand with their heads towards the centre of the barn, and are handily fed from the bay. There are stalls for 75 head of cattle. The barn is substantial and convenient, but not quite as convenient, we think, as the Shaker barn at New Lebanon.—*Cultivator.*

Manure for Strawberries.—The best top-dressing for strawberry beds is a little leaf mould pointed in with a fork, early in March. A good addition also is nitrate of soda, three ounces to each square yard, sprinkled over the surface at the same season. Bone dust and charred turf, pointed in with a fork in October, have also been found highly beneficial.

THE FARMERS' CABINET, AND AMERICAN HERD-BOOK.

Philadelphia, Twelfth Month, 1847.

We have often thought that Dr. Johnson's definition of the business of a schoolmaster, was particularly applicable to that of the agricultural journalist: "To recall vagrant inattention "and "to stimulate sluggish indifference." Every movement of the farmer—every step which he takes, is emphatically, under the broad canopy of Heaven—it is in the midst of the forests, and the fields, and over the luxuriant carpet, which nature has so liberally spread abroad for his enjoyment. He ploughs—he plants—he cultivates under a full persuasion of the fidelity of nature's great "Fructifier." He throws his seed into her bosom, nothing doubting the continued fulfilment of the ancient promise, that seed time and harvest shall not cease while the earth remaineth.

It is an appropriate duty of the Periodicals which the farmer reads and puts into the hands of his children, not only to keep him informed of the improvements that are continually bettering the condition of his "craft," and to suggest to him variations in his crops, as well as new modes of feeding them, and everything else in fact, connected with his "Thrift."—the appliances of his farm and household, but also to raise his views from his horses and his plough, to the magnificence of nature that is around him; and from nature, as the poet says, up to her Creator, and to remind him occasionally of the fact, which his customary round of duties may lead him to forget, that his vocation, if properly followed, is among the noblest and most ennobling, pursued by man. There is a progressiveness—an onward course, in the efforts of the farmer that render them delightful; and why should not this be continually accompanied by corresponding improvement of the mind and enlargement of views, that would place his among the most intelligent and respectable of the professions?

The farmer, it seems to us, cannot behold, but with great complacency, his horses—his cattle—his sheep—his everything that is living around him, obviously improving by his attention, from year to year—he perceives the truth of the old saying, that "land is honest," for he finds his fields always grateful for whatever he bestows upon them; and there is an indescribable feeling of consciousness, that he deserves far more of his country than the man who has led armies to battle, and slain his thousands; because, in the language of old David Lawton, he has helped to multiply the comforts of his species. There is every inducement for our farming population to believe, that the tendency of everything connected with their vocation, is like every thing else, in this great and wonderful Republic, upward and onward. Let us then extend our views—let us "look aloft,"—and who can doubt but every judicious enterprise will be attended with a result correspondent with the aim—as advantageous to the permanent interests of the country, as it will be gratifying and beneficial to ourselves.

Before another number of our paper shall appear, a new year will have begun its round, and new resolutions and new plans may be formed by the indifferent and careless of every vocation. Let him who neglects his heart—his lands, his fences, his cattle, or his buildings, be up and doing, for it is the diligent hand that maketh rich.

The first No. of "*The Iowa Farmer's Advocate*," edited by H. Gates, and published by James Tizzard & Co., at Burlington, Iowa, has been lately received at this office. It is printed on 24 quarto pages, at one dollar a year. The number before us contains a great deal of valuable matter, and we should consider it well worthy the support of our western farmers.

The Address of Dr. Darlington at Oxford, in Chester county, in the Ninth month last, we think, will be read with no ordinary interest. The subjects glanced at, will well bear to be gravely reflected upon; and perhaps more particularly in neighbourhoods where the land is so well improved, and the crops are so luxuriant, as they are in the vicinity of Hopewell Cotton Works.

In the last number of the *Cultivator* we find a communication signed J. J. T., which contests the claim of "Newbould"—Charles Newbold, we apprehend, of Burlington county, N. J., is meant,—to certain important improvements in the cast-iron Plough, made some forty or fifty years ago, and awards them to Jethro Wood, of New York. See New York Agricultural Transactions for 1846; and Farmers' Cabinet, p. 19. current volume.

THE quantity of rain which fell in the 11th month 1847, was ..... 2,83 in.
Penn. Hospital, 12th mo. 1st.

Poudrette.

A valuable manure—of the best quality, prepared in Philadelphia, for sale at the office of the Farmers' Cabinet, No. 50, North Fourth Street, or at the manufactory, near the Penitentiary on Coates' street. Present price, $1 75 per barrel, containing four bushels each, or 35 cents a bushel. Orders from a distance, enclosing the cash, with cost of porterage, will be promptly attended to, by carefully delivering the barrels on board of such conveyance as may be designated. The results on corn and wheat have been generally very satisfactory. Farmers to the south and in the interior, both of this State and of New Jersey, are invited to try it. We are now ready to supply any demand for wheat.

JOSIAH TATUM.

Philada. 8th mo 16th, 1847.

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THE FARMERS' CABINET,

IS PUBLISHED MONTHLY BY

JOSIAH TATUM, No. 50 NORTH FOURTH STREET, PHILADELPHIA.

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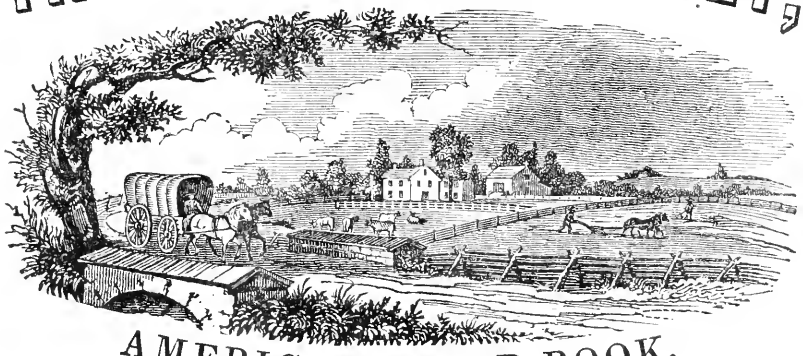
Joseph Rakestraw, Printer.

THE FARMERS' CABINET,

AND



AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—Liebig.

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BY JOSIAH TATUM,

EDITOR AND PROPRIETOR,

No. 50 North Fourth Street,

PHILADELPHIA.

Price one dollar per year.—For conditions see last page.

William H. Dillingham's Address.

On the 10th of Ninth month last, W. H. Dillingham of this city, delivered an Address before the Horticultural Society of Chester county, Pa., at West Chester. The following are extracts from it.—Ed.

The name of the State in which we rejoice, is descriptive of its characteristic features to the first settlers. Penn found the country granted to him by his sovereign, a forest, and the designation assigned to it, equally simple and appropriate, means, in plain speech, Penn's woods. It has been our lot to see it, in "bud and blossom like the rose;" and it is our business here to-day, surrounded by the treasures of Pomona and the splendors of Flora, products of the rich inheritance of a happy soil and clime, perpetuated to us by the virtues of our ancestors, while felicitating ourselves in these enjoyments, to increase its fertility and beauty. To the region occupied by the members of this Society, as part and parcel of the original county of Chester, pertain the honour and the responsibility of having been the first resting place of the Proprietary of this then noble forest, the chosen spot to begin the development of his great idea of a commonwealth founded upon the blessed principle of "peace on earth and good will to man." You are the children's children in the third and fourth generations of his companions; many of you still cultivate the paternal acres which Penn himself granted to your ancestors. You have still the custody of the earliest muniments of title, and the records of the first judicial proceedings in our commonwealth, which secure to you the possession of the soil that produces these plants and fruits and flowers.

Invited upon this occasion to speak for you and to you, the speaker has identified himself with you, and feels that he has a right to do so, not alone from a devotion to the common objects of your interesting anniversary. Our children have a common ancestry in the friends and companions of Penn. Within these walls, now decorated by fair hands for this autumnal festival, for half a life-time he took an earnest, anxious part in the questions connected with the settlement of the estates where you plant your gardens and cultivate your grounds. Here he has toiled, as some present can bear him good witness, for days and weeks, to demonstrate, that a decayed relic of one of the ancient monarchs of Penn's woods, "to wit," a certain black-oak stump, should determine all questions about a boundary line of one of the estates "aforesaid." But this ancient

hall of justice, identical with the history, transmission, and partition of every estate in this county for the last sixty years, and with the present title to each particular spot where these flowers and fruits were grown, is soon to pass away. It was well to decorate it thus before the final sacrifice. Already its elegant and classic neighbour seems impatient of its humbler presence, whose interesting memories it cannot supply.

In reviewing the history of this time-honoured hall, how are we reminded of the contrast between those warlike demonstrations from ancient upland, which threatened, with artillery, to batter down these rising walls, and the peaceful decorations, redolent of beauty and harmony, which grace its *exit*. These flowers and fruits, methinks, are kindly tokens which mother earth sends up to bid the Old Court House good bye.

As Chester county led the van in the settlement and culture of Penn's woods, so should it still be the banner county in agriculture and horticulture. It possesses the elements for this distinction in the virtue, industry, intelligence, and thrift of its population, and in the fertility of its soil, its genial climate, its varied surface, its beautiful streams, its abounding springs, its rich, indigenous Flora—and in the good fortune to have produced a son, the pride and pleasure of whose life it is, to develop the history, character, and properties, the beauties and the uses of the vegetable world. Permit me to add to these commanding advantages, your vicinity to and daily improving facilities of intercourse with our great metropolis, justly famed for its devotion to science, and particularly to the study of the natural sciences. Her schools and her collections in these departments are scarcely rivalled on this continent, and they are all within your reach. You have already set an example worthy of imitation by every other county in the state, in your own Collections of Natural History. They evince a taste and spirit worthy of all commendation.

As Pennsylvania was the first to establish an Agricultural Society, so she was the first State of this Union to establish a Horticultural Society: still earlier she made an attempt at a botanic garden. It is now near an hundred years since Bartram began his enterprise on the Schuylkill, and its glory has not yet departed. You have still the evidence before you of what Humphrey Marshall attempted, soon after, in this vicinity.

Botany, an essential element of Horticulture, has still higher claims upon you: the first cultivators of the ancient county of Chester were countrymen of the immortal Linnæus, the great discoverer of that secret, whereby the whole vegetable kingdom was first reduced to system through all its varieties, from the trees of the forest to the moss.

The Swedes were the true pioneers in this cultivation, now our pride and boast. Within a century after the hardy sons of the North set foot upon this soil, and with stout heart and strong arm assailed the giant forests, their illustrious countryman possessed himself of his master key.

Within a few years Horticultural Societies have given it an impulse in all its departments unknown before. It is not fifty years since the Horticultural Society of London was founded. The labours of this Society have produced results truly wonderful. The example has been followed, and similar Societies have multiplied both in Europe and in this country. That of Paris, established in 1826, has been patronized by the court, by the nobility, and very generally by their distinguished men. The *Jardin du Plants*, at Paris, is regarded as the best establishment of the kind in the world, and includes what may be called a school for horticulture.

These are, perhaps, the main sources of that impulse which has been given to this pursuit throughout Europe. Horticultural societies are now universal, and rapid progress has been made here as well as there, within the last thirty years. Nothing is more obvious to those in the habit of resorting to our own markets, than the improvements in esculent vegetables and fruits, within this period, both in variety and quality. Still greater advances have been made in the general diffusion of a taste for plants and flowers. The florists constitute now an important class in our large towns, and some of their establishments are truly magnificent. The Greenhouse, the Hothouse, and the Conservatory, are regarded as among the most refined and elegant indulgences of men of wealth and taste, and very generally introduced. Many of our most distinguished men, in the various professions and in the higher walks of life, took an active part in the formation of the Pennsylvania Society, gave great attention to it for years, and still help sustain it. It has always been a special favourite with the fair sex, whose tastes and habits are so congenial to the beautiful flowers, and their virtues so well reflected in them. The monthly exhibitions furnish opportunities for pleasant re-unions to those who do not indulge in the gaieties of dissipation, and are uniformly characterized by pervading cheerfulness and innocent enjoyment. It is impossible to be selfish or

ill-natured at a horticultural exhibition. It is the appropriate place for cordial greetings, kind words, winning looks, and cheerful smiles.

Our anniversary festival is well known to you as the most popular and most joyous of the year. Nor do the votaries of Flora and Pomona grow weary in their assiduities to keep up the interest of these annual exhibitions. Few know how much time, and care, and thought are given, and cheerfully given, in the preparations. There, as here, no doubt, the participation of the ladies adds a zest to these labours—what else, indeed, could have drawn such thousands and thousands to our gala through such a succession of years—the gay and joyous throng increasing at each succeeding anniversary. It has in some measure supplied that, in which it is said we were deficient—*sources of innocent amusement.*

Sewage Manure.

THE attention which has been lately paid to sanitary statistics, has thrown much light upon many subjects of importance which were not, at first sight, very evidently connected with them. It appears, from some of the striking facts which have been evolved during these enquiries, that the land in the neighbourhood of populous cities may be so fertilized for agricultural purposes, by the judicious application of that which is now one of the principal causes of impure atmosphere, disease, and death—*the sewage manure*—that the country may be enabled to support its present population, nay, even a much increased one, in years of average produce, in ease and plenty. Dr. Liebig said, some years ago, that, by the application of chemical principles to agriculture, England might be made to produce half as much more breadstuffs than she had ever yet done; but these sanitary reports very much exceed the calculations of the learned Doctor. For instance, the report on the sanitary condition of the borough of Sheffield shows, as clearly as figures and the application of scientific principles can show, that the sewage manure of that town, with its one hundred and ten thousand inhabitants, is equal annually in fertilizing power to 3,140 tons of guano,—in value £30,000—and sufficient to keep one hundred thousand acres of land in a constant state of fertility on the four-course system of farming. On the ratio of this calculation, the refuse of London, with its two millions of inhabitants, would be equal to 56,520 tons of guano, its value £540,000, and its fertilizing power would suffice for one million eight hundred thousand acres of land. The Rev. Mr. Huxtable presented some most extraordinary facts upon this subject, at a recent meeting of scientific agriculturists, held at Sir Robert Peel's. The reverend gentleman stated that, by the application of liquid manure, a farm of ninety-five acres of land, ten of which only were under the plough when he entered upon it, and which then supported fourteen dairy cows and grew 48 bushels of wheat and 40 bushels of beans, was caused to produce annually 1,600 bushels of wheat, support 40 head of cattle, cows and calves, and fatten 100 sheep and 80 pigs. Of course the *whole* of the 95 acres were now broken up. This farm, too, which under its former management only partially supported four labourers, now employs twelve all the year round. When two such important ends as the getting rid of a most dangerous and deadly nuisance, and the conversion of it into a source of profit and plenty, can thus be answered by one simple and ready application, is there not every reason to hope that at least some portion of this application will be adopted. Am I right in supposing that these facts will interest your readers? They are of the highest importance to the English community, for what can be more so than the increase of their country's salubrity and fertility?—*National Intelligencer.*

From the Cultivator.

The Wood Plough.

I WAS intimately acquainted with Jethro Wood for nearly thirty years, residing within five miles of him during the whole period in which he was engaged in improving the plough. In the early part of 1812, I tried to procure one of Peacock's, near Philadelphia, but failed; and on my return I spoke of my disappointment to him, when a long conversation on improvements in the plough ensued. From that time the subject continued to claim his attention. In 1814 he obtained his first patent, the specifications for which I drew. The chief improvements—if my memory is correct—consisted in the superior *shape* of the cast-iron mould-board, and a *small wrought share*, fastened on with screws. I had one of the first that was made, *probably* before it was patented.

To understand the importance of these improvements and of those which followed, it may be necessary to learn how farmers had to manage in early times; and for this purpose I give an extract from *The Plough Boy* of 1821, vol. 3, page 5, with some *verbal* alterations:

"Ten years ago, the farmers of this town

were satisfied with the Bull plough. They thought it superior to every other among roots and stumps. It was easily drawn back when it got fast, for it generally had no coulter; the share but little slant, and a short nose.

"Hard gravelly ground, however, soon dulls a plough share. Many of us had to go far to a blacksmith's. While we were gone, the team was idle at home. When we arrived the shop floor would be partly covered with plough shares, but *first come, first served*, was the rule. From one-fourth to half a day was often lost in this way. But this was not all our trouble. The share sometimes came back in a different shape—it no longer ran like the same plough. It often had too much or too little *pitch*, and the share warped in hardening. A load of dirt fastened on it," &c.

Such was the state of things when Jethro Wood introduced his plough. Its *permanent shape*, and *cast-iron edge*, wrought a total change in our condition, but not without great opposition for a time. He told me that all his friends,—with one or two exceptions,—endeavoured to discourage him from trying "pot-metal!" and the same opinions were prevalent when he proposed to dispense with the old sheath or standard, and substitute a projection from the upper edge of the mould-board, to pass through the beam. His language to me at that time was, "I intend to make it as simple as a skimming dish." For this improvement alone,—whether it pass through or be fastened under the beam—his name should be immortalized, and no candid person can deny him extraordinary merit, when he considers that every plough, down to that time, had been encumbered with a heavy sheath of wood or wrought iron—expensive, and liable to get out of order.

In his first patented plough, nearly a dozen screws were employed; but in that of 1819, not a screw was seen; and the ploughman was rendered independent of the blacksmith —avoiding long bills and great loss of time.

The exercise of mind and amount of labour to perfect these improvements, can scarcely be appreciated by those who have not been engaged in similar pursuits. It was a new field, and everything had to be learned by experiment. To discover and procure the best materials for patterns, as well as to prepare them, employed him for a long time; and most men would have shrunk from the difficulties that met him at the foundries. Often he had to overcome the awkwardness or unwillingness of the moulders by presents, or by showing them how to succeed with his own hands.

I am satisfied that all his patented improvements were inventions of his own—originating in his own mind; and to avoid encroaching on what others had invented, he had every volume within his reach that treated of ploughs—including several Encyclopedias,—carefully examined for that purpose.

To Jethro Wood's name belongs the honour of rendering the plough that *cheap* and *efficient* instrument that we now find it—enabling us to cultivate our fields at less than a quarter of the former expense, and saving millions to the country.

David Thomas.

Greatfield, Cayuga co., Twelfth mo. 10th, 1847.

Exhibition of the Agricultural and Horticultural Society of Brussels, October 1st, 1847.

The middle of one *salon* was devoted to the various kinds of grain, which were shown in the straw; three rooms were completely occupied with samples of potatoes, consisting of almost every known variety. Some idea may be formed of the interest the Belgians take in the cultivation of this useful root, by the fact that there were more than one hundred and eighty collections of potatoes, among which I counted about forty exhibitors of seedlings raised in 1846 and '47, the particulars of which I will give presently. Vegetables of every description were numerous and generally fine, especially carrots, pumpkins, and cabbages. The fruit was magnificent. I hardly know how to express myself sufficiently complimentary of the pears and apples,—finer, I believe, were never before exhibited, certainly never surpassed in quantity or quality. The interest was further increased by some specimens of fine seedling pears, of which more anon. This rich display entirely filled one large *salon* and two ante-rooms. As for flowering plants, of course, no one expected to see the brilliancy of a spring exhibition, that is out of the question at the end of September; but in every other respect it was splendid. The noble specimens of palms, ferns, conifers, cacti, orchids, &c., &c., were the admiration of every lover of horticulture.

Roses were neither numerous nor fine, certainly not to be compared with those I have seen exhibited in France, more particularly at the Chateau des Fleurs. Two collections of well-known varieties, in small pots, were all that were shown. General collections of stove and greenhouse plants were numerous, but of course this was not the season to see them to advantage; among

those few were two or three excellent flowers, and one superlative, named *Toison d'Or*, which was considered by every amateur present to be one of the finest dahlias ever raised, being large, finely cupped, very symmetrical, high in centre, and colour golden orange or buff; it unanimously obtained the first prize, and I was informed it had been exhibited at several dahlia shows during the season, and always gained the principal prize; among the continental varieties for 1848, this will be the flower of the season. I must not forget some charming bouquets sent by Madame Vauriet, of Brussels; these consisted of an elegant "Bouquet de Noce," two beautiful "Bouquets de Bal," and three splendid large "Bouquets de Table," all arranged in exquisite taste.

I now come to the fruit rooms; here there were upwards of eighty exhibitors, among whom were the Duc de Brabante, Comte de Flandres, and Princess Charlotte. I had been led to expect a large collection of fruit; Flanders has the reputation of being *par excellence* the land of pears; in it have been raised more and better varieties than in all the rest of Europe put together; I was not disappointed, for certainly finer specimens, as regarded size and form, it would be difficult to produce. I have, it is true, seen both in England and France as fine single specimens, but here you meet them in almost every collection.

Among the vegetables were some very large collections; that of M. Simonis, of Liege, contained more than three hundred and twenty different varieties; in it were seven varieties of beet, fifteen of carrots, nine of celery, eight of endive, forty-seven of cabbages and broccoli, fifty-three of Haricot beans, twenty-four of lettuce, thirteen of turnips, nine of onions, thirty-two of peas, eight of radish, eight of tomatoes, &c. That of M. Galoppin consisted of one hundred different kinds of beans and peas. Mr. Vanderschriek had some very large cabbages, pumpkins, vegetable marrows, haricots, lettuces, and turnips; but in the collection of M. Rampelbergh, were some most beautiful specimens of broccoli, cabbages, carrots, endive, beans, cucumbers, and pumpkins; better it would have been difficult to meet with. Potatoes occupied a considerable space in the exhibition. The Society had offered one gold, two silver gilt, and two silver medals, for the best collections and for seedlings, and certainly there was no lack of competitors. As might be expected among so many collections, some were very even and good, and others mediocre. There might be seen varieties that had been cultivated in every kind of soil, and with all sorts of manure; in one place was the produce of sets received from South America, in another from the south of Europe, and in another from the most northern climates. In some collections it was indicated that they had been raised from diseased tubers; in others that sound tubers had been planted in land which had for the two previous seasons entirely failed; in fact, it was evident that a grand experiment had been tried to avert the danger of a national calamity. Several of the collections contained from twenty to seventy varieties, among which were numerous specimens of early white and red Kidney, early white and red round, Ash-leaved Kidney, early and late Irish Shropshire red, Shaw's red Antwerp, blue Saxony, Grosse Monstreuse de Mons, Rouge de Landen, long blue Dutch, spotted red and white Ghent, Rohan, Rose, Mousson, early and late Champion, blue Saint Helena, Rouge de Vosges, Corne de Vache, red Scotch, white and red Havannah, Howard, Nine Weeks, Ovale de Growland, Langue de Bœuf, late American red, and many others.—*Hovey's Magazine.*

Remedy for the Potatoe Rot.

In 1846, one of the editors of this paper planted potatoes on land manured with morocco tanner's manure, which contains a good deal of lime. The crop was healthy and good, while other fields in the vicinity were diseased. In considering what it was in the tanner's manure, that protected the potatoes from disease, he came to the conclusion that it was principally the lime. Accordingly, in the spring of 1847, after his potatoes were up and ready for the first hoeing, he put about a pint of shell lime—slacked—on each hill, having, previous to planting, ploughed in a moderate dressing of stable manure. The result was 200 bushels of the finest potatoes to the acre,—mealy and sound, on land naturally poor and sandy. They continue sound and good. We were about to state these facts for the benefit of others, when we met with the following in the American Agriculturist for January, 1848.

"When the seed is dropped, sprinkle about a pint of slacked lime over it in each hill, and then cover it.

"There is this value about the lime, if it does not prevent the rot in the potatoe, it will be worth its cost and the labour of application in fertilizing the land."

The mode of applying the lime, or rather the *time* of doing it, recommended by the Agriculturist, is different from ours, and may possibly be the best, though we are

not sure of it. We would prefer that the lime should not come in immediate contact with either the seed or vines. In addition to the remark of the Agriculturist as to the value of lime as a manure, even if it does not protect from disease, we would observe, that it is especially adapted to the potatoe, imparting to the tubers that ingredient which makes them mealy, and which is particularly needed on sandy soils. Potatoes of the first quality are now worth 75 cents and upwards per bushel, and will probably be a dollar in the spring. At these prices, they are the most profitable crop that can be raised. But if the application of lime is as efficacious as we suppose, and it should be generally adopted, the price would come down to nearly its former level.—*Exchange paper.*

Marshes, and their effects upon human Health.

It is well known that the effect of marshes on health is great and decided. In districts which abound in them, the inhabitants suffer not only from intermitting fevers, but from rheumatism and its kindred diseases. Their influences are not of that insidious character which some suppose, or at least the effects are always evident in the countenance and frame of the individuals. Emaciation, enlarged abdomen, feebleness, are some of the general effects which manifest themselves in persons who claim to enjoy health. But it is not necessary that these wet and marshy grounds should be extensive in order to exhibit a deleterious influence upon health; even ditches, stagnant pools, motionless water, each exhale matters which change healthy to unhealthy actions of the system. Puddles and pools, drains and sewers, operate most injuriously, and contain poisonous elements, which are exhaling so long as a particle remains to moisten the surface. Our country abounds in marshes. Some places which are now healthy and free from intermittents, were once abounding in them. The progress of agriculture has in many instances entirely banished this severe disease, and so as good husbandry extends a two-fold influence, beneficial in its character, is sure to follow healthfulness and wealth. Man never benefits himself in a legitimate way, without doubling his blessing, first receiving them into his own bosom, and then that of his neighbour. It is not however at all essential that a marsh or pool should exist, in order that poisonous vapor should be generated. Animal and vegetable matters in combination in deep mould, such as is found in the western prairie, is sufficient to generate a pestilence when exposed to the sun beams, and when moistened merely with dew, is sufficient in itself to form the miasm and float it in the atmosphere. Turf new ploughed, or turned over, especially if the areas are large, turns a country before healthy, into a region of sickness. From researches which have been instituted by Thenard and Dupuytren, Moscati, and by M. Regaud d l' Isle, the miasmatic exhalations have been found to contain animal matter, and hence it is probable that it is really composed of both animal and vegetable matter. It has been shown by Vauquelin, that the exhalations from the Pontine marshes, afforded animal matter in a putrescent state. In the foregoing instances however, this matter was obtained from the water or soil, but Boussingault succeeded in obtaining it from the atmosphere over the great southern American marshes, a fact which goes to show that the poisonous effluvia is exhaled in a tangible state. These poisonous gasses contain in addition to animal matter, light carburetted hydrogen, azote and carbonic acid, and sulphuretted hydrogen, and sometimes a trace of phosphuretted hydrogen. By vaporization of dew in the rains upon our western prairies, and the water of marshes, these organic and poisonous effluvias are disseminated in the atmosphere, and are wafted by the breeze over wide areas.

An interesting and important fact may be stated in this place, viz: that age influences or modifies the effects of marsh miasm. Infants or children under two, are less affected than those of three or four years. This may arise from the greater exposure of the latter. So old persons are less affected than those of middle age, or who are engaged in artisan pursuits. Children when attacked with disease, fall victims to its influence more easily than adults; their mortality is greater in the proportion of 1000 to 1546, and it has been observed that fewer deaths occur in infants below one year, than in those of three or four years; after ten years the influence of marshes is less to be feared, and the capability to resist marsh miasm increases up to twenty-five years, from twenty-five to fifty-five the susceptibility again increases, though it is never so great as in children between the ages of two and ten years. Old persons, as already stated, are more exempt from marsh influence. Food and exposure furnish conditions which favour its influence. Bad and ill-conditioned food, night air, especially when heavy dews are formed, favour very strongly miasmatic disease. When ill-clothed and ill-fed troops are forced to march by night in a marshy

country, it may be expected their ranks will be decimated. The emigrants from New England to the rich western prairies, or to the rich bottom lands of the western rivers, may expect disease and death; provided they plough up those prairies or bottoms, and thereby expose themselves to exhalations from a surface charged with animal and vegetable matter. These are calamities which the first settlers can scarcely expect to escape; circumstances may delay the development of diseases, when a favourable season may occur, but they seem to be inevitable in the end.

From observation, it appears that disease will be in proportion to the concentration or amount of miasm to which an individual may have been exposed. Hence precautionary measures will not be useless. A residence by the side of a marsh or upon a prairie where the turf has been newly turned up, should be closed upon that side towards the miasmatic grounds, when the wind blows from them. So the night air should be avoided, especially after hot and sultry days, when much dew will be formed, or rather where much exhalation will take place when the miasm will be concentrated in it at night fall. So it is important that the vigor of the system should be promoted, and that during the period when there is greater exposure to poison, the different vegetable tonics should be employed, as quinine, which is the most powerful, or for want of this, pulverised bitter barks, or infusions of them, as the eupatorium, boneset, &c. Such a plan would at least mitigate the effects of the effluvia.

Great fatigue, hard labour, favour also the influence of marsh poison. Closing windows, keeping within doors, avoiding dews, moderate labours, and a tonic regimen, may be set down as some of the preventives to the influence of the poisonous exhalations of marshes.—*American Journal of Agriculture and Science.*

Profits of Farming.

Messrs. Editors,—I have been much interested with various papers that have appeared from time to time in the Cultivator, on the profits of farming; but in my opinion, some of the writers have taken a wrong view of the subject—making the profits of farming to resolve itself into a mere question of dollars and cents; than which, nothing can be more foreign to the object, or less satisfactory to the reflecting mind. But, as example teaches before precept, here are the reflections of a man, an adjoining neighbour, who two years ago left a lucrative business in Philadelphia, and bought the farm upon which he now resides, for the sole purpose of making a *profit*, and in which he has succeeded beyond his hope, and equal to his most ardent desire.

To the question, whether he did not find the profits of farming few and small, when compared with those of trade! he answered, "Quite to the contrary; I have already realized far more than the most I had dared to contemplate, and am, at the end of two years, richer than I ever could have become in twenty years of successful trade. It is true, I made more dollars and cents in trade than I now do, but that is *dross*, when compared to the blessings of health of body and peace of mind, which gold and silver can never purchase. Do you remember what a heavy, paunchy fellow I came among you? See me now leap this gate—there; why the attempt would then have burst me up! And the best article I could take to the city for sale, would be my appetite at 12 o'clock dinner; at which, the bacon and cabbage require no topping off, with either *pie* or *pudding*. You remember when I was as broad as long; I am now as proportionate as yourself; eat, drink and sleep, with an appetite; yawn at bedtime, and never in the morning; am up before the sun, yet the day is never too long: and more than all, *I have no acceptances to take up.* Money! why what use have I for it? I grow my own bread and meat, poultry and eggs, honey, milk, cream and cheese, with vegetables and fruits of every kind, and in the greatest abundance; feathers for my beds, wool for my stockings, blankets and common clothing; lard for my lamps, candles and soap, and straw for my hats; enjoying the luxury of my dog and gun, a carriage and pair for myself and family, with house-rent and fuel free! At the same time, by good management, my estate is annually increasing in value; while my property—no longer consigned upon trust to the four winds—is secured on the surest foundation; surrounding my dwelling, and under my own eye. Then, what on earth is the use of money? I can't eat or drink it, even if it were cut into mince meat. It is not only the "root of all evil," but the source of disease of body and anxiety of mind, inseparable. So I, for one, am content with the profits of farming; for the fact is, it leaves me scarce anything to *wish* for, much less, to *care* for."—*Boston Cultivator.*

It is not known where he who invented the plough was born, or where he died; yet he has effected more for the happiness of man than the whole race of conquerors.—*Cotton.*

From the Cultivator.

Bees.

A knowledge of facts constitute science. Correct observation alone, can lead to a knowledge of any science; from such knowledge only, will correct practice result.

The honey bee has been a prolific theme for guessing, among ancients as well as moderns. Numerous contradictory theories are advanced, extremely perplexing to the inexperienced apiarian, some of which must be refuted or reconciled by attentive observation, before uniform success can be expected. To refute some of these incorrect theories by a relation of facts, is the object of this communication.

That my observation may not appear too limited, I will say that I have had the care of bees for more than twenty years; and since 1840, of over one hundred hives.

In my experience, whenever I have discovered any dead larvæ, however few, they have never failed to increase and ruin the hive. When I first had diseased bees, I pruned out all the brood comb, leaving such only as contained honey. The bees made new and filled it with brood, which invariably became diseased. This suggested the idea of its being a contagious disease, and that the *honey* in such hive contained the poison. I have accordingly taken such honey and fed it to healthy young swarms, while raising young brood, as many as a dozen times, and never knew an instance where they escaped the contagion.

Three years ago in March, I had a good swarm leave the hive and go in with another good one; and as there was a plenty of honey, I expected an early swarm, but got none at all. They gradually diminished till the last of June, when not more than half a swarm remained, and upon examination, I found the comb filled with larvæ, nine-tenths of which were dead. In 1840, I had two large swarms come out together, which were put into a barrel, and in the fall they were diseased. Several young swarms shared the same fate. The strongest are just as likely to become diseased, as the weakest colonies.

I have not escaped a year in fifteen without having several hives to suffer before swarming, and last year no worse than others. When swarming time arrives, and I have any that have not increased as usual, on examination, I generally find diseased bees, and as my only remedy, drive them out, satisfied that they will grow worse after catching the distemper. So well assured am I of this fact, that I make two general examinations. About three weeks after the first swarm has left a hive, the young that are alive are generally hatched. If I find any of the breeding cells closed,—which is always the case with dead larvæ,—I open them with the point of a knife, and if dead give the bees a new habitation at once. Again, in the fall, every hive is looked to, and a half dozen diseased larvæ condemns it at once, for a stock hive. I will give any person twenty-five dollars, who will give me an unfailing preventive or remedy for this disease; and I can well afford to do so, as I lose yearly by it twice that sum.

I have objections to some theories offered by Mr. Weeks, but before I state them, I must say that I am greatly indebted to him for information through the Cultivator, on the subject of bees. I would not exchange what I have learned for all the paper has ever cost me. But error, from any source, ought to be corrected. First, then, he says: "two causes, and two only can be assigned why bees ever swarm; the first, the crowded state of the hive; the second, to avoid the battle of the queens." I object to the first, because it is insufficient in all cases to make them swarm, and swarms do actually come out independent of either of these causes. I do not say bees being crowded will not sometimes bring out swarms, but some other cause must exist in such instances as the following. I have known all the bees to swarm from a hive, when a pint measure would contain the whole of them. Ten years ago, I had bees in a large box; before it was a quarter full, a regular swarm left. Last spring, to give the principle a fair test, I placed under five full hives of ordinary size, others of equal dimensions, without a top, so that the bees could continue their combs to the bottom if they choose, but not one has done so; each has swarmed without filling the lower hive an eighth part full. Want of room could not be the cause here, nor could they have swarmed to avoid the battle of the queens, for I have good reason to believe that the old queen led each swarm.

I have known bees so crowded that a great portion of them were obliged to remain out all summer, and yet they did not swarm at all. I have known swarms come out and return two or three times, and then continue in the old hive all summer, notwithstanding the young bees continued to hatch and increase the crowd in the hive. The fact is, no single theory will account for all swarms. I have noticed, however, that all regular swarms must be in a season when there is plenty of honey, and this is generally between the middle of May and the middle of July. We often have swarms in this section in August, between the 15th

and 25th, when the bees are at work on buckwheat. At such times all good swarms will raise a brood of drones, whether the queen be young or old. Although this contradicts the theory that the queen must be at least eleven months old before they lay eggs for the drones, it is certain they will raise them at any time when they get plenty of honey, and as it gets scarce they will destroy them—consequently the last of July is a time of massacre. In the summer of '42, they killed them the fore part of June, and we got no swarms, but the hives were crowded with bees. I never had a swarm when they were destroying the drones.

Mr. Weeks says—"when the first swarm leaves the hive, no queen, in any stage of existence, is left." But I have examined hives the same day that the first swarms left, and found cells finished containing queens. This has been the case in four hives out of five. I have driven out a swarm after several days of bad weather, and found queens' cells finished. Four hours of sunshine in the middle of the day, would probably have brought out the swarm. While examining a glass hive, during the past summer, I saw the bees constructing a royal cell. I watched it for more than a week. When finished I predicted a swarm, —although none were crowded outside for want of room. The very day I expected them, they came out. In eleven days after, a second swarm came out. Previous to the last leaving, I had the satisfaction of seeing a young queen several times while making the piping noise, such as we can always hear just before the coming out of all swarms excepting the first of the season. She appeared very uneasy, running about in all directions, only stopping to vibrate her wings against her body, which was done simultaneously with the sound. This proves that queens sometimes make the noise when they are not in the cells. The other bees made no attack upon her, as some writers have stated they will do in such cases.

The supposition that all hives are left destitute of a queen when the first swarm leaves, has led to error in practice. Mr. Colton, of course, thinks, that young queens are unnecessary to produce swarms, as it is said his hive can be made to swarm within two days, at any time. Mr. Jones' dividing hive is on the same principle. I had supposed it was an established fact, that if a swarm was driven out with the old queen, leaving plenty of bees and young brood in the comb, queens might be raised as well as if they had swarmed, but I was mistaken. I tried three at first—not one swarmed. The only way in which I have ever succeeded in making them raise a queen from workers' eggs or larvæ, is to give them but a small piece, and then twelve days is as soon as they can perfect one. When I have occasion to take out a swarm and leave bees in the old hive, I find I must be very cautious, especially if it is not in swarming season. If I can see no preparation for a queen, I generally supply them with one in the cell. If any one doubts there being any young queens commenced at the time the old one leaves, they can be satisfied that they are so,—at least sometimes,—by the following mode of examination. The evening after a swarm has left, or the next morning, blow some tobacco smoke into the hive to stupify the bees; turn the hive bottom upwards, puff some smoke between the combs; the bees will retreat and give an opportunity to examine the combs, to the distance of six or eight inches into the hive. In many hives there will be some sheets of comb that do not extend across the whole way, making an edge somewhere near the middle. On this edge is generally placed the royal cells. Sometimes they are on the outside, next the hive, and often on the bottom. Look through the hive, giving the bees a puff of smoke occasionally, to keep them quiet. It is very seldom the queen cells are so near the top as not to be seen. I counted nine the past summer, in one hive, within two inches of the bottom. Some were sealed over, others not more than half done. This was the next morning after a swarm had left.

Another point in dispute, is whether the queen ever leaves the hive, excepting when leading a swarm. I have seen them do so often, in all instances between one and three o'clock, P. M., at which time more drones are out than at any other. She always came from a hive that a first swarm had left some fifteen or twenty days previous; consequently they were young queens.

Mrs. Griffith, of New Jersey, I think, has watched for this, and felt confident that no such occurrence ever took place, and she has added as an objection, that as the prosperity of the hive depended on one bee, and that one should leave for an excursion in the air, it would be liable to be devoured by birds, driven off by winds, or destroyed by other casualties, by which the hive would be lost. Now, just such cases do actually occur. The queen at this period, from some cause, is occasionally lost—one in twenty, on an average,—and with me, this year, one in ten. The apiarian who cannot ascertain this loss, does not understand his whole business, and as there are many who do not, I will say that if they would take the trouble to look at their hives for a minute in the

morning, before the bees commence work, about fifteen or twenty days after swarming, they could, by the commotion of the bees, ascertain the loss of the queen. They will see the bees running about in all directions, while in other hives they are quiet. In the middle of the day it is not so easily perceived. After two or three mornings they seem to become reconciled to their fate, and continue their labours as others do. I noticed this in one of my hives before I had half a dozen, and occasionally ever since. The result generally has been, that before cold weather, or very soon after, the bees would all be gone, and yet the hives nearly as heavy as others.

Now, when I have a case of this kind, and I have had a swarm within a week, I proceed to look for queen's cells, and with a broad knife I cut out one or more—as they generally have several I have no fears of leaving them destitute,—and introdnce it in a vertical position into the hive that has sustained the loss. In a short time all will be quiet. I have often put it in through a hole in the top of the hive, taking care that the lower end shall touch nothing. If more than a week has passed after a swarm has left a hive, it is unnecessary to look in that for a spare queen, for they are generally all destroyed by that time, unless they intend to swarm again, which can be ascertained about the eighth day, by listening close to the hive for the piping noise.

Second and third swarms often have several queens—I once had six in one swarm. When necessary, I take one of these and put it in the hive—even if there is but one, I take it and let the swarm go back; which is often an advantage, besides giving the old hives a queen. But if no queen can be had in any way, a piece of brood comb containing eggs or larvæ of workers must be introduced, but this is more uncertain to produce a queen. If all these circumstances were duly attended to, we should have less complaint of hives being found destitute of bees and full of honey—or as is often the case, full of worms. Such instances often occur with negligent bee-keepers, when they supposed the bees were doing well.

Some suppose that bee-bread is changed to honey. I wish the time necessary to effect the change was stated. I have had it two years old, or more, and it was still bee-bread. I have "lots" of it every year when I am making wax. I have put it on my garden, but can see no great effect from it as manure, and should like to turn it to some better account. There is no doubt that the bees collect the pollen or bread for food for their young. One circumstance in particular confirms me in this belief. When a hive loses its queen, and is not supplied with one, there is of course no brood, but if there is plenty of bees, nearly every cell will be two-thirds full of bread, and finished out with honey and sealed over. The comb looks very well outside, but it is disagreeable to eat in this condition, and it is impossible to separate all the honey from it, and I have never been able to get out all the wax.

I have had two or three young swarms lose their queen a few days after being hived, and they filled the hive nearly full of what appeared to be very nice honey; but a person taking it for such would be greatly mistaken—it is as much bitter as sweet.

Other theories have been advanced which are contrary to my experience, but the objections would lead to little practical utility, and I shall say nothing of them here. I did intend to have said something on economy in the construction of bee-hives, but have not room.

M. Quinby.

Coxsackie, N Y., 1847.

From the N. Y. Agricultural Transactions.

Preparation of Sandy and Light Soils for Wheat.

B. P. Johnson, Esq., Sec., &c.:

As these are truly the days of improvement in the various sciences, it is somewhat surprising that agriculture should be so far in the back ground. There are some encouraging appearances, and inquiry begins to pervade the public mind, to see if their cannot be some improvement in this all-important branch of public industry also. I would therefore offer my mite to my brother farmers, on the preparation of fallows for wheat.

Some nine or ten years since, I adopted a new method of preparing fallows for wheat, which was *one ploughing*—and this I follow whether I plough in June, July, or August. I apply the cultivator as often as necessary, to prevent any vegetation from growing, and the land is thus kept perfectly clean for the seed. Should the land be quite hard it makes no difference, but is all the better, if you can obtain sufficient loose soil to cover the seed.

When I first commenced this mode of farming my neighbours laughed at the idea of obtaining a crop in this way. In the course, however, of two or three years, they became convinced, by observing that I raised the best wheat, according to the quality of the soil, and I am happy to say, that very many in this region, have adopted the same plan, and I do not know of one who has had

occasion to regret it, for in every instance that has come to my knowledge, it has succeeded well. My land is what may be called coarse sand and gravel, sandy loam, and some rather stiff sand. Whether the same practice would answer on a hard and clayey soil or not, I cannot tell.

I sow my wheat generally between the 10th and 25th of September. When the wheat is sown the cultivator is passed over the land but once, which covers the wheat better than two or three times with the harrow. By the above plan, about one-half the usual labour on fallows is saved, and a more bountiful crop may be anticipated, than from the former method of ploughing three times, and using the harrow two or three times. It is a well known fact, that a stiff, hard clay soil, provided the ground had been well prepared, will grow more wheat to the acre than can be grown on a sandy or loamy soil. Now the question is, why is this so? To me it is obvious, the wheat plant grows most luxuriant on a hard soil, and that is the reason that one ploughing on these sandy soils, is preferable to three, and that land thus prepared will produce more wheat to the acre. The one ploughing leaves the ground hard compared with three ploughings, which, in these soils, leave the land loose, open and spongy, unsuited to the plant. This has been tested often in this neighbourhood within the last few years.

The practice which I have adopted, is confirmed by a statement given by Henry Colman, Esq., in his account of the culture of wheat in England. He says: "The soil preferred for wheat is a strong soil, with a large proportion of clay; but experience has of late years, contrary to early and strong prejudices, determined that even the light and loamy soils are capable of bearing heavy crops of wheat, provided they can be sufficiently consolidated. This is often done by driving sheep over the land after sowing, and by an implement called a *presser*."

"This implement passes over the land in the direction of the furrow, and it forms on the furrows two deep drills at a time, the two rollers being eight or nine inches apart, and the blade of the roller, if it may so be called, or the rim being thin at the edge, and growing wider above the edge; and forming as it revolves, two furrows, hardened by its weight, into which the grain drops as it is sown; and when it comes up, it appears as if it had been regularly sown in drills of eight or nine inches apart, according to the width of the revolving pressers from each other." "The steam-presser is in fact an abstract of a drill roller, consisting of but two cylinders of cast iron, which following the plough in the furrows, press and roll down the newly turned-up earth."

"I believe the soil for wheat cannot be too deep; though, as I have already stated, it may be too loose at the top, and in such cases, requires shallow ploughing and treading, or pressing on very light soils, in order that the roots may be firmly fixed in the soil, and the dirt not liable to be blown away from them."

I use a two horse cultivator for putting in all seeds, such as wheat, rye, oats, barley, and best of all for peas. This covers about six feet at a time. I use a smaller one for corn, having given up entirely the use of the plough. I have given above my views with regard to the proper management of sandy and light soils for wheat; and if it shall prove advantageous to the farmers of New York, I shall be satisfied.

Yours respectfully,

ELIAS COST.

Oaks Corners, Ontario co., March, 1847.

Peruvian Industry.

THOSE who may distrust the accounts of Peruvian industry, may find their doubts removed on a visit to that country. The traveller still meets, especially in the central regions of table land, with memorials of the past, remains of temples, palaces, fortresses, terraced mountains, great military roads, aqueducts, and other public works, which, whatever degree of science they may display in their execution, astonish him by their number, the massive character of the materials, and the grandeur of the design. Among them, perhaps, the most remarkable are the great roads, the broken remains of which are still in sufficient preservation to attest their former magnificence. There were many of these roads traversing different parts of the kingdom; but the most considerable were the two which extended from Quito to Cuzco, and again diverging from the capitol, continued in a southern direction towards Chili. One of these roads passed over the grand plateau, and the other along the lowlands on the borders of the ocean. The former was much the more difficult achievement, from the character of the country. It was conducted over pathless sierras buried in snow; galleries were cut for leagues through the living rock; rivers were crossed by means of bridges that swung suspended in the air; precipices were scaled by stairways hewn out of the native bed; ravines of hideous depth were filled up with solid masonry; in short, all the difficulties that beset a wild and mountainous region, and which might appal the

most courageous engineer of modern times, were encountered and successfully overcome. The length of the road, of which scattered fragments only remain, is variously estimated from fifteen hundred to two thousand miles; and stone pillars, in the manner of European mile stones, were erected at stated intervals of somewhat more than a league all along the route. Its breadth scarcely exceeded twenty feet. It was built of heavy flags of freestone, and in some parts, at least, covered with a bituminous cement, which time has made harder than the stone itself. In some places, where the ravines had been filled up with masonry, the mountain torrents, wearing on it for ages, have gradually eaten a way through the base, and left the superincumbent mass —such is the cohesion of the materials— still spanning the valley like an arch!—*Prescott's History of Peru.*

Keep Animals in good Order.

It is an old saying, that animals in good condition in December, are half wintered. This is no doubt true, they not only require much less keep during the winter months, but are far more profitable for labour or for whatever purpose they are kept. Cows, oxen, steers, sheep, horses—in fact, all animals, as soon as the food becomes short or insipid, should be fed regularly from the barn. It is often the case that animals that have had the advantage of what is considered a "good run" during the summer months, upon the decrease of food in autumn, suddenly fall away, become poor and dispirited, and require regular feeding to preserve them in health and heart. A little attention, under such circumstances, will often be the means of obviating much trouble and expense. By exposure to the winds and chilly storms of the late autumn, there is often laid the foundation of wasting and cureless disease; debility and languor, loss of appetite, and inaptitude to fatten, by this means often induced, occasioning suffering to the animals and loss to the owner, who is not unfrequently ignorant of the true cause, and at a loss to conceive why *his* animals are not in as good a condition and health, and as thrifty and well-looking as his more careful neighbour's, who provides both food and shelter for his stock, and is careful to see that no circumstance requisite to their comfort is neglected or overlooked.

There is probably no animal more generally and shamefully neglected in this climate than the sheep. The presumption that they are capacitated to endure extreme cold without any obvious or serious detriment, is an error that cannot be too speedily corrected. No animal is more severely affected by cold storms and exposure, or more capable, consequently, of rewarding amply an extra expenditure in the provision of secure shelter and good keep. The old adage, "A merciful man is merciful to his beast," is one that we wish to see more generally recognized and applied.—*Olive Branch.*

Heated Rooms.

Rooms heated with anthracite coal, and rooms heated with close stoves, in which wood is burnt, have very dry atmospheres. The use of water in such rooms is very congenial to health, but the water should not be placed in an iron or tin vessel upon the stove, for the reason that it will undergo that degree of heat which will make its vapors offensive and injurious to breathe. It is as injurious to the human system to breathe putrid water vapors of this kind, as it is to breathe the vapors from stagnant ponds in hot weather. If water is used upon a stove, an iron pan should be made use of, and this filled with dry sand; in the sand set an earthen bowl, filled with clean water, which should be changed twice a day, and the bowl washed and kept as clean as if used for a drinking vessel.

Where hard coal is burnt in a grate, a glass globe should be suspended in the room, filled with clean pure water, and as the heated air rises to the top of the room, it will steadily evaporate the water and moisten the dry and heated air. Persons who prefer the atmosphere of salt water vapor, can add salt to the water, or, if they prefer an aromatic atmosphere, they can add cologne water, or any other perfume which they prefer. It is as important to have clean air for breathing, as to have clean water for drinking. Basement rooms, where hard coal is burnt, should be frequently ventilated. Small children accustomed to stay in basement rooms, find a bad air near the floor. The air should be removed by allowing the doors to be opened frequently, to let in fresh air. A little care in these matters will tend wonderfully to comfort and enjoyment.—*Ex. Paper.*

The Potatoe.

The Morris Jerseyman says: For a few years past public attention has been directed to the cause of the potatoe rot, as also the remedy, but nothing satisfactory has been elicited. One of our farmers, a few days since informed us, while in conversation on that subject, that he planted his potatoes earlier this season than usual, and that he

dug and put in his cellar some 30 or 40 bushels before the rains came on. These are still perfectly sound, while those which remained in the ground during the recent heavy rains are utterly worthless. To the autumn rains many have attributed this *rot*, and consequently they put their crops in very early, to enable them to arrive at maturity before the rains commenced. The experiment mentioned below may be considered of some consequence, as we have seen it satisfactorily tried. A lady from Mississippi spent the past season with her friends in our town. The all-engrossing subject of the *potatoe rot* was on the tapis, when she observed that in that region many of the planters had been experimenting on that vegetable, and the best result was from transplanting the slips into rows, similar to the method of cultivating the Carolina potatoe. Her friends tried the experiment, and finer potatoes we have not seen or eaten for many years. The potatoe is planted early in a hot-bed, and the slips when about three inches in length, are taken off and transplanted some eight or fifteen inches distant. The original will continue to send forth shoots for a long time.

Rules for Milking.

A WRITER in the Maine Farmer gives the following rules for milking cows: "Having milked more or less, every season since I was a boy, and having seen it done so poorly as to injure the cow, I purpose to give a few rules for it which I have learned from my own and other's experience. They are as follows:

1. Have a good stool to sit on.

2. Have all your finger nails pared short and smooth.

3. Sit down and clean the bag, and wet the teats with the first stream of milk.

4. Then set your pail under, and milk as fast as you can conveniently—the faster the better. A cow will give more milk when milked fast than when milked slow.

5. Milk as though the teats were full to the last, otherwise it makes them long to "strip in a little while."

6. Never scold or strike a cow for running about the yard or kicking. It generally does more harm than good.

7. If she runs about, have patience, talk kindly to her, and tie her up as a last resort, till she is not afraid.

8. If she kicks, sit forward far enough for your knee to come forward of her leg, and she cannot easily hurt you or spill the milk.

9. If she switches you with her tail, in "fly time," fasten it by parting her hair and tying it around her leg. Use a string, if the hair is not long enough.

10. If she holds up her milk, butt with your hands. What else does a calf butt for, but to make the mother give milk down?

For the Farmers' Cabinet.

Culture of the Plum.

THERE are few things in the horticultural line that has surprised us more than the small quantity of fine plums cultivated in the vicinity of Philadelphia. It is true the *curculio* is a most persevering enemy to the plum—but this enemy is found more or less everywhere, even up the North river country, where thousands of bushels of the finest quality of plums are produced for the New York market.

What the plum most requires is a soil of heavy loam—if there is a large portion of clay, so much the better—for it is a fact well known that near Albany and Hudson, where more new fine varieties have been produced within a few years, than all other parts of the country—the soil is nearly a stiff clay. It would seem from the above that where the soil is sandy, or very mellow and porous, a good load of clay should be mixed with the soil about each tree. Swamp muck also, where it is difficult to procure clay, will answer an excellent purpose.

A great variety of measures have been tried to prevent the ravages of the *curculio*. We will now name some of the most successful. Salt has been used with the utmost success. Mr. Downing, in his admirable work, the "Fruits and Fruit Trees of America," states that the most successful cultivator of the plum in the neighbourhood of Newburg, applies half a peck of coarse salt to the surface of the ground under each bearing tree, annually, about the first of April. There is no doubt but salt is a most excellent fertiliser, and greatly promotes the growth of the tree. It is beneficial to most productions of the earth, and why not to the plum tree?

A good plan, according to Mr. Downing, is to strew salt under the limbs of the tree about a qarter of an inch in thickness, when the punctured plums begin to fall. Should there be heavy rains, the salt must be replaced. A correspondent of the Horticulturist last season, raised an uncommonly fine crop of plums from having strewed under his trees a quantity of long horse manure—he supposes the ammonia that rose from the manure was so powerful as to drive off the curculio. Another method is to turn in a sufficient number of hogs to eat up all the diseased fruit as it falls to the ground.

In some sections of the country the *black knots* are nearly as troublesome as the curculio. For this disease there is one simple and effectual remedy, and that is, whenever the knots are discovered, to cut off all the limbs so diseased, and immediately burn them. Sometimes it will be necessary to look over the trees two or three times in a year.

To show that plums can be and are raised in our own State, by those who choose to do so, we will mention a few facts within our own knowledge. Jacob Steinmetz, in Coates street, has a tree of the Blue Gage variety, that has produced ten bushels of fruit in a season. James Laws, in Seventh street below Noble street, has a Bolmar Washington tree, that has produced more than five bushels in a season—five of the plums weigh a pound, and the crop would in market command sixty dollars. In our next we propose giving a descriptive list of the thirty finest varieties of plums in the country.

B. G. Boswell.

Philadelphia, Dec. 29th, 1847.

The Scuppernong Grape.

This grape is destined without doubt to take a high rank as a fruit—and when the culture and the season are propitious, and the art of managing the fermentation is fully understood, a wine resembling the wines of the Rhine will be produced of excellent quality. The culture of this vine is simple, but it must always be recollected that it does best in rich dry loam. The growth is rapid after the first year, and will produce a fair crop the third year, if properly treated. The distance at which the vines should be planted, as standards, depends upon the object the planter has in view; if for shade and fruit, then twenty feet each way, but if for wine, and are intended to last for many years, then forty feet is the shortest distance. Arbours are, I think, best, because if the grape is exposed to the full rays of the sun it becomes hard and the skin is thick and tough. Trellis training exposes the fruit more to the sun, and causes maturity earlier than arbour training, and perhaps admits of pruning more easily—but all things considered, I give the preference to arbour training.

The old cultivators of this vine insist that pruning is not required, and that it is hurtful to the vines. I have not found it so—and when the vine is four years old I prune moderately every year. I whitewash my vines in the month of April, and cut into small parts the pruned wood and lay it about the roots of the vines. The fruit is larger and better when the vine is pruned, and I venture to say that it will be found, where wine is the object of the cultivator, that all the rules known for pruning will be observed on this vine as strict as any other.

I am very particular to lay out my ground so that no water stands about the vines.

The manure I use under my vines, when planted as standards, is composed of old bones, old shoes, old hats, old hoop-iron, and anything else of that class. Excavations being made, say twelve inches deep, are to be filled up to within an inch or two of the surface, and then planted, the roots of the vine being spread out and then covered one or two inches deep, and then train them up and never suffer them to fall to the ground. The training of the vine is all important upon the arbour, for if suffered to run together, it will, by means of its tendrils, mat together and produce but little fruit.

It should be trained with great care and the main branches spread upon the arbour, and tied down so firmly that the wind cannot move them.—*Alabama Planter.*

Yellows in the Peach.

For many years the peach tree has been subject to a disease known as the yellows. This disease seldom makes its appearance before the tree has arrived at maturity, as its great vigor and rapid growth appear to preclude the developement of the disease previous to the tree fruiting. Much time, labour, and research have been spent in fruitless endeavours to eradicate this disease after it has made its appearance in orchards, and the only result arrived at is the necessity for replanting new trees, to take the place of the old ones at short intervals of time. Many applications to trees have been recommended, and potash, lime, tobacco, banking up trees in winter, &c., have had their advocates. Although individual cures may have been effected, or decay for a time arrested by the remedies, yet such instances are extremely rare; and when applied on a large scale are shown to be without value. The disease, a true consumption, still continues, and will continue, unless some radical method is adopted to eradicate it. From my own observation and experience, I am led to the belief, that this formidable disease has been much aggravated and spread throughout the country by budding from trees containing in themselves the seeds of incipient consumption, not yet externally developed. A bud may be taken from a tree apparently sound, but after a time both trees will be affected and decay, and so on *ad infinitum*. The only remedy appears to be to bud from trees which are known to be

entirely sound, and in which no disease has appeared for several generations. By taking this precaution, growers may rely upon having trees, that with ordinary care, will live and bear fruit for many years, and in time eradicate this evil. That the disease, however it may have originated, has not its origin in either the soil or the climate of this latitude, is pretty evident. Natural trees can now be found in great numbers, of many years growth, alongside fences and other neglected situations, perfectly sound, and likely to remain so. These are the trees to propagate from; and although the fruit is generally of an inferior quality, yet a cultivation of a few years will render it of superior flavor.—*Farmer and Mechanic.*

Report of the Barnstable County Agricultural Society.

REPORT OF THE COMMITTEE ON FARMS.

In the performance of their duties, the committee have travelled nearly from one extreme of the county to the other, to examine into the present condition of its agriculture, and note the improvements which have been adopted in the management of farms, and in the cultivation of particular crops. Though the inhabitants of the county are, as a whole, a commercial people, the committee observed in all the towns the evidences of an increased interest in rural employments. The old system of planting exhausting crops for successive years, and till the diminished products do not repay the labours of the husbandman, now finds few advocates among the observing and the intelligent. Very few now plant more land than they can manure and lay down to grass in better condition than it was when broken up. More attention is paid to the collecting of materials and the making of compost manures; to the kinds of crops which are to succeed each other; to the reclaiming of swamps and boggy lands and meadows; and to the cultivation of trees and shrubbery for use and ornament. The effects of these improvements are visible in all our towns, in the appearance of the pastures and meadows; of the crops; of the enclosures, and of the grounds about the buildings.

The attention of the people has been generally directed to the utility of planting forest trees on the sandy beaches and commons in this county. Forest trees improve the soil on which they grow, and are a source of profit for timber and fuel; but their greatest use is the protection which they afford to the cultivated fields against the winds from the ocean, which stint and blast vegetation exposed to their unbroken violence.

The high price of corn last year induced the farmers in this county to extend its cultivation, and more land was planted with corn than in any one year for a long time past, probably more than was ever planted. The crop is not so good as last year. Many complain that the ears are not well filled; but on rich, well manured and well cultivated lands the yield proves abundant. The potatoe crop is almost a total failure. The rot prevails in all the towns, and the committee have scarcely met with one who did not complain of his loss. Nearly all the instances in which potatoes have not suffered by the disease, are where dry sea weed was used for a manure. Little fruit has been raised this year. The trees have suffered from the depredations of worms and insects, some of which have been unknown in this county till within a few years.

The committee cannot, in this report, refer to all who have made "valuable and economical improvements in the cultivation and management of their farms and appendages." The following, among others, the committee conceive to be deserving of particular notice.

Thomas Lathrop, Esq., has accomplished a task which men of ordinary enterprise and industry would have considered impracticable or visionary. He has rendered fields, taken up in the low lands, among the barren sands of Provincetown, fertile in the production of corn, grass and vegetables.

John Doane, Esq., of Orleans, has by skilful management, rendered his farm five times as productive of grain and grass, as it was when he purchased it twenty-seven years ago. The soil was then exhausted, and most of it was thrown out to commons. The soil is generally light and sandy, and he has renovated it by carting and ploughing in sea weed, and by making compost manures in his barn-yard. The principal material used by him is sea weed.

Mr. Simeon Higgins, of Orleans, has also greatly improved his lands. He has made nineteen acres very productive, which a few years ago were barren and of little value. These changes he has effected by stable manures and composts.

The largest farms visited by the committee were those of Mr. Lewis Doane and Mr. Beriah Doane, situate in the east part of Orleans.

Mr. Lewis Doane's farm contains about 130 acres of arable land. The soil is naturally good and easily cultivated. He has clay, loam and sandy soils. His average annual crops for several years have been 500 bushels of corn, and 250 of rye, wheat and barley, besides potatoes, carrots, &c.

He pastures from 25 to 30 head of cattle, 50 sheep and three horses. The hay which he cuts is consumed on the farm, and he depends mainly on sea weed for manuring his lands.

Mr. Beriah Doane's farm contains about 230 acres of arable land. The soil is mostly clay and gravelly, and is naturally rich and productive. He pastures about 30 head of cattle, 50 sheep and four horses, and raises annually an average crop of 750 bushels of grain.

Mr. Charles Sears, of Yarmouth, paid $350 for his farm adjoining his homestead in 1832, and it was then thought that he paid its full value. It contains about thirty acres, and its annual productions at that time were, pasturage for two cows and 25 bushels of grain. Now, the same land produces annually, pasturage for three cows, ten tons of English hay, 200 bushels of grain, 100 bushels of potatoes and other vegetables. Most of the land is sandy—a small portion sandy loam and peat. On a part of the peat land which he has reclaimed, he cut, this year, at the first mowing, hay at the rate of four tons per acre. He has a field of four acres planted with corn, which will yield at least 40 bushels to the acre.

Mr. Sears, besides the manure from his stables, composts two or three hundred loads of manure annually from sea weed, marsh and fresh pond mud and other substances.

Only two farms were entered for premiums, and they were visited in July and October by the committee.

Mr. James H. Knowles' farm, in Eastham, contains nineteen acres of arable land, of easy cultivation. The soil is mostly a sandy loam, rich and deep and abounding in shells. Mr. Knowles is an intelligent and skilful farmer, and turns everything on his premises to some good account. His buildings and fences are substantial and neat. He has what no good farmer should be without, a cellar under his barn, open on the side next to his large barn-yard. He has made about 400 loads—of 25 bushels each—of manure the present year. He carts peat, sea weed, loam, muscles, and salt mud into his barn-yard. His cattle are yarded every night, and their droppings and the manure from his stable are intimately mixed with the materials carted in.

Mr. Knowles has pastured on his farm the present year, fourteen head of cattle, two horses and one colt, and cut ten tons of English hay. He planted two and a half acres to corn, the estimated product of which is 40 bushels an acre; three and a half acres of rye, which produced 60 bushels; three-fourths of an acre of oats, 35 bushels; one acre of barley, 37 bushels; and one-half an acre of potatoes, 70 bushels. Beside the above he has raised beets, carrots, and other vegetables. A particular statement of the products of his farm, the mode of cultivation, &c., will be furnished by him within the time prescribed by the Society. The gross income of his farm last year was $547, and his expenses for hired labour were $90. His income and expenses will not be materially different this year.

The farm of Braley Jenkins, Jr., of West Barnstable, was also entered for a premium. Mr. Jenkins has not furnished the committee with a particular statement of the products of his farm, mode of cultivation, &c., and was absent at the last examination. The farm is not one of the largest or most productive in the country. The soil is mostly sandy. A portion is loam, and naturally good. During the past year much attention has been paid to the composting of manures and the appearance of the grounds and crops indicated careful and skilful management.

The committee have awarded the following premiums, to be paid by the treasurer, if the statements required by the rules of the Society are filed with the Secretary by the 15th of November next:

To Mr. James H. Knowles, of Eastham, the first premium—one copy of Farmer's Dictionary and eight dollars and fifty cents.

To Mr. Braley Jenkins, Jr., of Barnstable, the second premium, $6.—*Yarmouth Register.*

Barnstable, October 21st, 1847.

Treatment of Horses, *brought in hot from a journey or from any other labour.*—On taking off their saddles, bridles, or other harness, *turn them into a field*, and let them, *for* 15 *or* 20 *minutes*, roll and amuse themselves at pleasure. *After this* take them to the stable, and rub, curry, and groom them in the usual manner. By observing this method you will find your horses much sooner dried, and much less liable to break out into fresh sweats or to catch colds, than if at once taken into the stable. I tried it with my own horses,—saddle, coach, and farm,—for more than twenty years, and therefore speak from my own knowledge on the subject. An Englishman.

"Plants intended to be acclimatized, should never be subjected to artificial heat during the winter that precedes their being planted out; if obtained from seeds, as little heat as possible should be employed in raising them."

The Drovers.

BY JOHN G. WHITTIER.

A freer, manlier life than ours,
No son of toil is living—
Through heat and cold, and sun and showers,
Still onward cheerly driving.
But, see, the day is closing cool,
The woods are dim before us,
The white fog of the wayside pool
Is creeping slowly o'er us.

The night is falling, comrades mine,
Our foot-sore beasts are weary,
And through yon elms the tavern sign
Invites us all to tarry.
The landlord beckons from his door,
His beechen fire is glowing;
These ample barns with feed in store
Are filled to overflowing.

From many a valley frowned across
By brows of rugged mountains;
From hill-sides where through spongy moss
Gush out the river fountains;
From quiet farm-fields, green and low,
And bright with blooming clover;
From vales of corn the wandering crow
No richer hovers over;

Day after day our way has been
O'er many a hill and hollow;
By lake and stream, by wood and glen,
Our stately drove we follow.
Through dust clouds rising thick and dun,
As smoke of battle o'er us,
Their white horns glisten in the sun,
Like plumes and crests before us.

We see them slowly climb the hill,
As slow behind it sinking;
Or, thronging close, from roadside rill
Or sunny lakelet drinking.
Now, crowding in the narrow road,
In thick and struggling masses,
They glare upon the teamster's load
Or rattling coach which passes.

Anon, with toss of horn and tail,
And paw of hoof and bellow,
They leap some farmer's broken pale,
O'er meadow-close and fallow.
Forth comes the startled good man; forth
Wife, children, house-dog, sally,
Till once more on their dusty path
The baffled truants rally.

We drive no starvellings, scraggy grown,
Loose-legged, and ribb'd and bony,
Like those who grind their noses down
On pastures bare and stony—
Lean oxen, rough as Indian dogs,
And cows with dust-dry udders,
Disputing feebly with the frogs
The crop of saw-grass meadows!

In our good drove, so sleek and fair,
No bones of leanness rattle;
No tottering, hide-bound ghosts are there,
Of Pharaoh's evil cattle.
Each stately beeve bespeaks the hand
That fed him unrepining;
The fatness of a goodly land,
In each dun hide is shining.

We've sought them where in warmest nooks
The sweetest feed is growing,
And priced them by the clearest brooks
Through honeysuckle flowing;
Wherever hillsides, sloping south,
Are bright with early grasses,
Or, tracking green the lowland's drouth,
The mountain streamlet passes.

But, now the day is closing cool,
The woods are dim before us,
The white fog of the wayside pool
Is creeping slowly o'er us,
The cricket to the frog's bassoon
His shrillest time is keeping,
The sickle of yon setting moon
The meadow mist is reaping.

The night is falling, comrades mine,
Our foot-worn beasts are weary,
And through yon elms the tavern sign
Invites us all to tarry.
To-morrow, eastward, with our chargo
We'll go to meet the dawning,
Ere yet the pines of Kearsarge
Have seen the sun of morning.

When snow-flakes o'er the frozen earth
Instead of birds are flitting;
When children throng the glowing hearth,
And quiet wives are knitting,
While in the fire light strong and clear,
Young eyes of pleasure glisten,
To tales of all we see and hear
The ears of home shall listen.

From many a Northern lake and hill,
To Ocean's far-off water,
Shall Fancy play the Drover still,
And make the long night shorter.
Then let us still through sun and showers
And heat and cold be driving;
A freer, manlier life than ours,
No son of toil is living!

National Era.

SHEEP are more subject to diseases of the eye that lead on to blindness, than many persons who are most accustomed to them imagine. It is a singular circumstance, and not so well known as it ought to be, that if the eyes of a flock of sheep are carefully examined, half of them will exhibit either disease then present, or indications of that which existed at no very distant date.

From the American Agriculturist.

Swarming of Honey Bees.

The cause of swarming, in all cases, is an excess of population, the bees not having room for all to work to advantage. When bees are placed in very large hives, or when they are quartered in an open room, as is sometimes done, they never swarm. Swarming may also be prevented by affording additional room, either at the bottom, top, or side of the hive during the swarming season. As a matter of profit, in the increase of stocks, bees should never be placed in rooms, or in hives larger than twelve inches square. If we should hive two swarms, the one in a hive *two* feet square, and the other in a hive *one* foot square; or in hives of the same solid contents, though differently shaped, the result of the increase of each, at the end of five years, would be, with good management, about as follows, viz: the swarm in the larger hive would about half fill it with comb the first year; the second year it would be completed, but no new swarm. The following spring would find the hive full of comb, but only half full of bees; and it would require the third year to replenish, and so it would continue *ad infinitum*, yearly replenishing its lost population, and at the end of fifty years you would have no more bees than when you commenced!

The other hive would be plumply filled the first year; the second year a couple of prime swarms might be calculated on; the third year, we will say, only one swarm each—a very low estimate—we now have six swarms; the fourth year we will double to a certainty, and the fifth year the same, making twenty-four swarms, while the larger hive "stands alone in its glory," if not entirely annihilated by the ravages of the moth, the more probable result of the two. In each hive there is but one queen, which is the source of all the increase. The eggs are laid by her. A hive one foot square is as large as she can use. In such a hive all the workers that she desires to carry out her ends can be fully accommodated. Ten thousand bees to a hive in the spring are all-sufficient—more would be but an encumbrance; hence, we find, that though there be one hundred thousand in a large hive during the breeding season, the following spring finds them departed to that "bourne whence they never return."

The principal laying of the queen depends much upon the mildness of the spring, and much upon the strength of the stock. I am fully satisfied that many of my stocks are in progress of breeding through the entire winter, to some extent. Indeed that such is the case with any populous stock we have abundant proof, in cases where the stock has been destroyed in the heart of winter, as an experiment to test the fact. Where such is the case, there is not that diminution in the number of the bees from fall to spring that ordinarily occurs. In weak stocks, the internal heat necessary for the maturing of the young brood cannot be produced, and we find that such stocks are compelled to await the approach of warm weather. Here we have the basis of prosperity in a nut-shell. If we cannot so manage that our hives will be populous to their greatest capacity, we may as well give up the idea of perfect success at once.

If the hive be well filled, the queen is fully aware that a large portion of her increase, which the laws of nature compel her to give, must leave her domicil; and she also, through instinct, learns that each swarm must be provided with a queen-regent, like herself, in order to perpetuate their species. These queens, or rather princesses, are produced from the common egg from which issue the workers, or from a common worker-grub, in its primary stages of advancement by a particular treatment. This fact is shown by the mode of artificial swarming, now practised to some extent; the philosophy of which is this: if a piece of comb, containing the young brood of different stages of maturity, be attached to the top of an empty hive, and a quantity of bees be placed therein, having no queen, they will select a certain aged grub from the comb afforded them, and by a particular process of nursing and feeding—the nature of which never was nor ever will be known by us—they will produce a perfect queen, and proceed in their avocation as usual. Without this piece of comb no power or ingenuity of man could cause the bees to perform a single day's labour.

As each swarm requires a *princess* from the old stock, from two to six are generally produced every spring, and such as are not wanted are immediately put to death, as it is entirely out of the question for more than one to exist in the same hive, unless it be during the short period awaiting the issue of a swarm. A very remarkable circumstance occurs in the developement of these young princesses; they are so timed in their maturity as to issue from their cells respectively just as thay are wanted to take their departure with the swarms. That is, giving them a short period after quitting their cells to gain strength for the journey, say forty-eight hours. It must here be borne in mind, that where there is sufficient room, as in very large hives, the queen sees no necessity of

swarming, and consequently takes no measures to furnish the young princesses.

Indeed it often occurs, that she neglects to do this in cases where the greatest necessity exists for them; and as a swarm never leaves in such a case, we find many of our hives loaded with bees, clustering around and below during the entire warm season, which we watch with anxiety from day to day, or hour to hour, wondering what can keep them spell-bound to their tenement! As the needle invariably points to the north pole, and no human power can change this law of nature, so is the queen-bee the loadstone that draws every bee to her. The broiling rays of a summer sun, famine, nay, the prospect of a certain death cannot move them. But when a young queen sallies forth on the wing of uncertain destiny, she is the magnet that draws after her a goodly portion of the animated mass. Whither she goes they follow, and as she would gather her subjects around her, preparatory to the journey, she selects a slender branch of some small tree and alights. The bees at once commence clustering around her, perhaps some few minutes before the last have left the hive. Whether the bees ever select a habitation before leaving the hive, is a matter of doubt with me. They sometimes do take at once, after issuing, to some suitable tenement, such as a decayed hive, or some hole in a building, or perhaps they may cluster for a few minutes, and then rapidly take their flight to the forest. All of this may be and probably is concerted after swarming. In confirmation of this, I once had a swarm issue from the hive in which the day previous it had been lodged, and after revolving a long time in the air, settled down upon the very hive from which they had just issued. Now here is an instance where a particular location is fixed upon while on the wing. What caused this singular operation I cannot say, unless it was that they took some dislike to the hive, and afterwards concluded to try it again. In order to remove such a difficulty, I took another hive, and as soon as they had fully clustered set it upon a table, and also set the hive with the bees upon its side near it; then with a dusting brush swept them gently down upon the table, and they quietly entered the new hive, and did well.

The number of bees produced from April to July, in a strong stock, may be estimated at from 20,000 to 30,000. The first swarms I have generally found to be the largest, though some consider that in general the second are. The third are usually small. The period between first and second swarms is nine days; between second and third six or seven, and if yet another, the next day or two. The time, however, is dependent upon the weather. If we have hot, sultry weather, the bees mature more rapidly, and are increased in numbers, and consequently throw off swarms faster, but we need never look for a second swarm sooner than a week, and if the weather be cold and wet, it may be delayed fourteen days.

There is a catastrophe attending a rainy spell of weather during the swarming season, that many persons may not be aware of, which is this: the queen, in laying the foundation of new princesses, calculates upon their maturity at certain periods; when, if the weather should permit, swarms would be ready to issue, according to her principles of the science; but as she cannot foretell the weather, she is often caught with three or four of these royal scions on hand, and the weather does not permit the issue of a swarm for several days, as fine weather for such an operation alone will do.

As these princesses ripen in maturity, a spirit of jealousy begins to be engendered, that sets the whole hive in an uproar. Here is a sad dilemma! The old queen expects to go off with the first swarm, in person, as soon as the weather becomes fine; in the mean time there are several young expectants of assuming the reins of government, who begin to show a spirit of revolt as they grow in strength and age. If this state of things last for a week, through rainy weather, their jealousy becomes so furious that a general fight of extermination takes place, and the one that finds herself alive last, assumes the reins of that stock; and if all the princesses have matured, there will be no more swarming that season.

This is another reason why bees do not swarm, when we think they do not know what is for their own interest; but I assure the reader, that when they do not send off swarms, it is for a good and sufficient cause, though we way not be able to comprehend it.

T. B. Miner.

Ravenswood, L. I., May, 1847.

Mahogany.—Dr. Gibbons, an eminent physician, in the latter end of the seventeenth century, had a brother, who was the first that brought from the West Indies some mahogany logs to London, for ballast. The doctor was then building him a house in Covent Garden, and his brother, the captain, thought they might be of service to him, but the carpenters found the wood too hard for their tools, and it was laid aside as useless. Soon after, Mrs. Gibbons wanted a candle box, and got a cabinet maker to make it out of the useless wood lying in the gar-

den. The box was made, and the doctor was so pleased with it, that he got the cabinet maker to make him a bureau of it, and the fine colour and polish of it induced him to invite a great number of his friends to see it, and among them the Duchess of Buckingham. Her Grace begged the doctor for some of the wood, and got Woolaston, the cabinet maker, to make her a bureau also, on which the fame of mahogany and Woolaston was much raised, and it became the rage for grand furniture. No other wood has excelled it yet.—*Farmer and Mechanic.*

"Break the Crust."—Many years ago, when I lived in Connecticut, a man from among my acquaintance removed from that State into Vermont. He was a farmer that understood his business and attended to it. Some years after, I made a tour into Vermont, and the first call that I made after crossing the river out of New Hampshire, was at his house. He had got a fine farm, a good proportion of which was intervale on the Connecticut. There was a field of three acres on the intervale before the door, which, he said, when he came to make his purchase, had on it a very stunted growth of corn. To use his own words, "it was but little bigger than pennyroyal." He asked the owner the reason of the corn making such a miserable appearance. He said he did not know. But, said my friend, "I knew." He finally bought the farm, and the next season undertook to renovate that field solely by ploughing. He ploughed every opportunity through the season, taking care to plough only when the dew was on, or immediately after a rain. He went over it a number of times in the season, and sowed it with wheat in the fall; and when he came to harvest and thresh it, he had 154½ bushels, averaging 51½ to the acre.—*Cultivator.*

Local Technicalities.—*A Ready Rule for Farmers made Readier.*—A "quarter of wheat," is an English measure of eight standard bushels—so, if you see wheat quoted at 56 shillings, it is 7 shillings a bushel. A shilling is 22½ cents; multiply by 7, and you will have $1 57½ per bushel.

In Kentucky corn is measured by the barrel, which is five bushels of shelled corn. At New Orleans, a barrel of corn is a flour barrel full of ears. At Chicago, lime is sold by the barrel, and measured in the smallest size cask of that name that will pass muster. A barrel of flour is seven quarters of a gross hundred—112 lbs.—which is the reason of its being the old measure of 196 pounds. A barrel of tar is 20 gallons, while a barrel of gunpowder is only a small keg holding 25 lbs.,—and that reminds me of cotton, a bale of which is 400 lbs., no matter in what sized bundles it may be sent to market.

Price of Flour.

We are indebted to a friend for the following average of prices of flour in this city from the year 1824 to 1846 inclusive. It is an interesting, and we believe a reliable statement. The averages have been taken on the prices during the season of canal navigation.

Years.	*Av. price.*	*High. price.*	*Low. price.*	*Dif. in price.*
1824	$5 38	$5 50	$5 25	$ 25
1825	4 77	4 87	4 64	24
1826	4 61	5 13	3 88	1 25
1827	4 72	5 75	4 63	1 12
1828	5 78	7 50	4 50	3 00
1829	5 69	7 00	4 50	2 50
1830	5 19	5 25	4 88	37
1831	5 69	6 25	5 19	1 06
1832	6 02	6 25	5 75	50
1833	5 55	5 75	5 38	37
1834	5 01	5 31	4 81	50
1835	6 34	6 94	5 75	1 19
1836	8 19	10 00	7 00	3 00
1837	9 64	12 00	8 50	3 50
1838	8 09	9 00	7 00	2 00
1839	6 99	8 75	6 00	2 75
1840	4 94	5 63	4 75	88
1841	5 61	6 75	4 88	1 87
1842	5 36	6 50	4 13	2 37
1843	4 93	5 38	4 50	88
1844	4 53	4 88	4 13	75
1845	5 00	6 88	4 25	2 63
1846	4 90	6 00	3 75	2 25

Highest average price $9 04 was in 1837; lowest average price $4 53 was in 1844. Highest price $12 was in 1837; lowest price $3 75 was in 1846.—*Albany Argus.*

Supply of Cattle.

The following is a carefully prepared statement of the amount of live stock received monthly at the Philadelphia cattle market, during the year ending the 30th of December, 1847, inclusive—to which we have added the total supply in several previous years:

	Beeves.	Cows & Calves.	Sheep.	Swine.
January,	3620	950	1900	3800
February,	3650	900	1450	4150
March,	4000	1070	1425	4530
April,	4590	1570	2590	5190
May,	4240	1080	3280	3740
June,	5570	1120	4030	5350
July,	4070	1040	3970	4800
August,	4100	970	3000	5560
September,	4420	1000	3340	5370
October,	4560	890	3620	5190
November,	4280	1140	3570	4860
December,	4450	1200	3640	4590
Total in 1847,	51,550	12,990	36,420	57,130
same time 1846,	54,980	12,210	23,700	77,350
" " 1845,	49,290	9,680	52,710	77,030
" " 1844,	44,360	22,112	24,754	75,242
" " 1843,	37,420	15,121	22,490	80,480
" " 1842,	34,293	13,270	21,264	79,559
" " 1841,	29,657	10,863	26,630	68,895

Pa. Inquirer.

British Association.—Potatoe Disease.

June 28th—Mr. Westwood made some remarks before the British Association, on the existence of the potatoe disease in Oxfordshire. Some potatoes of his own had been attacked this year, and in three different districts around Oxford he had observed its presence. As an entomologist, he wished to deny most distinctly, that he thought the disease arose from the attacks of an insect. It had been stated by Mr. Smee that it arose from the attacks of a new aphis, which he called vastator, but this aphis, far from being new, had been described many years ago, and was a very common insect on decaying plants. Another gentleman proposed to call the insect A. pestilens. Mr. Westwood drew attention to the ignorance such observers displayed, as rendering it necessary that zoology should be taught as a branch of education. He was sorry to be speaking on this subject in an English University, where neither zoology nor comparative anatomy were recognised as necessary to complete the education of the professional man or gentleman. Mr. J. E. Gray stated, that he had compared some specimens of the aphis vastator with species of aphides in the British Museum, and found that under this name Mr. Smee had included three or four well known species. Dr. Lankester, drew attention to a bundle of potatoe stalks which he had brought from Pangbourne, which gave every sign of disease, but not an aphis could be found among them. One fact of this kind was sufficient to prove that the disease had no dependance upon the insect. He had heard from a gentleman in Manchester that potatoes sown in new soil on Chat Moss were free from the disease, whilst those sown in old soil all had the disease. This looked as if the inorganic constituents of the soil or potatoe were the source of the disease. Mr. Babington referred to the potatoe stems from Pangbourne. He had examined the roots of these plants, and found that wherever the disease appeared in the leaves there was evidence of disease in the roots. He believed the root or haulm was first at fault. He quite agreed with Mr. Westwood in the necessity of a more general knowledge of natural history. Sir W. Jardine said that chemical investigations of a very accurate nature, both of the soil and the potatoe, were being carried on in Edinburgh. He had found that potatoes grown on moss soil were more free from disease than others. This did not arise from the newness of the soil, for he had had some potatoes entirely spoiled which were planted in an orchard recently turned up. He had seen the stem and root very much affected without the leaves being diseased at all. He was happy to say that in Edinburgh all students of the University were expected to attend the natural history lectures. Mr. Hogan called attention to a method he had pursued of preventing the disease in the potatoe by growing them from seed. Mr. C. Darwin had brought the seed of the potatoe from Peru, and the tubers grown from it were quite as much affected as any other. Dr. Kelart stated that he had recently heard from Ceylon that the potatoes had been attacked in that island. A member said that he had just received letters from New Zealand, and the potatoe was also affected there. The Rev. N. Young, of New College, exhibited some potatoe leaves affected by the aphis.

On the Vitality of potatoe seeds, by John D. Murray, Esq., of Murraythwaite. In 1832 or 1833, a portion of ground in my garden, which produced a crop of potatoes, was trenched to the depth of 18 inches, and after bearing various crops for several years after, was turned into a flower garden, and covered with turf, which was kept regularly mown. After having been kept as a flower garden for eight or nine years, I this spring turned it into a kitchen garden, and for that purpose again had it trenched 18 inches deep, and sown with beet-root. About a month ago, when weeding and thinning the beet-root, I observed that a considerable number—perhaps 30 plants—of seedling potatoes had sprung up. They were spread irregularly over the whole piece of ground, a few being in the rows with the beet-root, but the greater part in the intervals between the drills. When I last saw them—about three weeks ago—they were looking very healthy, and exhibited considerable variety in the shape of the leaves. I have no doubt that they are the produce of seed from the crop of 1832 or 1833, which had been allowed to ripen on the ground, and the seed having been buried 18 inches deep, had remained dormant until brought again to the surface by the trenching this spring.

Potatoe Disease.—Mr. C. R. Bree said: In September, 1846, I ventured to suggest that we should endeavour to arrive at sound conclusions about the nature and cause of the potatoe disease, by registering and reasoning upon facts alone. I also stated that for two years I had observed symptoms of the disease for the first time on the 23rd of August. When I observed, therefore, your notice of the 20th ult., that we had nearly escaped the disease, I could not help thinking that the remark might still be premature, and the experience of the last ten

days—I write September 1st,—has unfortunately verified—at least partly—the truth of my anticipation. Previous to the heavy rain which fell throughout this district in the thunder storm of the 16th of August, I heard no complaint of disease; I had not a vestige of it in my own garden, nor could I hear of it in those of my neighbours, with one exception, and that of a limited character. Between the 16th and 20th of August rumors of disease in this neighbourhood sprung up, and by the 30th it became general. In some instances the loss is as great as in 1845. We thus find that in the three years this pestilence has destroyed our potatoe crop, it has invariably exhibited itself most severely and extensively between the 15th and 31st of August. This fact allowed, we make one step towards a rational description of the disease. Now, with regard to its nature; it appears in different parts of the plant at the same time, in the form of small black patches, resulting from the death of a portion of the tissue of the plant. These blotches in the leaves are generally dry, and crumble beneath the touch, and in some instances are covered with a parasitical fungus, the Botrytis Infestans. No person, I think, who has had the slightest experience, will fall into the great error of attributing the accession of the blotches to the injury caused to the leaf by an aphis, or any other insect. The two phenomena are widely different. The aphis causes the leaves which it infests to curl and form hollows, in which it generally is found to congregate in large numbers long before the vitality of the leaf is affected. This is not the case with the potatoe disease. I have looked carefully through my rows without finding an aphis of any description; but there is no mistaking the dark, isolated, gangrenous-looking spots, which are appearing on the leaves, along the stems, and among the tubers. How is this? I take up a root, and find five tubers perfectly sound and one diseased. I look at once at the stem and leaves, and find patches of the well known disease isolated, perfectly distinct from each other. Now I know of no law in vegetable physiology which enables an insect to cause phenomena like these. The notion is too absurd; it will not bear a moment's examination. In one of my deductions last year, I suggested the soil might have a greater or less influence in effecting a change in the vital process; but I find that the gardens on our rail-road, some of which are many feet below the usual surface, are all infected. One attribute of the soil I feel quite convinced has considerable influence over this disease, viz: its moisture. I have planted some potatoes in a line, part of which are among gooseberry bushes and very damp; the other portion is very dry. In the former the potatoes are nearly all diseased, in the latter they are nearly all sound. With regard, then, to the nature of this disease, I think we may fairly define it "gangrene of the plant, occurring in the first instance in isolated patches, either in the leaves and stem alone, or simultaneously in the tuber, which if left alone will ultimately destroy the plant and tubers entirely." Nearly 200 years ago, Sydenham described a species of cholera affecting the human subject in August. Popular error has generally attributed this disease to the plum season; but this is a great mistake. The disease described by Sydenham may have been studied by many observers in 1847, without a variation in the symptoms. It occurs in those who do not eat plums, and the disease caused by plums is not that described by Sydenham. It is, in fact, one of those periodic phenomena of which we know little more than its appearance and disappearance at certain seasons of the year, and which we judge by analogical reasoning is caused by some or other of those little understood, or rather little studied, laws which belong to the science of meteorology. That the potatoe disease belongs to the same class of diseases must, I think, be perfectly clear. It has all the characters, all the variations, and all the obscurity of a periodical epidemic. We may describe it as "Morbus niger—a gangrene of the tissues of the potatoe plant occurring epidemically in August; the diseased parts generally covered with a fungus, which appears subsequent to the disease. More extensive in cold and damp situations." More than this, so far as regards the etiology of the disease, I do not think we shall ever know.—*Gardener's Chronicle.*

Officers of Philadelphia Agricultural Society.

At the annual meeting of the Philadelphia Society for promoting Agriculture, held on the 5th inst., the following named gentlemen were elected to serve as officers for the ensuing year.

President—A. S. Roberts.

Vice Presidents—Dr. A. L. Elwyn and Robert T. Potts.

Rec. Secretary—Aaron Clement.

Assistant Rec. Secretary—P. R. Freas.

Corresponding Secretary—Owen Jones.

Treasurer—George Blight.

Curators—David Landreth and S. S. Richie.

Librarian—Aaron Clement.

Philadelphia, Jan. 6th, 1848.

Address of Algernon S. Roberts,

President of the Philadelphia Society for promoting Agriculture, at their annual meeting, January 5th, 1848.

GENTLEMEN,—Deeming our annual meetings,—when more members are usually assembled than at the ordinary monthly meetings,—a proper occasion for addressing to you a few thoughts and observations connected with the interests and objects of our Society, and respecting the agricultural capacity of this district, I must ask your indulgence for a few moments.

It is the good fortune of those who constitute this Society to live in a highly agricultural country, the soil of which has been tilled for almost two centuries, and a large portion having lost its virgin richness, must rely on good cultivation and liberal treatment for a bountiful yield to the husbandman.

We have within a circuit of some fifteen or eighteen miles around Philadelphia, including both shores of the Delaware, a greater variety of soil than can be found within the same limits in almost any other region: this variety of geological formation is consequently accompanied by as great a variety of productions, requiring various modes of cultivation and a high degree of agricultural skill to insure success.

On the eastern side of the Delaware, we have the cretaceous, or warm and silicious soil, which borders the Atlantic coast of all the States south of Connecticut, and whence we are supplied with fruit, vegetables, &c., of an almost tropical clime—crowding our markets with melons, peaches, sweet potatoes, and other luxuries peculiar to equatorial or low latitudes, and most of them too in greater perfection than similar productions of the south; for it is a singular, and I believe a well established principle, that the quality and flavour of fruit, vegetables, &c, improve as we proceed north, up at least to a certain limit, which probably will be found where the heat of the sun has no longer the power of ripening, or the length of the season, of maturing the respective kinds. Thus, for instance, the apples, peaches and pears of high latitudes, it is well known are superior to the same articles raised within the tropics, and so of the common potatoe and of all the cereal grains—their yield is greater and the quality better in temperate or northern latitudes, than in the sunny south.

The same rule is said to hold good with the productions that are confined exclusively to what *we* term the South—the cotton and sugar of our Southern States being better than those of the equatorial South, and the oranges of Florida superior to those of the West Indies.

Along the western shore of the Delaware and in a part of the peninsula formed by the junction of the Schuylkill with that river, we have an alluvial soil of finely comminuted silicious and argillaceous deposits, with sufficient vegetable matter to make a fertile soil, well adapted to the raising of vegetables. To this "river deposit," and to the diluvial formation with which in many places it alternates or is intermixed, we owe in a great measure the high reputation of the Philadelphia vegetable market. The alluvial or river deposit in the lower part of the "neck," and on the western shores of the Delaware and Schuylkill, below the city, becomes flatter; more difficult to drain in wet weather, and the soil more argillaceous and compact, which renders it unsuitable for the spade or plough, but well adapted to the raising of grass; hence the extensive and rich meadows which border those streams and afford pasturage to the numerous herds with which they are enlivened.

The next formation that I shall notice, is probably the most important in this section of country, and is known to the geologist as the "diluvial," or ancient deposit, consisting chiefly of gravel, sand and clay—the detritus of primary formations, either in alternate layers, or intermixed and comingled, frequently abounding with water-worn or rounded boulders and pebbles of sand-stone, flint, gneiss, &c.

To discuss the speculative theories that have been advanced regarding the formation of this interesting deposit, on which our beautiful city reposes, would require more time than is consistent with my present purpose, and I shall confine myself to a few descriptive remarks on its agricultural character and influence. The diluvial formation in the immediate vicinity of the city, consists chiefly of strata of gravel and sand, over which is a stratum of loamy clay, forming the subsoil of the surface coat or arable loam—the latter being originally from six to ten inches, but now depending a good deal for its thickness on tillage. There is much of this formation, which I doubt not would be greatly benefited by under draining and subsoil ploughing. This system of culture should, however, be cautiously applied where gravel or sand constitutes the subsoil.

The diluvium, or drift, as it is often termed, thins off as we recede westward, and the primitive formation begins to appear, consisting of gneiss, hornblende, mica, and clay slate. These primitive rocks would make

the surface extremely rugged, and in many places barren, were it not that the diluvium still to a considerable extent covers the surface, though greatly modified by the disintegration of the rocks.

The primitive formation of eastern Pennsylvania is with few exceptions stratified, being the metamorphic, or changed rocks of Lyell, and to this circumstance together with their diluvial covering, we owe the gradually undulating surface, that enables the farmer to work with facility.

The soil, as before observed, is influenced by the underlying rock, wherever the disintegrating hand of time has been at work. Where gneiss or laminated granite prevails the soil is light and open, but not so much so as where micacious stones form the subsoil or approach the surface; while the decomposition of hornblendic and argillaceous rocks forms a more retentive soil, and capable of producing heavier crops. The happy blending of these materials has, however, in most cases, formed a surface soil well suited to the cultivation of cereals, and of natural and artificial grasses.

The primitive formation makes its appearance boldly in the granitic gneiss of Fairmount, but as we recede from the banks of the Schuylkill, the rocks are not visible on the surface until we progress further west. This formation extends across the State in a north-east and south-west direction, and includes the crystaline marble and limestone, which form a still more fertile soil, adding largely to the resources, both agricultural and mineral, of eastern Pennsylvania. The limestone is overlaid and succeeded by the red and grey sandstone, and shales or middle secondary formation of Rogers.

This is a highly valuable section for the farmer, and with the addition of lime as a manure becomes exceedingly fertile. This secondary zone, like all the other geological strata of our State, runs in a north-eastern and south-western direction, crossing the Schuylkill a little below Norristown, and extends with few interruptions to the base of the south mountains below Reading. It may be known by the deep reddish brown colour imparted to the soil, and which is occasioned by oxide of iron.

In the primitive formation is a stratum of steatite or talcose rock, which crosses the Schuylkill about two miles above Manayunk, from which is obtained the soap-stone so extensively used as hearth and fire-stones, &c. Where this description of rock forms the subsoil or has but little covering, sterility prevails, and it frequently makes itself known by a barren strip of land. This stratum is well defined where it crosses the Lancaster turnpike twelve or fourteen miles from Philadelphia, and again near the intersection of the Columbia and West Chester rail roads. The sterile character of this rock is probably owing to its indestructable nature, and its destitution of fertilizing materials. It abounds in the vicinity of Baltimore, and bids stubborn defiance to the cultivator. There, however, a variety of it has been turned to profit in the manufacture of epsom salts.

In the year 1826, Dr. G. Troost, under the auspices of this Society, made a geological survey of the semi-circle of fifteen miles around Philadelphia, limiting his examinations to this side of the Delaware. As a pioneer, he opened the way and imparted considerable information for that early age of the science, but his report and map should be considered only as introducing the work of exploration, which I regret to say, has not since been followed up sufficiently to make us well acquainted with the earth we daily tread upon.

Dr. Troost divides the land within fifteen miles of the city, and on the western side of the Delaware, into four classes, namely, "1st, granitic soils, which probably owe their origin to the disintegration of gneiss, mica slate, and feldspar: these soils are in general, light and of a sandy nature.

"2nd. Amphibolic or hornblendic soils, originating from the decomposition of amphibolic rocks," (and he might have added, from all rocks of an argillaceous base.) "These soils are of a loamy nature, having generally a ferruginous colour, approaching even to a brownish red, and containing a large quantity of iron.

"3rd. Limestone soil, being partially produced by the disintegration of limestone; and

"4th. Alluvial soil," which includes diluvial, no distinction being made between these two classes in his report.

Peter A. Browne, Esq., has also written an essay on the diluvial formation of Philadelphia county, correcting some of the views of Dr. Troost, and noticing the remarkable fact, that in several—probably in all—parts where the *diluvial* strata of Philadelphia have been penetrated through, they are found to be underlaid by an alluvium, in which are deposited bark, shells, timber, and various organic substances, proving that this formation must have been anterior to the diluvial.

Professor Rogers, in his geological survey of the State of Pennsylvania, has described in general terms the formations of this part of the State, but almost unaccompanied with agricultural views or opinions; and in fact no writer on the subject with whose

works I have met, except Dr. Troost, appears to have given much consideration to the agricultural properties of the respective geological formations in this vicinity. It would be highly gratifying to learn that some of our scientific men had turned their attention to this important subject. It is one, however, that every farmer as well as philosopher, may study with advantage, and may acquire a fund of practical knowledge in the investigations that would result from geological inquiry.

With a soil so diversified, and most of it susceptible of being made exceedingly fertile and productive, with good roads and navigable waters, with a market unsurpassed and with the numerous facilities of commerce and manufactures around us, we may well boast of having the elements of agricultural wealth and prosperity within our reach.

It is then our duty and should be our ambition as the occupants of this favoured section to improve the advantages we enjoy;—to enlarge the sphere of our usefulness; to make ourselves, not merely members, but active and useful associates of this the most ancient agricultural institution in the Union. In this age of advancement the most numerous portion of the community, the cultivators of the soil, must not be listless or indifferent spectators.

We have, by our annual exhibitions, our monthly discussions, and our frequent social intercourse, contributed materially to the improvement, which I am happy to say, is visible in the agriculture of eastern Pennsylvania; but by vigorous and well directed action we may effect much more in future for the cause we espouse. As one means among the many to promote the objects of our Society, allow me to suggest the frequent visiting and inspection of farms, whether belonging to members of the Society or others. Visits of this kind might be made either officially or semi-officially, by self constituted committees of two or three, calling on such of their neighbours as are convenient, communicating to our meetings whatever they may think worthy of remark, and suggesting useful hints and improvements wherever occasion offers. The discussions and frequent interchange that would be elicited by a practice of this kind, could not fail to be highly beneficial, not only to this Society, but also to the agricultural community at large, whose favourable opinion we should cultivate and merit.

A. S. Roberts.

The peach may be rendered quite a dwarf, by budding on the Mirabella plum stock.

Management of the Horse.

The breathing of pure air is necessary to the existence and the health of man and beast. It is comparatively lately that this has been admitted even in the management of our best stables. They have been close, and hot, and foul, instead of airy, and cool, and wholesome. The effect of several horses being shut up in the same stable is completely to empoison the air; and yet, even in the present day, there are too many who carefully close every aperture by which a breath of fresh air can by possibility gain admission. In effecting this, even the key-hole and the threshold are not forgotten. What, of necessity, must be the consequence of this? Why! if one thought is bestowed on the new and dangerous character that the air is assuming, it will be too evident that sore throat, and swelled legs, and bad eyes, and inflamed lungs, and mange, and grease, and glanders, will scarcely ever be long out of that stable.

Let this be considered in another point of view. The horse stands twenty or two and twenty hours in this unnatural vapour-bath, and then he is suddenly stripped of all his clothing, he is led into the open air, and there he is kept a couple of hours or more in a temperature fifteen or twenty degrees below that of the stable. Putting the inhumanity of this out of the question, must not the animal thus unnaturally and absurdly treated be subjected to rheumatism, catarrh, and various other complaints? Does he not often stand, hour after hour, in the road or the street, while his owner is warming himself within, and this perhaps after every pore has been opened by a rushing gallop, and his susceptibility to the painful and the injurious influence of cold has been excited to the utmost?

It is not so generally known as it ought to be, that the return to a hot stable is quite as dangerous as the change from a heated atmosphere to a cold and biting air. Many a horse that has travelled without harm over a bleak country, has been suddenly seized with inflammation and fever when he has, immediately at the end of his journey, been surrounded with heated and foul air. It is the sudden change of temperature, whether from heat to cold, or from cold to heat, that does the mischief, and yearly destroys thousands of horses.

Mr. Clarke, of Edinburgh, was the first who advocated the use of well ventilated stables. After him Professor Coleman established them in the quarters of the cavalry troops, and there cannot be a doubt that he saved the government many thousand pounds

every year. His system of ventilation, however, like many other salutary innovations, was at first strongly resisted. Much evil was predicted; but after a time, diseases that used to dismount whole troops, almost entirely disappeared from the army.

A hot stable has, in the mind of the groom, been long connected with a glossy coat. The latter, it is thought, cannot be obtained without the former.

To this we should reply, that in winter a thin, glossy coat is not desirable. Nature gives to every animal a warmer clothing when the cold weather approaches. The horse—the agricultural horse especially—acquires a thicker and a lengthened coat, in order to defend him from the surrounding cold. Man puts on an additional and a warmer covering, and his comfort is increased and his health preserved by it. He who knows anything of the farmer's horse, or cares about his enjoyment, will not object to a coat a little longer and a little roughened when the wintry wind blows bleak. The coat, however, needs not to be so long as to be unsightly; and warm clothing, even in a cool stable, will, with plenty of honest grooming, keep the hair sufficiently smooth and glossy to satisfy the most fastidious. The overheated air of a close stable saves much of this grooming, and therefore the idle attendant unscrupulously sacrifices the health and safety of the horse.

If the stable is close, the air will not only be hot, but foul. The breathing of every animal contaminates it; and when, in the course of the night, with every aperture stopped, it passes again and again through the lungs, the blood cannot undergo its proper and healthy change; digestion will not be so perfectly performed, and all the functions of life are injured. Let the owner of a valuable horse think of his passing twenty or twenty-two out of the twenty-four hours in this debilitating atmosphere! Nature does wonders in enabling every animal to accommodate itself to the situation in which it is placed, and the horse that lives in the stable-oven suffers less from it than would scarcely be conceived possible; but he does not, and cannot, possess the power and the hardihood which he would acquire under other circumstances.

The air of the improperly close and heated stable is still farther contaminated by the urine and dung, which rapidly ferment there, and give out stimulating and unwholesome vapours. When a person first enters an ill-managed stable, and especially early in the morning, he is annoyed, not only by the heat of the confined air, but by a pungent smell, resembling hartshorn; and can he be surprised at the inflammation of the eyes, and the chronic cough, and the disease of the lungs, by which the animal, who has been all night shut up in this vitiated atmosphere, is often attacked; or if glanders and farcy should occasionally break out in such stables? It has been ascertained by chemical experiment, that the urine of the horse contains in it an exceedingly large quantity of hartshorn; and not only so, but that, influenced by the heat of a crowded stable, and possibly by other decompositions that are going forward at the same time, this ammoniacal vapour begins to be rapidly given out almost immediately after the urine is voided.

When disease begins to appear among the inhabitants of these ill-ventilated places, is it wonderful that it should rapidly spread among them, and that the plague-spot should be, as it were, placed on the door of such a stable? When distemper appears in spring or in autumn, it is in very many cases to be traced to such a pest-house. It is peculiarly fatal there. The horses belonging to a small establishment, and rationally treated, have it comparatively seldom, or have it lightly; but among the inmates of a crowded stable it is sure to display itself, and there it is most fatal. The experience of every veterinary surgeon, and of every large proprietor of horses, will corroborate this statement. Agriculturists should bring to their stables the common sense which directs them in the usual concerns of life, and should begin, when their pleasures and their property are so much at stake, to assume that authority and to enforce that obedience, to the lack of which is to be attributed the greater part of bad stable-management and horse disease. Of nothing are we more certain than that the majority of the maladies of the horse, and those of the worst and most fatal character, are directly or indirectly to be attributed to a deficient supply of air, cruel exaction of work, and insufficient or bad fare. Each of these evils is to be dreaded—each is, in a manner, watching for its prey; and when they are combined, more than half of the inmates of the stable are often swept away.

Every stable should possess within itself a certain degree of ventilation. The cost of this would be trifling, and its saving in the preservation of valuable animals may be immense. The apertures need not be large, and the whole may be so contrived that no direct current of air shall fall on the horse.

A gentleman's stable should never be without a thermometer. The temperature should seldom exceed seventy degrees in the summer, or sink below forty or fifty degrees in the winter.—*Youatt's Horse.*

For the Farmers' Cabinet.

Grape Culture in the United States.

It cannot but surprise all thinking persons that so little has been done in this country in the grape culture, compared with what might have been done. This state of things can only be accounted for from the fact that there are so many pursuits in our widely extended country, that the grape culture has been overlooked. It has also generally been supposed that there was some *great mystery* in cultivating grapes, and particularly in making wine.

Mr. Longworth, of Cincinnati, commenced the culture of the grape twenty-five years ago, with what is there called the "Cape grape." At Philadelphia it is called the "Alexander;" at Flushing, N. Y., "Schuylkill Muscatel;" at York, Pa., "Madeira;" at Vevay, Indiana, "Constantia." Mr. Longworth by pressing out the juice as soon as the grapes were mashed, produced a wine resembling Teneriffe. He also cultivated the Isabella extensively—but this grape rots badly in the vicinity of Cincinnati:—it does the same thing at Brinckleyville, North Carolina, and these are the only locations in the middle, western, and southern States that we know of, in which this happens.

A short time after starting the grape culture, Mr. Longworth obtained the Catawba from Major Adlum, of Georgetown, D. C., and this is now the favourite variety at Cincinnati.

Major Adlum appears to have had a proper appreciation of the value of the Catawba grape. In a letter to Mr. Longworth, he remarks, "In bringing this grape into public notice, I have rendered my country a greater service than I would have done had I paid the national debt." Mr. Longworth concurs in his opinion.

Mr. Longworth next imported many thousand grape vines from Madeira, France, and Germany. His last importation was five thousand vines, comprising twenty-two varieties from the mountains of Jura, where the vine region suddenly ends. Mr. L. says, "I gave them the best southern exposure on sides of hills, and expended two hundred dollars on one-eighth of an acre of ground, on a side hill with a southern exposure, in my garden. I took out the natural soil to the depth of three feet; laid a layer of gravel in the bottom, two inches thick, and over it a layer of thin paving stone, and filled it up with rich earth with a portion of sand added, and a drain to carry off the rain from the bottom. They grew slowly, were subject to mildew, and though covered in winter, would not succeed in our climate, and not a solitary plant of them is left in my garden or vineyard, except one plant of the *Meunier* (Miller's Burgundy.)"

Mr. L. has also made wine from the *Ohio*, *Lenoir*, and *Herbemont* varieties. The two first named do not produce a fine wine. The Lenoir and Herbemont are both liable to rot—both are fine table grapes, and the Herbemont makes a fine wine. The Missouri is tender at Cincinnati, while in the poor soil of New Jersey it grows luxuriantly, bears well, and is hardy.

For some years Mr. Longworth and other vinegrowers at Cincinnati, have made from the Catawba several varieties of wine, perfectly resembling the best Hock wines of Europe, and when one year old, commanding one dollar and fifty cents per gallon. Five years ago, Mr. L., partly by design and partly by accident, produced a fine article of Champagne. All wines, except the Champagne, are made without any sugar or alcohol. Mr. Miller and Mr. Selves sell their Champagne at twelve dollars per dozen—bottles returned—and thus far have found a ready sale.

In our next we shall give an account of the grape culture and wine making at Reading, Pa., and also what has been done in North Carolina and Georgia.

B. G. Boswell.

Philadelphia, Jan. 11th, 1848.

Rot in Sheep.

This disease is classed among those of the liver, because, except when the animal dies perfectly worn out by the malady, the most striking and the supposed characteristic mischief is found in this organ.

Happily for the American farmers, this destructive malady is, comparatively, of unfrequent occurrence in their flocks; but in Great Britain, on the authority of Mr. Youatt, more than a million of sheep and lambs die every year by this disease. "In the winter of 1830–31 this number was more than doubled; and had the pestilence committed the same ravages throughout the kingdom which it did in a few of the middle, eastern, and southern counties, the breed of sheep would have been, in a manner, extirpated." Many of the farmers lost their entire flocks, not an individual sheep escaping.

It appears, however, the disease is not peculiar to England. Many sheep are destroyed by it in Germany. In the north of France they are frequently swept away by it; and in the winter of 1809, the ravages were terrific throughout the kingdom. It has prevailed at some periods nearly over all Europe, as far north as Norway.

The compiler has no personal knowledge of this destructive malady, and is therefore compelled to rely on the account presented by Mr. Youatt, all of which that is of interest is subjoined.

"The early symptoms of this disease are exceedingly obscure; this is much to be deplored, because in the first stage of it alone does it often admit of cure. The animal is dull, lagging behind his companions—he does not feed so well as usual. If suspicion has been a little excited by this, the truth of the matter may easily be put to the test, for if the wool is parted, and especially about the brisket, the skin will have a pale yellow hue.

"The eye of the sheep beginning to sicken with the rot can never be mistaken; it is injected, but pale; the small veins at the corner of the eye are turgid, but they are filled with yellow serous fluid, and not with blood. Farmers very properly pay great attention to this in their examination or purchase of sheep. If the caruncle is red, they have a proof which never fails them that the animal is healthy. There is no loss of condition, but quite the contrary, for the sheep in the early stage of the rot has a great propensity to fatten. Mr. Bakewell was aware of this, for he used to overflow certain of his pastures, and when the water was run off turn those of his sheep there which he wanted to prepare for the market. They speedily became rotted, and in the early stage of the rot they accumulated flesh and fat with wonderful rapidity. By this manœuvre he used to gain five or six weeks on his neighbours.

"As the disease becomes confirmed the yellow tinge begins to spread—the muzzle and the tongue are stained—the animal is more dull and dispirited—his false condition rapidly disappears—the membrane of the nose becomes livid—the tongue gradually assumes the same character—the eyes are dull, and their vessels charged with a yellow-brown fluid. The breath now becomes fetid—the bowels variable—sometimes costive, and at other times loose to a degree that defies the power of medicine. The skin often becomes spotted with yellow or black—the emaciation is more and more rapid—the general fever increases—the vessels of the eye are more distended and red—the skin becomes loose and flabby, and if it is pressed upon, a peculiar crackling sound is heard—the wool comes off when pulled with the slightest force—the appetite entirely fails—the belly begins to enlarge—on pressure fluid is easily recognized within it, and hence one of its names 'the hydropic' or dropsical rot. The animal is weak in every limb—a violent purging is now very frequently present—the sheep wastes away to a mere skeleton, and at length he dies—the duration of the disease being from two to four or six months.

"When a rotted sheep is examined after death, the whole cellular tissue is found to be infiltrated, and a yellow serous fluid everywhere follows the knife. The muscles are soft and flabby; they have the appearance of being macerated. The kidneys are pale, flaccid, and infiltrated. The belly is frequently filled with water, or purulent matter; the peritoneum is everywhere thickened, and the bowels adhere together by means of an unnatural growth. The heart is enlarged and softened, and the lungs are filled with tubercles. The principal alterations of structure are in the liver. It is pale, livid, and broken down with the slightest pressure; and on being boiled it will almost dissolve away. When the liver is not pale, it is often curiously spotted. In some cases it is speckled like the back of a toad. Nevertheless, some parts of it are hard and scirrhous; others are ulcerated, and the biliary ducts are filled with *flukes*. Here is the decided seat of the disease, and it is here that the nature of the malady may be learned. *It is inflammation of the liver.* In consequence of this the secretion from the liver is increased—at first scarcely vitiated, and the digestive powers are rendered more energetic; but soon the bile flows so abundantly that it is taken into the system, and the eye, the brisket, the mouth, become yellow. As the disease proceeds, the liver becomes disorganized, and its secretion more vitiated, and even poisonous; and then follows a total derangement of the digestive powers.

The liver attracts the principal attention of the examiner; it displays the evident effects of acute and destructive inflammation; and still more plainly the ravages of the parasites with which its ducts are crowded. Here is plainly the original seat of the disease; the centre whence a destructive influence spreads on every side. Whatever else is found, it is the consequence of previous mischief existing here. Then the first inquiry is a very limited one—the nature of this hepatic affection, and the agency of the parasites that inhabit the liver. *Are they the cause or consequence of disease?*

The Fluke—the *Fasciola* of Linnæus—the *Distoma hepaticum* of Rodolphi—is found in the biliary ducts of the sheep, the goat, the deer, the ox, the horse, the ass, the hog, the dog, the rabbit, and various other animals, and even in the human being. It is from three-quarters of an inch to an inch and a quarter in length, and from one-third

to half an inch in greatest breadth. The head is of a pointed form, round above, and flat beneath; and the mouth opens laterally instead of vertically. There are no barbs or tenacula, as described by some authors. The eyes are placed on the most prominent part of the head. No difference of sex has yet been discovered in the fluke-worm, and it is believed to be an hermaphrodite.

Then, is the fluke-worm the cause or the effect of the rot? To a certain degree both. They aggravate the disease; they perpetuate a state of irritability and disorganization, which must necessarily undermine the strength of any animal; they unnaturally distend, and consequently weaken the passages in which they are found; they force themselves into the smaller passages, and, always simming against the stream, they obstruct the flow of the bile, and produce inflammation by its accumulation; they consume the nutritive juices, by which the neighbouring parts should be fed; and they impede the flow of the bile into the intestines, by clogging up the ducts with their excrement and their spawn. Notwithstanding all this, however, if the fluke follows the analogy of other entozoa and parasites, it is the effect and not the cause of the rot. The ova are continually swallowed by the sound animals and the diseased; but it is only when the fluids are altered, and sometimes essentially changed, and the condition of the digestive organs is materially impaired, that their appearance is favoured, or their multiplication encouraged.

What, then, is the cause of the rot in sheep?

The knowledge of the cause can alone guide us to a cure, or at best, to the prevention of it. It does not arise from deficiency of food; a sheep may be reduced to the lowest state of condition—he may be starved outright, but the liver would not be necessarily as often in a diseased state. It is not to be traced to the effects of sudden flush of grass. The determination of blood to the head, diarrhœa, dysentery, might be thus produced, but not one symptom resembling rot. Some persons, led away by a favourite theory, have traced it to defective ventilation; but in the closest keeping to which the British sheep is usually committed, there is no foul air to be got rid of, and defective ventilation would be words without meaning.

The rot in sheep is evidently connected with the soil or the state of the pasture. It is confined to wet seasons, or to the feeding on ground moist and marshy at all seasons. It has reference to the evaporation of water, and to the presence and decomposition of moist vegetable matter. It is rarely or almost never seen on dry or sandy soils and in dry seasons. In the same farm there are certain fields on which no sheep can be turned with impunity. There are others that seldom or never give the rot.

Some seasons are far more favourable to the development of the rot than others, and there is no manner of doubt as to the character of the seasons. After a rainy summer, or a moist autumn, or during a wet winter, the rot destroys like a pestilence. A return and a continuance of dry weather materially arrests its murderous progress. It is, therefore, sufficiently plain that the rot depends upon, or is caused by the existence of moisture. A rainy season, and a tenacious soil, are fruitful or inevitable sources of it.

But there is something more than moisture necessary for the production of rot. The ground must be wet, and its surface exposed to the air; and then the plants, previously weakened or destroyed by the moisture, will be decomposed; and in that decomposition, certain gases or miasmata will be developed, that cannot long be breathed, or scarcely breathed at all by the sheep, without producing the rot.

Chemistry, even in its present advanced state, will afford no means of analyzing these deleterious gases; and it is a matter of little practical consequence to be acquainted with their constituent principles. Then the mode of prevention consists in altering the character of as much of the dangerous ground as he can, and keeping his sheep from those pastures which defy all his attempts to improve them.

Treatment.—In the early stage of the disease, bleed. Abstract, according to the circumstances of the case, eight, ten, or twelve ounces of blood. There is no disease of an inflammatory character, at its commencement, which is not benefited by an early bleeding. To this let a dose of physic succeed—two or three ounces of Epsom salts; and to these means let a change of diet be immediately added—good hay in the field, and hay, straw, or chaff in the straw-yard.

To this should be added—a simple and a cheap medicine, but that which is the *sheet anchor* of the practitioner here—*common salt.* The farmer is beginning to be aware of the valuable properties of salt in promoting the condition, and relieving and preventing many of the diseases of all the domesticated animals. In the first place, it is a purgative, inferior to few, when given in a full dose; and it is a tonic as well as purgative. Its first power is exerted on the digestive organs—on the stomach and intes-

tines—augmenting the secretions and quickening the energies of each. It is the stimulus which nature herself points out, for, in moderate quantities and mingled with the food, men and beasts are fond of it. The sheep, having a little recovered from the disease, should still continue on the best and dryest pasture on the farm, and should always have salt within their reach. It should be rock salt.—*Morrell's American Shepherd.*

Young Apple Orchards.

It is an indispensable requisite, in all young orchards, to keep the ground mellow and loose by cultivation; at least for the first few years, until the trees are well established. Indeed, of two adjoining orchards, one planted and kept in grass, and the other ploughed for the first five years, there will be an incredible difference in favour of the latter. Not only will these trees show rich dark luxuriant foliage, and clean smooth stems, while those neglected will have a starved and sickly look, but the size of the trees in the cultivated orchard will be treble that of the others at the end of this time, and a tree in one will be ready to bear an abundant crop, before the other has commenced yielding a peck of good fruit. Fallow crops are the best for orchards,—potatoes, vines, buckwheat, roots, Indian corn, and the like. An occasional crop of grass or grain may be taken; but clover is rather too coarse-rooted and exhausting for a young orchard. When this, or grass, is necessarily grown among young trees for a year or two, a circle of three feet diameter should be kept loose by digging every season about the stem of each tree.

When the least symptom of failure or decay in a bearing orchard is perceived, the ground should have a good top-dressing of manure, and of marl, or mild lime, in alternate years. It is folly to suppose that so strong growing a tree as the apple, when planted thickly in an orchard, will not, after a few heavy crops of fruit, exhaust the soil of much of its proper food. If we desire our trees to continue in a healthy bearing state, we should, therefore, manure them as regularly as any other crop, and they will amply repay the expense. There is scarcely a farm where the *waste* of barn-yard manure,—the urine, etc., if properly economized by mixing this animal excrement with the muck-heap—would not be amply sufficient to keep the orchards in the highest condition. And how many moss-covered, barren orchards, formerly very productive, do we not every day see, which only require a plentiful new supply of food in a substantial top-dressing, thorough scraping of the stems, and washing with diluted soft soap, to bring them again into the finest state of vigor and productiveness?—*Downing's Fruit Trees.*

Milk in Boston.—A statement of the quantity of milk brought to Boston over the Fitchburg rail-road, will perhaps interest some. A gentleman, who has the means of knowing, states the quantity to be, on a careful average, at least 900 cans per day. Each can holds four gallons, and weighs about 25 pounds. By quantity, this would give one million twenty-three thousand and two hundred gallons per year, and by weight, three thousand five hundred and ten tons. Heretofore, upon this road, the milk cans have been attached to the passenger trains, but after the 1st of April next, in consequence of the great increase of the business, a special milk train is to be run in the night. The milk is sold chiefly in Boston and Charlestown, at five cents per quart. We believe the only rail-roads that convey milk to any extent are the Fitchburg and Worcester.—*Pa. Inquirer.*

Death of Horses.—Within a few weeks past, Mr. Thomas Craige, whose stable is located in an alley running south of Race street near Broad, has lost six valuable horses, in a very singular manner. Adjoining the stable of Mr. C. is another, occupied by Mr. Ramage, which latter it appears, has been long infested with rats. In order to destroy these troublesome customers, poison has been used in various parts of the building; it was only when the seventh horse of Mr. C. sickened and died, that the cause of their death divulged itself—the infusion of the poison, by the rats, into the feed of the poor animals.—*Pa. Inquirer.*

THE quantity of rain which fell in the 12th month 1847, was ..... 5 78 in.

Penn. Hospital, 1st mo. 1st.

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DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—LIEBIG.

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For the Farmers' Cabinet.

Effect of Different Coloured Lights upon Plants.

MR. EDITOR,—I take the following article from the Scientific American—an excellent paper published in the city of New York.

"The warmth of the sun has comparatively little to do with the specific action of his rays on the chemical functions of the plant, which is illustrated by the experiments of Mr. Hunt of the Royal Agricultural Society of England, on the effect of the rays of light of different colours on the growing plant. He sowed cress seed, and exposed different portions of the soil in which the seeds were germinating, to the action of the red, yellow, green, and blue rays, which were transmitted by equal thicknesses of solutions of these different colours. 'After ten days, there was, under the blue fluid, a crop of cress of as bright a green, as any which grew in full light, and far more abundant. The crop was scanty under the green fluid, and of a pale green unhealthy colour. Under the yellow solution only two or three plants appeared, but less pale than those under the green; while beneath the red a few more plants came up than under the yellow, though they were also of an unhealthy colour. The red and blue colours being now mutually transferred, the crop formerly beneath the blue in a few days appeared blighted, while on the patch previously exposed to the red, some additional plants sprang up.'

"Besides the rays of heat and of light, the sun-beam contains what have been called chemical rays, not distinguishable to our senses, but capable of being recognized by the chemical effects they produce. These rays appear to differ in kind, as the rays of different coloured lights do. It is to the action of these chemical rays on the leaf, associated with the blue light on the solar beam, that the chemical influence of the sun on the growth of the plant is to be ascribed, by the decomposition of the carbonic acid absorbed from the air by the leaf of the plant on the interior of the leaf, the retention of the carbon, and the rejection or omission of the oxygen contained in the carbonic acid of the plant, which is returned to the atmosphere, which carbon retained, uniting with the elements of water—hydrogen or oxygen,—absorbed at the same time by the roots, give rise to and furnish the elements for the formation of woody, cellular fibre, &c., and for which cause it is that '*if light be excluded, vegetation never produces a leaf or a stock.*'

"The decomposition of the carbonic acid contained in the atmosphere, and the emission of oxygen gas from plants, is determined by the solar light, pure oxygen gas is, therefore, separated by the action of light, and the operation is stronger as the light is more vivid. By this continued emission of vital air the Almighty thus incessantly purifies the air, and repairs the loss of oxygen occasioned by respiration, combustion, fermentation, putrefaction, and numerous other processes which have a tendency to contaminate this fluid, so essential to the vigor and comfort of animal life; so that, in this way, by the agency of light, a due equilibrium is always maintained between the constituent parts of the atmosphere."

It will be seen by the above account, that the blue rays contribute very greatly to the growth of plants. This is demonstrated by numerous and definite and well authenticated experiments. Judging from these results, if we place such plants as we desire to cultivate, under glass—as in hot-houses, &c.,—under such glasses as have a blue tinge, we may propagate them more rapidly, certainly, and productively, than in the usual manner. Hot-houses, &c., ought, therefore, to be glazed with blue glass, or else with glass that has been painted blue. If the glass is painted blue, care should be taken that the coat of paint should not be so thick as to entirely exclude the rays of light. A slight coat of very dark blue paint on the common hot-house glass, will, in all probability, be sufficient.

The use of blue glass, or common glass, painted blue, will, if used with good taste, add materially to the beauty of a building in which exotic plants are cultivated, as many varieties of blue are admired by most persons.

A thin dark blue curtain arranged between flower plants and the direct rays of the sun, would perhaps have a favourable effect on their growth. This could easily be done where the plants are grown in parlour windows, &c. I recommend our florists and others to try these experiments, and give the results to the public. I have no doubt of their success. Chemico.

For the Farmers' Cabinet.

Gentle Words.

I have observed that the editor of the Cabinet is not unfriendly to the outpourings of the "Nine," but loves to give his readers occasionally a taste of good poetry. I know not who is the author of the following stanzas—of the first three, I mean. I like the sentiment conveyed in them, but they appeared to me incomplete—the chain of ideas was not extended to embrace the most important link. I have ventured to add a fourth stanza to supply the deficiency—and I make this acknowledgment, that the author, whoever he may be, may not stand obnoxious to the charge of having perpetrated such an offence against the Muses. A.

A young rose in summer time
Is beautiful to me,
And glorious the many stars
That glimmer on the sea:
But gentle words and loving hearts
And hands to clasp my own,
Are better than the fairest flowers
Or stars that ever shone.

The sun may warm the grass to life,
The dew, the drooping flower,
And eyes grow bright and watch the light
Of autumn's opening hour—
But words that breathe of tenderness,
And smiles we know are true,
Are warmer than the summer time,
And brighter than the dew.

It is not much the world can give
With all its subtle art,
And gold and gems are not the things
To satisfy the heart;
But oh, if those who cluster round
The altar and the hearth,
Have gentle words and loving smiles,
How beautiful is earth!

And brighter still, if gentle words
Are whispered in the breast,
By Him whose healing balm can give
The burthen'd spirit rest.
Than gold or gems, or earthly friends,
More precious far are they;—
O then for these all-soothing tones,
Let's listen, day by day.

Gardening on the Bosphorus.

The following notes on the state of Horticulture around Constantinople, were not written for publication; but as they possess much interest, we take the liberty to copy them, knowing that they will be read with much gratification. Messrs. Hovey & Co. have forwarded the writer some of the finest kinds of American pears, apples, and peaches; and we have no doubt but their introduction into the sultan's garden will be the means of extending their cultivation into all the finer gardens on the Bosphorus,—and the Baldwin and Northern Spy apple be better known than even in the gardens of some of the highly civilized portions of Europe.—*Ed. Hovey's Magazine.*

"The sultan, a most amiable and generous person, has an extensive garden attached to his winter palace on the European side of the Bosphorus, as yet but new; and I wish

to furnish it with a few of our American trees, among which I have thought of a few sugar maples,—such as *we* make sugar from in Ohio,—hickory, (shell-bark, &c.), and our black walnut (fir),—there is abundance of what is called the white or English walnut here (regia),—oak, magnolia (that flowers),—I have seen the latter in Ohio, where it is much colder than here,—beech, tulip-tree, sassafras, catalpa, cranberry, &c. All of these, I believe, are wholly unknown here. The poplar, elm, persimmon, horse-chestnut, scrub-green oak, linden, and the usual fruit trees, (none of them very good,) are abundant, and, in the woods, the arbutus is common and very pretty.

"I may mention, that the climate here is very mild. There are snows during our winter, which commences in January and ends in April; but they last but a day or so, and soon melt away. The atmosphere during the winter and spring is *very* damp and chilly, and fires are indispensable. We have no good apples about here, near; but the cherries, plums, (large as hen's eggs, red, blue, and white,) and pears are good; so are the peaches; but neither of the two last are to be compared to ours of the United States. Of course, the grapes are excellent,—generally of a large white kind called *Tehauch* grapes; the large blue are also good, but too fleshy. Figs are also good, but not so abundant as in Smyrna. Almonds grow well here, English walnuts, filberts, chesnuts,—large but not very sweet,—and large strawberries in abundance. Medlars and persimmons grow here; the latter are from Trebizonde on the Black Sea, and *here* bear the name of Trebizonde dates. Among the garden ornamental trees, I may mention the acacia, of two kinds,—the one bearing small yellow flowers of a strong rich odor, and the other producing a light-red flower, like a floss of silk, and is called by the Turks '*Gul Ibrashim*,' or, the 'Rose-silk tassel tree.' The Turks have much taste for flowers, and their summer-houses are much ornamented about the steps with choice flowers in pots, and their gardens look beautiful to the passer-by. My office of interpreter to the legation leads me frequently to these summer retreats, and I cannot tell you how much I admire the taste shown for natural embellishments by those whom the world regards as scarcely half civilized.

"I was last autumn at Erzeroom, not far from the Persian frontier, where I procured a few flower-seeds, among which is the 'Morina Orientalis,' peculiar to that place, and named, by the French traveller Tournefort, after a friend in Paris. I have sent some of the seeds to the American Oriental Society, of your city, of which I am a member, for the Horticultural Society. I have some fruit kernels, and other seeds, which I will send you from Smyrna, with a few of this same Morina, and I beg you to try it. The climate of Erzeroom is cold, and the soil, where it grows, poor and stony; and on that side near its base, there is a beautiful crimson flower, the stalk about two feet and a half high. It is an annual. I will try and procure for you some cherry seeds from Cerassum, the country on the shores of the Black Sea, from which place cherries are said to have their origin. I do not hope to furnish you with any thing *better* than you already possess, but to give you some *varieties*.

Yours, J. P. B.,

Legation of the United States of America.

Constantinople, Oct. 8. 1847.

On the Blight of the Pear Tree.

It seems to have been taken for granted, by many persons, that the pear tree is subject only to one kind of blight. Hence have arisen the conflicting theories and speculations that have been published on this subject. Having no theory to maintain, and no speculations to offer, but such as are founded on facts, I propose to show that *insect-blight* is a disease distinct from *fire-blight* and *frozen sap-blight*.

By the term *insect-blight*, as here used, must be understood the sudden withering of the leaves, and the death of the limbs of the pear tree in summer, occasioned by the internal attacks of one or more of the insects, called *Scolytus Pyri* by Professor Peck. This kind of blight is common in New-England; but it does not appear to exist, or to have been observed, in the western states, where, however, blights of the pear tree, somewhat similar in progress, and equally fatal in termination, prevail more or less every year. Blights, which are not the result of insect attacks, inasmuch as insects have never been detected in the blighted limbs, occasionally affect pear trees in New England. Some of my own trees have been thereby destroyed; and the most careful examination has failed to disclose any trace of insect depredation in them. On the other hand, numerous opportunities for seeing the effects of insect blight, and of dissecting specimens of *Scolytus Pyri* from the blighted limbs, enable me to declare confidently that the diseases are specifically distinct from each other; as much so as small-pox and measles. It is not my purpose to discuss the question, whether fire-blight and fozen sap-blight, or winter-blight, be identical; the contrast between them and insect-blight being what is now to be attempted.

The effects of insect-blight begin to appear in June, and continue through July; but the foundation of the disease may be traced to the operations of the parent insect during the previous summer. If all the limbs that were killed by insect-blight in the summer of 1847, could have been examined during the latter part of the summer of 1846, there would have been found insects in them, in the larva or grub state, eating their way from the buds, where the eggs were deposited, inwards, through the bark and sap wood. These insects continued the work of destruction till the following spring, when they were transformed to beetles, and finally came forth from their burrows. The insects, therefore, preceded the appearance of the disease nearly a twelvemonth; from which follows the inevitable conclusion, that the blight of the limbs was the natural consequence of their previous attacks.

To suppose that the female *Scolytus Pyri*, by anticipation, deposits her eggs only on those limbs which are to become affected by fire-blight, or by frozen sap-blight, is unwarrantable; because none of these insects have been found in limbs that have perished by these kinds of blight, and consequently none could have existed in them during the previous summer. Hence, it follows that these blights are not caused by the attacks of *Scolytus Pyri*.

Observation sufficiently proves that this insect attacks young and thrifty trees, exhibiting no visible signs of disease or decay. As the young *Scolytus* is found in limbs that were apparently in a thrifty state during the previous summer, the parent insect, though not indued with the power to foresee frozen sap-blight during the following winter, or fire-blight the next summer, must have had some instinctive perception of the nature and actual condition of the tree on which she deposited her eggs; and, in performing this act, she would not have been left to blind chance. As the *Scolytus* lays her eggs on sound and thrifty limbs, it follows that she does so from choice; and, hence, it is fair to conclude that she would not voluntarily lay her eggs on unhealthy or diseased limbs, so long as she could find those that were healthy. Therefore, the opinion is untenable that the insects, found within the diseased limbs of the pear tree, are not the cause of the disease, but that they are attracted thither by the previous existence of the disease.

It should be remembered that the *Scolytus Pyri* requires a year, or thereabouts, to complete its transformations. In those limbs that perished by insect-blight in the summer of 1847, the seeds of the fatal disease were sown by the parent *Scolytus*, in the summer of 1846. Those limbs that perished by fire-blight during the last summer, according to the theory of Mr. Cox and Mr. Ernst, must have been sun-struck during the same summer. Those limbs that perished by frozen sap-blight, according to the theory of Mr. Beecher, had their death blow dealt to them during the previous winter. If the theories advanced by the above named gentlemen be correct, as to the time of attack, the specific difference in these three cases of disease is obvious. The occurrence of the insects in limbs destroyed by fire-blight, or frozen sap-blight, would be an exception to the natural order of things. But, even on the unproven and unnatural supposition that insect-blight might, for a time, coexist with other blights, it is evident that the attack of the insects must have preceded the disease. Insect-blight, therefore, differs essentially and specifically from fire-blight and frozen sap-blight, in origin and duration.

"What can we reason but from what we know."

Had the history of the *Scolytus Pyri* been well known and duly considered, the blight produced by the attacks of the insect would never have been mistaken for fire-blight, or frozen sap-blight. The mistake has arisen from taking too much for granted, and from not considering the possibility or probability that diseases, having some symptoms in common, and alike ending fatally, might be really and essentially distinct from each other.

It may not be generally known that apple, apricot and plum trees are attacked by the *Scolytus Pyri*, though less frequently than pear trees. In the latter part of May, 1843, a piece of the limb of an apple tree, affected by the *Scolytus*, was brought to me for examination. It was twenty-eight inches in length, and three quarters of an inch in diameter at the lower end. Its surface bore the marks of twenty buds—thirteen of which were perforated by the insects; and, from the burrows within, I took twelve of the blight-beetles in a living state; the thirteenth having previously been cut out. In July, 1844, I took one of these beetles on a plum tree; and, in August following, I found a large number of them in some pieces of a blighted branch of the apricot.

To check the increase of this kind of insect-blight, it is not enough to cut off the infected limbs. The insects contained in these limbs must be destroyed; for, if they are suffered to make their escape, they will certainly continue to propagate the disease. To make sure of the destruction of the insects, every limb affected by them should be

cut off and immediately burned, as soon as the existence of the disease is discovered.

THADDEUS WM. HARRIS.

I am, dear sir, yours very truly,

Cambridge, Mass., Jan. 7, 1848.

Cranberries.

THE experiment of Capt. Winthrop Low of Essex, is one of great interest. It establishes the fact, so far as it can be done in one year, that cranberries may be raised in perfection, upon a dry upland soil, without artificial watering or the use of loam. The soil selected by Capt. Low was, most of it a sandy loam. It was perfect Indian corn land. The soil is porous, and would not retain water even if the ground were level. But it must be remembered, that in no part of the field can the water stand so as to keep the roots *saturated* any considerable time together. A small rill of water indeed passes through the field, but confined to a width not exceeding five feet, and usually not more than one foot.

As evidence of the completely upland nature of the soil, it may be stated that a row of white beans was planted between every two of cranberry vines, and although it has not been a good year for white beans, Capt. Low has harvested nine bushels from the one hundred and twenty rods, a fact, showing also, that the land is not lost to the cultivator even the first year, indeed that the bean crop has defrayed a large part of the expense.

The cranberry vines had put out runners in many cases from three to four feet long, and have all the marks and numbers of health and vigour. Sand was applied to about one half of the hills, but without any apparent advantage whatever. The attention of the committee was called particularly to this fact, because the experiments in Barnstable county seem to have been all made with sand, and it is there thought and declared to be indispensable.

There was no artificial watering. The cranberry sods were taken up, as appears by the statement below, on the 15th of May, and set out on the 16th, 18th and 19th. There was in that month (May) but two and seven-eights inches of rain. It could not have been the presence of water then, that caused every root without a single failure to live, and nearly every one to produce berries.

It should be borne in mind, however, by way of caution, that there has been more wet weather during the last six months, than the average of the previous four years, or indeed any of them. The whole quantity during the months of May, June, July, August, September and October last, is 25 3-4 inches; while during the same months in 1846, there was but 15 7-8 inches; though in 1845 the quantity was as great as this year, wanting 2 1-2 inches.

It should be recollected too, that this is the first year, and what the effect of the winter will be without the *indispensable presence of water*, as the Yarmouth Register would say, remains to be seen. At present the vines flourish like a green bay tree, and this, perhaps, is enough for the committee to say. The fact that the roots could be taken dripping from their native meadow bed, on the 15th day of May, put into a cornfield soil, and then with nothing but the rain of heaven upon them, in five short months to take root downward, and bear fruit upward, is most extraordinary.—*Mass. Ploughman.*

For the Farmers' Cabinet.

Agricultural Society of Newcastle County, Del., Hares Corner, Exhibition Ground, October 15th, 1847.

To the Committee on Open and Under Draining:

GENTLEMEN, — Draining is a subject of great importance to the agriculturists of this State, of which no notice has hitherto been taken by this Society. There is no State in the Union, except it may be Louisiana, in which more draining has been done, or where it has been attended with greater success than in Delaware. A great portion of the eastern, or Delaware front, of Newcastle county, from Naaman's Creek to Bombayhook, was formerly marsh, which has been reclaimed by embankments at great cost. These embankments are in some instances full twenty-four feet wide at the base, and six to eight feet high, sloping from the river side at least a foot and a half to one foot in height, and about one foot to one and a half on the land or inside; leaving the top about four feet wide. The earth for the construction of these embankments is generally taken from the outside, from ditches or pits cut perpendicular to the embankments—of length and depth, so as to afford a sufficient quantity of earth for that purpose. Great precaution must be taken when first locating these embankments, to set them sufficiently back from the river, that the growing reed may be a protection against the storms. Where they are exposed to the beating surf, they must be protected by heavy stone walls. Sluices of masonry or wood, of a capacity to vent all back water, should be constructed previously to putting up the outside embankments; and so ought the leading drains or

main open ditches. Several thousand acres of prime meadow now in good condition, are being grazed with fat cattle for the shambles of Wilmington, Philadelphia and New York. Besides which many dairies for milk, butter, and cream for the ice-cream saloons of Wilmington, Philadelphia and Baltimore. These meadows when thus improved, sell from 20 to $200 per acre, according to quality and facility for reaching market. For grazing purposes they are particularly well adapted. I was informed by John Ball, formerly an agent of Martin Dubbs, late of Philadelphia, that they fed twenty-four bullocks on only twenty-five acres on the St. George's meadows, near Port Penn, which cattle cost $40 and sold for $90 when fat, netting near $50 clear profit to the acre. The neatest and best arranged of these marsh farms that I have seen for a long time, was Long Island, owned and occupied then by John Barney, late of Philadelphia. It was then far more beautiful and profitably cultivated than was ever that of Blannerhassett, (situated as it is at the head of the broad and beautiful bay of Delaware, where in the hottest day of summer a sea breeze can always be enjoyed,) in the most palmy days of its proprietor. There is much other marsh yet in its wild state on Appoquinnimink, Black Bird, and Duck Creeks, in Newcastle, as well as on the creeks in the lower counties of Kent and Sussex, that might be equally well improved and profitably employed. The numerous steamboats now plying on the bay and inlets, add greatly to the advantages of marsh owners, as well as to the upland owner, as a quick, safe and cheap mode of conveying their several products to market.

In Kent and Sussex, besides some well improved river marsh meadows on the creeks leading up from the river, the western border of the State has much flat land, that has been brought into profitable cultivation by open ditches of great extent. This draining both in the interior and on the Delaware front of the State, is done by chartered companies. In one of these,—(the Marsh Hope, or Tappahanock, I am not sure which, companies;)—the ditch is near twenty miles long, varying in width from six to twenty-four feet, and from two feet at the upper part to sufficient depth to vent the water. These lands when once well drained, are equal in fertility with the lands of the great American bottom of Illinois, the *Eldorado* of the West, and are as well adapted to the growth of corn, rye, grass, &c. I was shown a field near the village of Vernon, a few weeks since, which my informant, Mr. Thorp, told me had been in corn for more than twenty years in succession without being manured, and was then supposed by some to yield fifty bushels of corn to the acre. His Excellency Gov. Thorp informed me, that he had gathered ninety-six bushels of corn from an acre of his meadows, which is pretty much the same quality as many of those reclaimed flat lands. The draining of these lands adds much to the beauty and health of the country and neighbourhood in which they lay, as well as to their wealth. Within a few years, many farmers of Newcastle county, have greatly beautified and increased the value of their lands, by under-draining. Amongst the most prominent that have come under my observation and notice, are Arley Lore of Appoquinnimink, W. J. Hurlock, Major Reybold, Dr. C. Noble, D. Veasey, J. L. Clayton, John Gregg and Bryan Jackson. Besides these, many others of whom I have no knowledge, have also availed themselves of this mode of improving their wet lands.

The most extensive and perfect experiment that has come under my notice, and to which I wish to call your attention particularly, is that of Bryan Jackson, who has some 4 or 5000 feet of perfect miry unsightly bog beautifully reclaimed. The process which he adopted was first to open a main and open ditch through or near the centre of the low lands, designed to be reclaimed, some four or six feet wide, and two to three feet deep, or of sufficient width and depth to carry off all rain and other surplus water. Into which open or main drain all his under-drains lead. The covered drains are started at the lowest part of the land designed to be drained by this process, at the main ditch, running perpendicular thereto, and extending as far into the fast land as to head off the springs; then following up the fast land in a general direction, parellel with the main open drain, taking care to head all *springs* carrying the bottom of the *main covered land drain* to a depth as nearly level with the bottom, of the main *open drain*, as to give a gradual descent —the slower the better so as to lead off all spring water. To lead off the water from the main covered or land drain, he has cut cross drains, from it to the open main drain, in a direction somewhat down stream, and at distances from each other sufficiently to completely drain the land. Some parts of the main covered drain on either side of the cripple, was cut full five feet deep. The drains were formed as far as I saw them, by three boards, one of which was laid flat on the bottom; the other two, after being cut so as to fit, are placed on their edges and brought together at the top, forming a triangular drain. The

top boards of the lowest part of these drains, were near two feet below the surface.

The whole of this work appears to have been done very similar to the plan laid down in Stephens' Book of the Farm, as now being republished in Skinner's Farmer's Library. By this mode of improvement in a few short months, an unsightly, and otherwise useless and unhealthy bog is reclaimed, the land cleared off and ploughed, and now the wheat is growing most luxuriantly. Recently, hollow tiles for under-drains have been used by some, and they bid fair to come into general use. They are about twelve or thirteen inches long. They are made in Cecil county on the farm of David Taylor, and sold at $11 per thousand. Mr. Taylor, who is a neighbour of mine, and lives on the Maryland side of Mason and Dixon's line, has several thousand feet of drain made with those tiles. Tiles for the purpose of draining are made in Wilmington, I think by W. Lovel. The cost of under-draining sunk sufficiently below the reach of the plough, say eighteen inches, costs 25 cts. per rod, exclusive of materials, whether of tile or plank.

From all that I have seen of draining, I think Bryan Jackson's is the best done, and if others think so, he will be deservedly entitled to the premium.

This is a subject which I think of great importance to the people of this state. Every acre of waste land that can be and is so reclaimed, is just so many acres added to our territory; and besides this, it adds to the beauty, health and wealth of the state.

Respectfully and truly yours,

J. Jones.

Communicated for the Farmers' Cabinet.

Suggestions which may assist in deciding whether Manures are more efficacious when "ploughed in," or used as a "top-dressing."

By Dr. Hare, Emeritus Professor of Chemistry in the University of Pennsylvania.

Communicated verbally, at a meeting of the Philadelphia Society for promoting Agriculture, on the 2nd inst.

It has been a question whether manures are prone to rise or descend, and consequently whether it be better to employ them as a top-dressing, or to turn them under the soil by the plough. Before discussing this question, it would seem expedient to consider the meaning of the word manure, originally derived from manus, which is the Latin word for the hand. Evidently the word manure may mean anything which the hand of man may so associate with a soil as to increase its fertility. Compounds, or aggregates, which have this qualification, owe their efficiency either to ingredients which they contain, or to products which they generate by fermentation, by a gradual union with the oxygen of the air, or reaction with other bodies previously existing in the soil or the atmosphere. The gradual union with the atmospheric oxygen is also called oxidation, slow combustion, or *eremacausis;* the last mentioned name has lately been given by Liebig, from Greek words of similar import. The word *rotting*, is ordinarily applied to the changes thus more scientifically designated. Among the results of the processes thus alluded to, are various carbonaceous products called *mould*, or more scientifically, *humus* or *geine*, with certain acids alleged to result from the latter. There also results ammonia and carbonic acid, which having a great tendency to combine with each other, are usually united, forming, of course, carbonate of ammonia: add to these sulphates, carbonates, and phosphates, either of potash, soda, lime, or magnesia, with free silicic acid, exemplified in its perfectly pure state by rock crystal: oxides of iron likewise are universally present, and together with charcoal, may contribute to fertility by attracting ammonia. Surely no chemist can, in allusion to this list of reagents, conceive them all, or any one of them, as prone invariably either to rise into the air or to descend into the soil. Either carbonic acid or ammonia, when free, would escape into the air, and when united as a carbonate, are still volatile. Yet either may be mixed or combined with the other ingredients of the congeries called earth. Ammonia especially unites with the aluminous or clayey portion into which it is carried by rain. Carbonic acid combines with water, and so does sulphuric acid. But whether united with water only, or with various bases, as, for instance, those of soda, potash, or lime, either are more or less soluble, and must tend to descend with water, unless arrested by absorption or decomposition. The earthy manure, such as slaked lime, carbonate of lime, phosphate of lime, silex and silicates, form a part of the soil, and of course are not likely to descend or to rise, their reciprocal coherence being much more powerful than any counteracting influence arising from difference of specific gravity, causing one to subside relatively to another. Enough has been said to show, that both ammonia and carbonic acid are less liable to be lost when liberated under a covering of moist earth, the clay of which has an affinity for ammonia, while the water attracts both.

Circumstances, however, must greatly vary the consequences of using manure as a top-dressing. The volatile portion, for which alone a covering of soil is desirable, arises, as above stated, from rotting, or *eremacausis;* and these changes take place more rapidly in proportion as heat and a *due* degree of moisture are supplied. Hence it follows, that during winter volatile products cannot be generated. Moreover, a top-dressing in winter may lie so long without losing any part of its virtue by fermentation, that by rains and alternate freezing and thawing, much of any manure consisting of dung, may be broken up; and impelled by the rain and its own gravity, may subside into fissures made by the frost, so that, when the warmth of the spring and summer sun comes to act upon the ground, the volatile matter may be yielded without so much exposure as to permit of its being carried away by the wind.

But again, diversity of inclination may cause the result to vary, as respects different fields. A hill side being frozen, the rain may carry off from it the manure by a mechanical force which, upon a horizontal plain also frozen, would not have this effect. The soluble portions of a manure would likewise be more liable to be washed away from the former than from the latter.

I have adverted to the fact, that a due degree of moisture is requisite to the processes of decomposition, by which some of the most fertilizing products of manure are generated. Moisture is almost invariably indispensable to fermentation, as well as any other process of organic decay or decomposition. There is no such thing as an absolutely "*dry rot.*" Well seasoned timber, in buildings where it is kept perfectly dry, lasts for ages. It is equally well known, that under water, wood has an unlimited durability. Of course a very moist, or a very dry season, must check the fertilizing emanations from manure.

In consequence of the difference of climate, it must be evident that a winter top-dressing is not likely to answer equally well in different latitudes, even when other things are equal.

Of course it will always be a question, how far the expense of ploughing and harrowing can be compensated by the greater efficacy which may arise from the soil being turned over the manure. It is obvious that the value of the sod is an important consideration where an old pasture is in question.

Agreeably to Liebig's recent views, as stated by Professor Horsford in a letter to Dr. Webster, the inorganic part of manure is that which is mainly important; so that the ashes of a load of dung would be as fertilizing as the whole, when spread upon the ground in its natural state. This seems to me an ultra doctrine, though I lean to his view of the subject. But if that view be correct, the volatile portions of manure being of secondary importance, there can be little motive for ploughing it under in order to prevent volatilization.

Feeding Stock.

A man who was noted for the excellence of his working oxen, once observed to the writer that he could seldom hire a man who was "fit to drive a yoke of good oxen to water." We think it is quite as difficult to find a man who is capable of *feeding* cattle or stock in a proper manner. There is generally a great deal of unnecessary waste. Some men will carry stock through the winter with half the quantity of hay or fodder that others will use, and yet the stock which has consumed least, will come out in the best order. To feed economically, the animal should have just the quantity he requires and no more—none should be given to be trampled under foot and left, unless it is intended for manure, without being first eaten. It is best, generally, to feed under cover, in clean mangers; though in dry weather coarse fodder, or that of an inferior quality, may be fed in mangers in the barn-yard, or on dry hard ground, or clean, hard snow. Coarse hay, clover and timothy (herd grass,) and corn stocks, had better be passed through a cutting machine, and if some bran, shorts, or a little meal can be added, the improved quality of the whole will render it much better relished by the animals, and they will, in their increased flesh or milk, repay the cost.

A good food for work-horses or oxen, is cut hay, with from three to six quarts of corn meal per day—regulating the quantity according to the degree of labour to be performed. Oats and corn ground together make a good provender. Moisten the hay, and mix the meal with it. If the labour is not severe, two quarts of meal with the hay, and the addition of a peck of carrots per day, will keep the horse in good condition. The carrots are good for the blood, and will improve the horse's health. Carrots are also valuable for milch cows—increasing the quantity and improving the quality of the milk.—*Exchange paper.*

During the month of December 5339 tons of ice were exported from Boston, of which 1782 tons were exported to foreign ports, and the balance to New Orleans and Mobile.

From the Horticulturist.

Profits of Fruit Culture.

HAVING seen in a late number of the Horticulturist, an account of a cherry tree that produced ten dollars worth of fruit in one season, permit me to give a chapter of facts on fruits, most of which are within my own personal knowledge.

C. A. Cable, of Cleveland, has an orchard of an hundred cherry trees, now twenty-two years old. In the year 1845, his crop sold for upwards of one thousand dollars. Mr. C. manages his orchard better than any other person in the Union, so far as my knowledge extends. The trees are planted out twenty-five feet apart, the ground kept properly enriched and cultivated, but no crop is put in.

Elisha Swain, of Darby, near Philadelphia, has the remains of a cherry orchard, numbering seventy trees, mostly of the Mayduke variety. In the height of the season, his sales amount to upwards of $80 per day. Mr. S., to ensure a good crop every season, digs in a horse-cart load of manure to each tree in autumn.

Hill Pennell, of Darby, has twenty apple trees, of the early Redstreak and Early Queen varieties, that stand on half an acre of ground. In 1846 these trees produced three hundred bushels of fruit, that sold in Philadelphia market for 75 cents per bushel, or $225 for the crop.

Mr. Pennell has a grape vine of the Raccoon [Fox grape] variety, that covers the tops of fourteen apple trees. It has never been pruned, but produces 75 bushels of grapes yearly, that sell for $1 per bushel. The apple trees produce good crops of fruit, and under the trees is produced a crop of grass; thus making three crops from one lot of ground.

James Laws, of Philadelphia, has a Washington plum tree, that produces six bushels of fruit yearly, that would sell in market for ten dollars per bushel. Five of the above plums weigh a pound.

Mr. Laws has a small vineyard of Isabella and Catawba grapes, near Chester, sixteen miles below Philadelphia, three-eighths of an acre of which came into bearing in 1845. The sales amounted to three hundred dollars at eight cents per pound, or at the rate of eight hundred dollars per acre from vines only four years old.

Brinton Darlington, of West Chester, Pa., has a Catawba grape vine, that produces ten bushels of grapes yearly. This crop is worth $40 at market price.

Jacob Steinmetz, of Philadelphia, has a Blue Gage plum tree, that produces ten bushels of fruit in a season, worth in market, $30.

My friend, *Ellwood Harvey*, Chaddsford, Pa., the present season, gathered thirteen quarts of gooseberries from one plant.

A gardener near Philadelphia, has two rows of gooseberry plants one hundred and fifty feet long. One afternoon he gathered with his own hands, six bushels of fruit, and the next morning sold them in Philadelphia market for $24.

A gentleman of Philadelphia having two apricot trees that produced more fruit than his family could consume, concluded to send the balance to market, and expend the money it would bring in purchasing wood for the poor. The amount thus sold for the benefit of the poor was $40.

Judge Line, of Carlisle, Pa., has had two Syrian apricot trees that have produced five bushels to each tree in a season. In the Philadelphia market, they would have commanded $120, in the New York market, $140.

Hugh Hatch, of Camden, N. J., has four Tewksbury Winter Blush apple trees, that in 1846 produced one hundred and forty market baskets of apples. Without any extra care, ninety baskets of these were on hand late in the spring of 1847, when they readily sold at $1 per basket.

The following facts relative to fruit growing near the North river, I have never seen published. Three years ago, Mr. Charles Downing, of Newburgh, N. Y., informed me that a fruit grower of his acquaintance in Fishkill Landing, N. Y., had gathered fifteen barrels of Lady apples from one tree, and sold them in New York for $45. The same gentleman you speak of, in your Fruits and Fruit Trees of America, as having sent to New York sixteen hundred bushels of plums in one season, has sent to New York apricots and received $14 per bushel for them. The above gentleman has often said that his plum trees, which are set out about the buildings, and take up but little room, pay him more profit than the whole of his valuable farm of two hundred acres. Another fruit grower in your neighbourhood, has sent four hundred bushels of Frost Gage plums to market in one season, and received $1200 for them.

Yet with all these facts before us, there is no full supply of any kind of fruit in the Philadelphia market, except peaches. Many farmers and gardeners neglect setting out fruit trees from a natural negligence; others dislike to pay fifty cents for a fine plum tree; others again are afraid that every body will go to fruit growing, and bring down the price to almost nothing. But we would ask, if there is any more danger of everybody com-

mencing on a large scale the culture of fruit, than there is that everybody will commence the raising of onions, or the making of razor strops, or the cultivation of roses?

Yours, etc., B. G. Boswell.

Philadelphia.

Chinese Agricultural Population.

There are few sights more pleasing than a Chinese family in the interior, engaged in gathering the tea leaves, or indeed in any of their other agricultural pursuits. There is the old man, patriarch-like, directing his descendants, many of whom are in their youth and prime, while others are in their childhood, in the labours of the field. He stands in the midst of them, bowed down with age. But to the honour of the Chinese, as a nation, he is always looked up to by all with pride and affection, and his old age and grey hairs are honoured, revered and loved. When, after the labours of the day are over, they return to their humble and happy homes, their fare consists principally of rice, fish and vegetables, which they enjoy with great zest, and are happy and contented. I really believe that there is no country in the world, where the agricultural population are better off than they are in the north of China. Labour with them is a pleasure, for its fruits are eaten by themselves, and the rod of the oppressor is unfelt and unknown.

I was one day travelling amongst the hills in the interior of the island of Amoy, in places where I suppose no Englishman had ever been before. The day was fine, and the whole of the agricultural laborers were at work in the fields. When they first saw me, they seemed much excited, and from their gestures and language, I was almost inclined to think them hostile. From every hill and valley, they cried, "*Wyloe-san-pan-fokie*," that is, "Be off to your boat, friend;" but on former occasions I had always found that the best plan was to put a bold face on the matter, and walk in amongst them, and then try to get them into good humor. In this instance the plan succeeded admirably; we were in a few minutes excellent friends, the boys were running in all directions gathering plants for my specimen box, and the old men were offering me their bamboo pipes to smoke. As I got a little nearer to the village, however, their suspicions seemed to return, and they evidently would have been better pleased had I either remained where I was, or gone back again; this procedure did not suit my plans, and though they tried very hard to induce me to "*wyloe*" to my "*san-pan*," it was of no use. They then pointed to the heavens, which were very black at the time, and told me it would soon be a thunderstorm—but even this did not succeed. As a last resource, when they found I was not to be turned out of my way, some of the little ones were sent on before to apprise the villagers of my approach, and when I reached the village every living thing, down even to the dogs and pigs, were out to have a peep at the "*Fokie*." I soon put them all, the dogs excepted—which have the true national antipathy to foreigners,—in the best possible humor, and at last they seemed in no hurry to get rid of me. One of the most respectable amongst them, seemingly the head man of the village, brought me some cakes and tea, which he politely offered me. I thanked him, and began to eat. The hundreds who now surrounded me were perfectly delighted; "He eats and drinks like ourselves," said one. "Look," said two or three behind me, who had been examining the back part of my head, "look here, the stranger has no tail!" and then the whole crowd, women and children included, had to come round and see if it was really a fact that I had no tail. One of them, rather a dandy in his way, with a noble tail of his own plaited with silk, now came forward, and taking off a kind of cloth which the natives wear here as a turban, and allowing his tail to fall gracefully over his shoulders, said to me in the most triumphant manner, "Look at that!" I acknowledged that it was very fine, and promised if he would allow me to cut it off, I would wear it for his sake. He seemed very much disgusted at the idea of such a loss, and the others had a good laugh at him.—*Fortune's Wanderings in China.*

For the Farmers' Cabinet.

Floors of Porticos.

Mr. Editor,—Will some of your scientific correspondents have the goodness to give information on the following subject, in which many of your readers are interested. Is there any substance or material, economical and durable, that would answer to cover the *floors* of porticos and piazzas, so as to be impenetrable by water and unchanged by the action of the atmosphere. A floor of boards tongued and grooved is not so, as the boards, though dry when put on, will change, swell and shrink, with the changes of the weather. Further, it is ascertained by experience, that the joints, after being puttied and painted, will, after a spell of wet weather, close and force out the putty; and the joints, after the boards again shrink, will be left open for the admission of water at the first dashing rain, to the injury of the ceil-

ing underneath, or perhaps things in the cellar, which are often put under porticos. It is desirable to know some cheap material, which, if put on the board floor, would answer the object desired—imperviousness to water as well as durability. Many substances have been suggested, yet not free from objections. Muslin or canvass spread over and well painted;—this, however, is considered too temporary. Tin or zinc have been suggested, but these would be too expensive when a large surface was to be covered, while at the same time they would be no effectual protection. Is there any form of caoutchouc that would answer the objects desired? If not, what else? Will the chemist or the scientific give the information, for which many will be grateful?

A FARMER.

Chester co., January 25th, 1848.

Geography and History of the Apple.

THE Pyrus malus, or some of its varieties, grows spontaneously in almost every part of the northern hemisphere, except in the torrid and frigid zones, and some of the islands in the ocean. It is found throughout western Asia, China, Japan, North America, and in the north of Europe, as far as West Finland, in latitude 62°; in Sweden, in latitude 58° or 59°; and central Russia, to 55° or 60°. The crab of Europe, however, is wanting in Siberia, where its place is abundantly supplied by the P. m. prunifolia, and the P. m. baccata. In Britain, Ireland, and North America, the common apple-tree occurs wild, in hedges, and on the margins of woods. It is cultivated for its fruit, both in the temperate and transition zones of both hemispheres, even in the southern parts of India, on the Himalayas, and in China and Japan.

That the apple tree is a native of the eastern part of the world, we have the authority of the earliest writers in "Holy Writ," as well as of the naturalists of ancient Greece and Rome. The prophet Joel, where he declares the destruction of the products of the earth, by a long drought, mentions the fruits which were held in high estimation, and among them, he names the apple.

"The vine is dried up, and the fig tree languisheth; the pomegranate-tree, the palm-tree, also, and the apple-tree, even all the trees of the field are withered."—*Joel* i. 12.

Apples are also mentioned by Theophrastus, Herodotus, and Columella; and the Greeks, according to Pliny, called them *Medica*, after the country whence they were first brought, in ancient times; but others conjecture that the term "Medica," was more probably applied to the citron and the peach, both of which are supposed to have been introduced from Media into Greece. That the *Epirotica*, from Epirus, were what we call apples, there can be no doubt; as they are described by Pliny, as a fruit with a tender skin, that can easily be pared off; and besides, he mentions "crabs," and "wildings," as being smaller, "and for their harsh sourness they have many a foul word given them." The cultivated apple, however, probably was not very abundant at Rome, in his time; for he states that, "there were some trees in the villas near the city, which yielded more profit than a small farm, and which brought about the invention of grafting." "There are apples," continues he, "that have ennobled the countries from which they came; and our best varieties will honour their first grafters forever; such as took their names from Matius, Cestius, Manlius, and Claudius." He particularizes the "quince apples," that came from a quince grafted upon an apple stock, which smelled like the quince, and were called *Appiana*, after Appius, of the house of Claudius. It must be confessed, however, that Pliny has related so many particulars as facts, concerning the apple—such as changing the fruit to the colour of blood, by grafting it on the mulberry; and the tree in the Tyburtines country, "grafted and laden with all manner of fruits," which are regarded by modern grafters as physiological impossibilities,—it would seem that very little confidence could be placed in his statements of any kind. But what reason have we to doubt the authority of a man, whose life was spent to the benefit of mankind, and whose death was caused by his perseverance in search of truth? Instances of grafting trees of different families upon one another, are also mentioned by other old authors, and even our Evelyn, of more recent times, states that he saw, in Holland, a rose engrafted upon the orange. Columella, a practical husbandman, who wrote some years before Pliny, describes three methods of grafting, as handed down to him, by whom he calls the "ancients," besides a fourth method of his own, and a mode of inarching, or grafting by approach, "whereby all sorts of grafts may be graffed upon all sorts of trees." It would appear, however, that the art of grafting, at the period in which he flourished, was comparatively a modern invention, as it is not mentioned by Moses, in his directions to the Israelites when they

"* * * * * shall come into the land, and shall have planted all manner of trees;"

neither by Hesiod nor Homer, although

forming a part of the subjects on which they wrote.*

Whitaker, in his "History of Manchester," conjectures that the apple was brought into Britain by the first colonies of the natives, and by the Hædui of Somersetshire in particular; hence Glastonbury was distinguished by the title of "Avellonia" or apple orchard, previously to the arrival of the Romans. Before the third century, this fruit had spread over the whole island, and so widely, that, according to Solinus, there were large plantations of it in the "Ultima Thule." The manufacture of wine from the apple, appears to have occurred in Norfolk, at the beginning of the thirteenth century; for it is stated by Bloomfield, that, in the sixth year of King John, (1205,) Robert de Evermere was found to hold his lordship of Redham and Stokesly, in Norfolk, by petty sergeantry, the annual payment of two hundred pearmains, and four hogsheads of wine of pearmains, into the exchequer, at the feast of St. Michael. The making of cider was introduced into Britain by the Normans, who, it is said, obtained the art from Spain, where it is no longer practised. This liquor is supposed to have been first known, however, in Africa, from its being mentioned by the two African fathers, Tertullian and Augustine, and was introduced by the Carthagenians into Biscay, a province unfriendly to the vine, on which account it became the substitute in other countries.

Many of the better varieties of the apple were probably introduced into Britain from the continent, as the greater part of their names are either pure or corrupted French. Thus the "Nonpareil," according to old herbalists, was brought from France by a Jesuit, in the time of Queen Mary, and first planted in Oxfordshire. On the other hand, the celebrated "Golden Pippin" is considered as of British origin; and is noticed as such by French and Dutch authors. It is described by Du Hamel under the name of "Pomme d'or," "Reinette d' Angleterre," and "Grosse Reinette d' Angleterre." Pippins were probably very little known in England until towards the close of the sixteenth century. Fuller states that one Leonard Maschal, in the sixteenth year of the reign of Henry VIII., brought them from over sea, and planted them at Plumstead, in Sussex. They were called pippins, because the trees were raised from the *pips* or seeds, and bore the apples which gave them celebrity, without grafting.

The fine cider orchards of Herefordshire began to be planted in the reign of Charles I. The adaptation of the trees to the soil was soon discovered, and they spread over the face of the whole country. The cider counties of England lie something in the form of a horse-shoe, round the Bristol channel, the best of which are in Worcester and Hereford, on the north of the channel, and Somerset and Devon on the south. Of the varieties of the cider apples, the "Redstreak," and the "Sline," were formerly the most prized; and the cider of these apples, and the perry of the "Squash Pear," were celebrated throughout the kingdom. Some of the orchards occupy a space of forty or fifty acres, the produce of which is very fluctuating, and the growers seldom expect an abundant crop oftener than once in three years; and in a good year, an acre of orchard will produce about six hundred bushels of fruit.

The introduction of the common apple tree into the North American colonies, dates back to the earliest periods of their settlements. In the middle, northern, and some of the western States, no branch of rural economy has been pursued with more zeal, and few have been attended with more successful and beneficial results, than the cultivation of orchards. It was not undertaken on an extensive scale, however, until about the commencement of the present century, when experience had taught the hardy yeomanry of the soil, that "the moderate use of cider, as a common beverage, was highly conducive to sound health and long life." It appears from Dodsley's London "Annual Register," that in the year 1768, the Society for promoting Arts, &c., at New York, awarded a premium of £10 to Thomas Young, of Oyster Bay, for the largest nursery of apple trees, the number being 27,123. Between the years 1794 and 1808, Mr. William Coxe, of Burlington, New Jersey, enriched his lands in that vicinity with extensive orchards, containing in the aggregate several thousand trees, which occupied a space of seventy or eighty acres; and within and since that period, numerous other orchards have been planted in various parts of the country, equaling, and even surpassing them in extent. Among the largest, and perhaps the most select, are those of Mr. Robert L. Pell, of the county of Ulster, New York, which have been planted about twenty years, and are said to contain 20,000 trees. America, too, has given birth to several val-

* The art of grafting, as well as that of pruning, has been ascribed to accidental origin. The occasional natural union or inarching of the boughs of distinct trees in the forests, is thought to have first suggested the idea of grafting; and the more vigorous shooting of a vine, after a goat had broused on it, is said to have given rise to the practice of pruning.

uable varieties of apples, which enter extensively both into her foreign as well as her domestic commerce, and are eagerly sought after in almost every civilized country of the globe. The most celebrated, and unquestionably the best variety extant, for shipping and for winter use, is said to have been the spontaneous production from a seed, more than a century and a half ago, in Newtown, on Long Island, near New York, and is well known by the name of "Newtown Pippin." The original tree stood on the estate owned at present by Mr. John J. Moore, of that town, and for a long time its fruit was called "Gershom Moore Pippin," in honour of its former proprietor. After enduring for more than one hundred years, it died, in about the year 1805, from excessive cutting and exhaustion. Its scions were in great request by all the principal amateurs and orchardists of the day, and engrafted trees of it are still to be met with in the neighbouring towns, which have stood beyond the "memory of man."* It is to be regretted, however, that the trees bearing this excellent variety of fruit, in many parts of the country, begin to manifest symptoms of decline; and it is believed by many, that the period has arrived in which nature is to terminate their existence, and like their parent stock, are about to pass into decrepitude and final decay.

As the longevity of the apple tree is comparatively limited, which is obvious from the perishable nature of its wood, there are but few very aged individuals to be met with, either in Europe or in America. The oldest trees of which we have received any account, are said to be growing near Plymouth, in Massachusetts, and are represented as being upwards of two centuries old. An ancient tree of the "Pearmain" variety also stands on the Charter Oak place, in Hartford, Connecticut, which was brought from England by Mr. George Wyllys, previous to the year 1645, and consequently must be more than two hundred years of age. Its trunk, though much decayed, still sends forth several thrifty boughs, which annually produce from two to three pecks of excellent fruit.

On the authority of Dr. James Mease, of Philadelphia, there is a mammoth apple tree at Romney, in Virginia, which grew spontaneously from seed, and is estimated to be fifty years old. It has attained a height of forty-five feet, with a trunk more than a yard in diameter, and a spread of branches of fifty-five feet. It is said to be in a flourishing condition, and continues to increase in size. In 1835, it produced 180 bushels of large fruit, besides four or five bushels left under its boughs as damaged, and several bushels, which, it was calculated, had been taken by visitors, in the course of the season; so that the total produce, in the opinion of Dr. Mease, amounted to nearly two hundred bushels.

The greatest quantity of fruit borne on a single tree, in England, in one year, that we have heard of, is recorded in Dodsley's "Annual Register," for 1777. It grew in the orchard of Mr. Hackman, of Littlefield, in Sussex, and produced 74 bushels of fruit, which, on being weighed, was found to average 14 pounds to each peck, and consequently the total product of the tree was nearly two tons.

The largest recorded apple tree in Britain, is at Herbert's farm, near Hereford, which, in 1836, was forty-eight feet in height, with a trunk five feet in diameter, and a spread of branches of forty-eight feet. —*Browne's Trees of America.*

* On the estate of Mr. Gardner G. Howland, at Flushing, there are several old trees of this description which bear abundantly every other year, and are supposed to be one hundred years of age.

On the Best Mode of Feeding Cattle.

BY PROFESSOR JOHNSTON.

THE following is the substance of a lecture delivered at Inverness, before the Highland Society of Scotland. After a few preliminary observations, the lecturer observed:

As a cattle importing district, therefore, the extension of sound information in regard to the economical use of food, must be of the very greatest importance; that is, in what way they could grow the greatest amount of beef or mutton at the least possible expense. This he was prepared to show was to be effected by the use of certain mixed food, and prepared food. An individual going from one end of the country to another to observe the state of agriculture, will look not merely at the kind of stock, but he will more particularly observe the implements of husbandry in use throughout the various districts. In order, therefore, to form an estimate of the degree of attention paid to this matter of prepared food in England, on his visit to Newcastle, at the great cattle show recently held there, he turned his attention particularly to the examination of the implements exhibited, having a bearing upon this point. Amongst these he found chaff-cutters, a peculiar machine for crushing corn and other seeds, and other instruments; all showing how much regard was being paid to this subject by practical men. There was no doubt but that the subject of the quantity of food which cattle require to produce a certain weight

of beef, was beginning to attract general attention; but before he entered upon the few points which he meant to notice in connexion with this question, perhaps it would be necessary to explain shortly the general composition of food. In all kinds of bread there were contained three different kinds of matter. First of all, there was a certain quantity of fat, which the butter they ate represented; secondly, there was a certain amount of sugar; and then there was besides, the third constituent, which was represented by the white of an egg. Now it was of the very greatest importance what description of food was used, and what proportion it contained of these three kinds of matter, as bearing upon the purpose it was intended to serve. Cattle had in their bodies different kinds of matter, also, but particularly flesh and fat; and the farmer should be sufficiently acquainted with the nature of food, to be able to distinguish what he should use when he wished to produce fat, or when he wished to produce fat and lean both together; and the food which was given would effect the one or the other of these purposes, according to its composition. The white of an egg or albumen would supply nothing, or nearly so, to the animal but muscle. The fat went directly to form fat. The starch in food kept the body warm, and when fat was wanted served the purpose of making the oily matter more readily become fat in the body of the animal.

Now, in fattening cattle, as in everything else, using the proper means produced the proper effects; and after the explanation which he had given, they would see at once that a mixture of food was better than the use of one kind alone. If they wanted to lay on muscle, they would feed with food containing the largest amount of gluten; and if they wanted to lay on the fat, they would give starch and oily substances, and only a small proportion of the other ingredient. Selecting food in any other way would not serve the purpose they had in view in the most economical way. He had a table representing the different proportions of fat in the food which they were in the habit of using; but he would illustrate what he had to say by a few simple illustrations. Wheat contained two per cent. of fat, and sometimes a little more; but oats contained sometimes from four to five per cent., or about double the amount which was to be found in wheat. Oats were next to Indian corn in this respect, the latter of which they were aware contained a large amount of fat. Gluten was the matter out of which the muscle was produced, and there was more of that substance in the bean or the pea, than in the oat; but the oat was better than wheat. But there was another kind of food used for fattening cattle, namely, oil-cake, which contained a greater amount of fat than the same weight of any other kind of grain. Linseed, from which oil-cake is made, differed from other descriptions of grain, in containing a greater amount of fat, and a larger amount of gluten likewise, with the exception of the bean. Now, practical men have derived great advantage from feeding their cattle on oil seeds; that food, from the peculiarity of its composition, laying on fat and muscle at the same time. Oil-cake, however, was the best food only when the greatest amount of fat was required; and according to the purpose which they had in view, farmers would give their cattle other descriptions of food. It was a remarkable circumstance, that the bean and pea contained very little fat, and as the wheels of the animal system required to be greased, these kinds of grain would not serve for that purpose, although they contained what made muscle. Although beans and peas were good food, therefore, they were not good as the sole food of animals. Besides, they would observe, that from their different constituents, plenty of oil seeds, and plenty of beans and peas, would be far more profitable than if they were to give either of them singly. That was the principle upon which the use of mixed food was founded—to give all the substances the animal required, and to give them at the cheapest rate; and the researches of the scientific man were directed to discovering the means by which these objects could be best accomplished. He had selected oil seeds, but he might have taken potatoes or turnips for his illustration.—*Amer. Jour. of Agriculture and Science.*

Rules for Selecting Cattle.

In selecting cattle for feeding, their qualities may be in some measure known by examining the hide, horns, &c. "It is well known that the grazier and the butcher judge of the aptitude that any aaimal has to fatten from the touch of the skin. When the hide feels soft and silky, it strongly indicates a tendency in the animal to take on meat; and it is evident that a fine and soft skin must be more pliable, and more easily stretched out to receive any extraordinary quantity of flesh, than a thick or tough one. At the same time, thick hides are of great importance in various manufactures. Indeed, they are necessary in cold countries, where cattle are much exposed to the inclemency of the seasons; and, in the best breeds of Highland cattle, the skin is thick in propor-

tion to their size, without being so tough as to be prejudicial to their capacity of fattening. It appears, from Columella's description of the best kind of ox, that the advantage of a soft skin is not a new discovery, but was perfectly well known to the husbandmen of ancient Italy." These are the observations of Sir John Sinclair, who adds the following as a summary of good points to be attended to in choosing cattle. They should be—1. Of a moderate size, unless where the food is of a nature peculiarly forcing; 2. Of a shape the most likely to yield profit to the farmer; 3. Of a docile disposition, without being deficient in spirit; 4. Hardy, and not liable to disease; 5. Easily maintained, and on food not of a costly nature; 6. Arriving soon at maturity; 7. Producing considerable quantities of milk; 8. Having flesh of an excellent quality; 9. Having a tendency to take on fat; 10. Having a valuable hide; and, lastly, Calculated (should it be judged necessary) for working." It is thought best to begin to break-in oxen at three years old, and to give them full work at four.

With respect to judging of cattle by their horns and teeth, we offer the following observations from the "Cyclopædia of Practical Husbandry, by Martin Doyle," (Rev. Mr. Hickey).

"The ordinary guide for ascertaining the precise age of cattle is the horn, which is also indicative of the breed; at three years old (this is laid down as a rule) the horns are perfectly smooth, after this a ring appears near the root, and annually afterwards a new circle, so that, by adding two years to the first ring, the age is calculated; but the contributors to the volume so frequently quoted, have clearly shown that this is a very uncertain mode of judging; 'that the rings are only distinct in the cow;' and that, 'if a heifer goes to the bull when she is two years old, or a little before or after that time, there is an immediate change in the horn, and the first ring appears, so that a real three-year old would carry the mark of a four years old.' 'In the bull they are either not seen until five, or they cannot be traced at all;' nor in the ox do they 'appear until he is five years old, and they are often confused;' besides, 'there is also an instrument called a rasp, which has been said to make many an arm ache a little before a large fair.' Without any delusive intentions, however, an ugly set in the horns of young cattle is often remedied by filing a little off the sides of the tips opposite to the direction which it is desired that the horns should take.

Some men have an antipathy to horns altogether, and would even carry their dislike so far as to extirpate them from the brows of all their cattle; they can indulge their taste by paring off the tops of the horns when they first break through the skin. Perhaps it is not generally known, that the larger the horn the thinner the skull.

The age is indicated with unerring certainty by the teeth, to those who have judgment and experience, until the animal reaches the age of six or seven; until two years old, no teeth are cast, at that age two new teeth are cut; at three, two more are cut; and in the two succeeding years two in each year; at five the mouth is said to be full, though not completely so until six, because until that period the two corner teeth (the last in renewal) are not perfectly up. The front, or *incisor* teeth are those considered, for a full grown beast has altogether thirty-two teeth."

METHOD OF ASCERTAINING THE WEIGHT OF CATTLE WHILE LIVING.

"This is of the utmost utility for all those who are not experienced judges by the eye, and by the following directions, the weight can be ascertained within a mere trifle:—Take a string, put it round the beast, standing square, just behind the shoulder-blade; measure on a foot-rule the feet and inches the animal is in circumference; this is called the girth; then, with the string, measure from the bone of the tail which plumbs the line with the hinder part of the buttock; direct the line along the back to the fore part of the shoulder-blade; take the dimensions on the foot-rule as before, which is the length, and work the figures in the following manner:—Girth of the bullock, 6 feet 4 inches; length, 5 feet 3 inches; which, multiplied together, make 31 square superficial feet; that again multiplied by 23 (the number of pounds allowed to each superficial foot of cattle measuring less than 7 and more than 5 in girth), makes 713 pounds; and, allowing 14 pounds to the stone, is 50 stone 13 pounds. Where the animal measures less than 9 and more than 7 feet in girth, 31 is the number of pounds to each superficial foot. Again, suppose a pig or any small beast should measure 2 feet in girth, and 2 feet along the back, which, multiplied together, make 4 square feet; that multiplied by 11, the number of pounds allowed for each square foot of cattle measuring less than three feet in girth, makes 44 pounds; which, divided by 14, to bring it to stones, is 3 stone 2 pounds. Again, suppose a calf, a sheep, &c., should measure 4 feet 6 inches in girth, and 3 feet 9 inches in length, which, multiplied together, make 16½ square feet; that multiplied by 16, the number of pounds allowed to all cattle mea-

suring less than 5 feet, and more than 3 in girth, makes 264 pounds; which, divided by 14, to bring it into stones, is 18 stones 12 pounds. The dimensions of the girth and length of black cattle, sheep, calves, or hogs, may be as exactly taken this way as it is at all necessary for any computation or valuation of stock, and will answer exactly to the four quarters, sinking the offal, and which every man, who can get even a bit of chalk, can easily perform. A deduction must be made for a half fatted beast of 1 stone in 20, from that of a fat one; and for a cow that has had calves, 1 stone must be allowed, and another for not being properly fat."*—*Chambers's Information for the People.*

Advice to Parents.—My father liked to have, as often as he could, some sensible friend or neighbour to converse with him, and always took care to start some ingenious or useful topic for discourse which might tend to improve the minds of his children. By this means he turned our attention to what was just and prudent in the conduct of life, and little or no notice was ever taken of what related to the victuals on the table; so that I was brought up in such a perfect inattention to those matters, as to be quite indifferent what kind of food was set before me. In after life this has been a great convenience to me; for my companions are often very unhappy for want of a suitable gratification of their more delicate tastes and appetites.—*Franklin.*

The Journal of Health says that a person accustomed to undress in a room without a fire, and to seek repose in a cold bed, will not experience the least inconvenience, even in the severest weather. The natural heat of his body will speedily render him even more comfortably warm than the individual who sleeps in a heated apartment, and in a bed thus artificially warmed, and who will be extremely liable to a sensation of chilliness as soon as the artificial heat is dissipated. But this is not all; the constitution of the former will be rendered more robust, and far less susceptible to the influence of atmospherical vicissitudes, than that of the latter.

Report of an Experiment with Special Manures, as applied to the Growth of Turnips in the Summer of 1846.

Charles Barclay, Esq., Bury Hill.

Sir,—In compliance with your request, I beg to present you with a Report of the experiments made with special manures for the growth of turnips, on your estate during the last summer.

In order that the nature of the several experiments may be the better understood, and consequently a more correct estimate formed of their different results, I will state as briefly as possible the nature of the soil, the course of cropping which it had previously undergone, and the preparatory cultivation of the land for the crop; together with any other attendant circumstances which may serve to illustrate the subject.

The nature of the soil in question, is a light blowing sand, very shallow, with a considerable quantity of rubbly surface stones, resting on a subsoil of sandstone rock. In point of quality, I believe I am justified in saying, it is almost as poor as any land in the county of Surrey. The part of the farm chosen, on which the trial took place, was a field of ten acres in extent; an old ley of three years standing, the layer commencing immediately after a crop of oats. The land was broken up with the plough as deep as it was possible to go, in the autumn of 1845. In the following April, the land was again ploughed, in an exactly opposite direction to that taken in the autumn. The plough was never again used, the cultivation being completed by the use of Biddel's scarifier; the couch and roots of the grasses were collected by Grant's lever horse-rake, some small part of which was burnt on the land for the sake of expedition, and the remaining greater portion carted to the yards.

From the backwardness of the season, and the multiplicity of work which necessarily attends an extensive breadth of turnips, the sowing was delayed till the 22nd and 23rd of July. The seed and manure were deposited by a drill manufactured by Smyth, of Suffolk, worked by two horses, drilling three rows at 18 inches apart at each breadth. The kind of seed the "Red Round."

The field was divided into ten portions, containing an acre in each; but owing to some part of the manure not being sufficiently dry to work quite properly, the divisions first made were necessarily altered, which will account for there being but nine portions mentioned below.

I here subjoin a tabular statement of the quantities and kind of manure applied to each portion; together with the cost of each, and also the weight of the whole produce per acre. It should be observed that the field was as nearly as possible of uniform quality; and the cultivation, both previous and subsequent to the sowing, on all parts exactly alike.

* Cattle Keeper's Guide.

A Particular of the quantity and description of dressings applied for the growth of Turnips on the Ten Acre piece of Land at Merriden; with the cost of each kind, and the weight of the produce per Acre.

No. of the Piece of Land.	Quantity of Land contained.	Descriptions of the dressings applied.	Quantity of each kind used with their respective costs.		Cost per Statute Acre.	Weight of Roots per Statute Acre.	Weight of Tops and Tails per Acre.	Total Weight of Produce per statute Acre.
	a. r. p.			£ s d	£ s d	T C Qr lb	T C Qr lb	T C Qr lb
1	1 " "	Crushed Bones and Turf Ashes.	8 Bush. Bones 2s. 6d. 16 " Ashes 5d.	1 " " " 6 8				
				1 6 8	1 6 8	9 1 3 20	3 0 2 16	12 2 1 36
2	1 " "	Crushed Bones, Turf Ashes, Nitrate Soda, and Nitrate Potash.	8 Bush. Bones 2s. 6d. 16 " Ashes ½ cwt. Soda 23s. ½ cwt. Potash 33s.	1 " " " 6 8 " 11 6 " 16 6				
				2 14 8	2 14 8	10 1 1 20	3 0 1 4	13 1 2 24
3	1 " 30	Crushed Bones, dissolved in Sulphuric Acid, Turf Ashes, and African Guano.	4 Bush. Bones, 84 lbs. Acid 1d. 16 Bush. Ashes. 1 cwt. guano £8 10s.	" 10 " " 7 " " 6 8 " 8 6				
				1 12 2	1 7 1	12 0 2 24	3 1 2 24	15 2 1 20
4	1 " 30	Crushed Bones dissolved in Sulphuric Acid, Turf Ashes, African Guano, Nitrate of Soda, & Nitrate of Potash.	4 Bush. Bones, 84 lbs. Acid 1d. 16 Bush. Ashes, 1 cwt. Guano, ½ cwt. Soda, ½ cwt. Potash,	" 10 " " 7 " " 6 8 " 8 6 " 11 6 " 16 6				
				3 " 2	2 10 8	14 1 1 4	5 0 1 4	19 1 2 8*
5	1 " "	Muck of an Ordidinary kind, African Guano, & Turf Ashes.	8 Cart loads of Muck at 4s. 3 cwt. Guano, 20 Bush. Ashes	1 12 " 1 5 6 " 8 4				
				3 5 10	3 5 10	13 1 2⅝ 24	5 0 0 0	18 1 2 24
6	1 " "	Muck, African Guano, Turf Ashes, Nitrate of Soda & Nitrate of Potash.	8 Loads of Muck 3 cwt. Guano 20 Bush. Ashes ¼ cwt. Soda ½ cwt. Potash	1 12 " 1 5 6 " 8 4 " 11 6 " 16 6				
				4 13 10	4 13 10	13 1 0 10	4 0 0 16	17 1 0 26
7	1 " 30	Muck, Crushed Bones dissolved in Sulphuric Acid and Turf Ashes.	8 loads of Muck 4 Bush. Bones 84 lbs. Acid 16 Bush. Ashes	1 12 " " 10 " " 7 " " 6 8				
				2 15 8	2 6 0	7 1 2 2[illegible]	3 0 1 [illegible]0	10 2 0 18
8	1 " 30	Muck, Crushed Bones dissolved in Sulphuric Acid, Turf Ashes, Nitrate of Soda, & Nitrate of Potash.	8 Loads of Muck 4 Bush. Bones 84 lbs. Acid ½ cwt. Soda ½ cwt. Potash	1 12 " " 10 " " 7 " " 11 6 " 16 6				
				3 17 6	3 4 10	12 " " "	3 1 1 4	15 1 1 4
9	1 1 "	Muck, Crushed Bones dissolved in Sulphuric Acid, Turf Ashes, and African Guano.	8 loads of Muck 4 Bush. Bones 84 lbs. Acid 1½ cwt. Guano 16 Bush. Ashes	1 12 " " 10 " " 7 " " 12 9 " 6 8				
				3 8 5	2 14 8	12 1 2 20	3 1 3 8	15 3 2 0

* By measure, 820 bushels per acre, weighing 40 lbs. per bushel.

The weight of top and tail per acre may seem small in proportion to the weight of roots; but it must be remembered, that the weighing took place immediately after a month's unusually severe weather, the land being at a considerable elevation, and very much exposed. The crop was hand-hoed twice, and thrice horse-hoed.

On all the portions where dissolved bones were used, the plants came forwarder to the hoe than where they were not used; but beyond this there was not much perceptible difference in the appearance of the different parts, until from a month to six weeks had elapsed, when No. 7 began to grow less rapidly than the rest. At the end of between seven and eight weeks, No. 1 began to fall off; and in a few days No. 2 followed. Further than this difference, the eye could hardly detect where the separation of each kind of dressing took place.

It will doubtless be looked upon by some as rather a curious account; but I am persuaded that it is by making experiments such as these we shall *practically* arrive at that knowledge so much to be desired, viz., *the specific dressing which each crop requires, and how this shall be varied to suit the different descriptions of soil.*

The crop of turnips, which, by the bye, are considered exceedingly good, are now being fed off on the land; after which, it will be sown with barley, cow grass following. The growth of these crops will be narrowly watched, and any particular effects which may be noticed will be reported at a future period.

I am, Sir,

Your very obedient humble servant,

Thomas Page.

Holmwood Farm, Dorking, Surrey,
11th of February, 1847.

Heated Rooms.

Complaints of dizziness and headache are common during the winter among those occupying close heated rooms, and the complaints are most common among females, because they are most confined. To remove, in part, the cause of these unpleasant sensations, follow the hints of the following paragraph:

Rooms heated with anthracite coal, and rooms heated with coal stoves, in which wood is burnt, have very dry atmospheres. The use of water in such rooms is very congenial to health, but the water should not be placed in an iron or tin vessel upon the stove, for the reason that it will undergo that degree of heat which will make its vapors offensive and injurious to breathe. It is as injurious to the human system to breathe putrid water vapors of this kind, as it is to breathe the vapors from stagnant pools in hot weather. If water is used upon a simple stove, an iron pan should be made use of, and this filled with dry sand, in the sand set an earthen bowl filled with clean water, which should be changed twice a day, and the bowl washed and kept as clean as if used for a drinking vessel.

Where hard coal is burned in a grate, a glass globe should be suspended in the room filled with clean pure water, and as the heat rises to the top of the room, it will steadily evaporate the water and moisten the dry and heated air. Persons who prefer the atmosphere of salt water vapor can add salt to the water, or if they prefer an aromatic atmosphere, they can add cologne water, or any other perfume which they prefer. It is as important to have clean air for breathing as to have clean water for drinking. Basement rooms where hard coal is burnt, should be frequently ventilated. Small children accustomed to stay in basement rooms find a bad air near the floor. The air should be removed by allowing the doors to be opened frequently to let in fresh air. A little care in these matters will tend wonderfully to comfort and enjoyment.—*Pa. Enquirer.*

Agriculture.—Andrew Stevenson, once speaker of the House of Representatives, and afterwards minister to England, in an address on agriculture in Virginia, says:

"What occupation more full of dignity, duties more full of joy, than those which distinguish the husbandman! When was it that man ever rose from a state of servitude and dependence to proprietorship of land and its cultivation, that he did not learn self-respect and become more elevated in his own esteem! Then it is that an entire change takes place. Then it is, that breathing no low or abject spirit, he reaps from the soil a harvest of virtues. The sobriety of the father—the economy of the mother—the devoted labour of the son—the virtue of the daughter—these, these are the fruits of glorious agriculture. And this is my answer to all who decry it. I pity those who know nothing, or are incapable of enjoying that soothing, cheering, and unsurpassing influence which agriculture sheds over the mind and heart of man.

"O! friendly to the best pursuits of man;
Friendly to thought, to virtue, and to peace,
Domestic life in rural leisure passed!"

Translated for the Farmers' Cabinet.

On the distribution of Mineral substances in different parts of Plants, by C. Rammelsberg.

From Annal. de Poggendorff, translate ind the Journal de Pharmaciet de Chimie.

The chemical examination of colza and peas, has conducted M. Rammelsberg to the following interesting results, viz. that the substances contained in the grain, differ both in quality and quantity from those found in the straw.

The seed of colza and of the pea contain potash without a trace of soda. In the straw on the contrary he has found both alkalies, the soda predominating. Both plants contain lime and magnesia; the first abounding in the straw, the latter in the seed. Phosphoric acid, which is an essential part of the seed, is found in the straw in but very small quantities: thus for example, the seed of colza contains eight times, and peas three and a half times as much phosphoric acid as the same weight of the straw of these plants. The proportions of minerals and sulphates is the reverse of this: the straw presenting them in considerable quantities, while but very minute portions are found in the seed. This is also true of the carbonic acid produced by the incineration of the organic parts. The following are the results of the experiments of M. Rammelsberg.

I. Colza.	Seed.	Straw.
Potasse,	25.18	8.13
Soda,		19 82
Lime,	12.91	20.05
Magnesia,	11.39	2.56
Peroxide of Iron,	0.62	
Posphoric Acid,	45.95	4.76
Sulphuric Acid,	0.53	7.60
Carbonic Acid,	2.20	16.31
Muriatic Acid,	0.11	19.93
Silica,	1.11	0.84
	100.00	100.00

II. Peas.	Seed.	Straw.
Potash,	43.09	8.20
Soda,		12.50
Lime,	4.77	30.53
Magnesia, Peroxide of Iron,	8.06	6.93
Phosphoric Acid,	40.56	9.21
Sulphuric Acid,	0.44	7.01
Carbonic Acid,	0.79	16.36
Muriatic Acid,	1.96	7.15
Silica,	0.33	0.62
	100.00	100.00

Ashes form 100 parts of each substance.
From the Colza, seed, 4.54, straw 5.21.
From the Peas, seed, 3.28, straw, 4.15.

In these experiments the vegetable substances were carbonized at a gentle heat in a covered crucible, to avoid loss and decomposition; the charcoal, reduced to a fine powder, was washed with boiling water, and the extract submitted to special examination. The remaining charcoal was treated with muriatic acid, was well washed, dried and incinerated, and the ashes added to the acid solution. The carbonic acid, sulphuric acid and chlorine were determined separately. The following is the composition of the soluble portion contained in 100 parts of the preceding:

I. Colza.	Seed.	Straw.
Potash,	3 08	7.53
Soda,	"	18.63
Lime,	"	"
Magnesia,	"	"
Phosphoric Acid,	1.74	"
Sulphuric Acid,	0.53	7.60
Carbonic Acid,	0.42	4.77
Muriatic Acid,	0.11	19.93
	5.88	58.46

II. Peas.	Seed.	Straw.
Potash,	7.47	6.74
Soda,	"	9.90
Lime,	0.03	0.29
Magnesia,	0.15	0.15
Phosphoric Acid,	2.10	0.64
Sulphuric Acid,	0.44	5 30
Carbonic Acid,	0.79	4.75
Muriatic Acid,	1.96	7.15
	12.94	34.92

The preceding numbers do not, of course, represent the entire quantity of soluble parts, for the structure of vegetable charcoal does not permit their complete extraction, especially those contained in the seed.

M. Rammelsberg concluded his paper with a review of the principal results heretofore obtained by other chemists in their analysis of the different parts of maize, wheat, rye, barley, oats, and of the pine. He thought, at present, it would be premature to draw general conclusions from the analysis, yet would call attention to the constant presence and large proportion of phosphoric acid in the seed, whilst it was found in but small quantity in other parts of vegetables. In like manner, lime is especially abundant in the straw and in wood, while magnesia is met with in the seed.

Lord Leicester.

The following extract from the Speech of Andrew Stephenson, our late minister to England, delivered at a meeting of the Agricultural Society of Albemarle, Va. is taken from the number for last month of *Skinner's Farmer's Library.*

And here, Mr. President, I cannot forbear alluding to one extraordinary and distinguished farmer of England, to whom not only she, but the whole world, are indebted, as one of the greatest patrons of Agriculture, and benefactors of man. I allude to the late Lord Leicester, better known as Mr. Coke, of Holkham, the great farmer commoner of England and the devoted friend of America and all Americans. I can speak of him and his farms, with some degree of accuracy, as it was my good fortune to obtain his friendship and regard, during my residence in England, and spend many weeks with him in the country. This celebrated Holkham estate, (or rather farms, for it is divided into many,) contains many thousand acres. The house, one of the most magnificent piles of architecture in the kingdom, covers an entire acre of ground; the immediate pleasure grounds ten acres, and the park eight or nine miles in circumference, and had just been entirely enclosed with brick, when I paid my first visit. The house was built by the first Earl of Leicester and wife about 1734, and they dying without children, it descended to Mr. Coke the nephew, as the next of kin. He was then quite young. It remained totally neglected until he took possession of it on reaching his majority, with no means however to cultivate, or improve it. He was advised to pull down the house, sell the bricks, and dispose of the lands at any price or abandon them. It was about this period that, speaking of the poverty of Holkham, one of the females of the Walpole family wittily said of it, "that there was always two rabbits contending for one blade of grass." Its character and poverty however admit of no doubt, for over the door of the entrance hall is the following remarkable inscription in marble.

"This Seat, On An Open Barren Estate
Was Planned, Planted, Built, Decorated,
And Inhabited, The Middle Of The 18th Century,
By Thomas Coke, Earl Of Leicester."

On taking possession of the estate the first effort was to sell. He offered it at 2s. 6d. an acre, but being unable to get even that, he determined to borrow the necessary funds, and reclaim it. He did so, removed to it in his twenty-second year and devoted himself to it for life. Amid the prejudices, ignorance and apathy of the people of Norfolk, he continued firm and resolute, and kept to his opinions and persevered for years with all his characteristic energy of purpose. Then it was that things began to change. Men of talent and enterprise began to take up the matter. The people were awakened out of the sleep which precedes dissolution, to consider and reflect on the subject, and their duties; and in less than a quarter of a century, his patriotism and industry triumphed over ignorance and apathy, and a poor barren estate that could neither be sold nor cultivated, in its then state, was made a perfect garden spot, yielding an income of 40 shillings or more an acre, and producing average crops in later years of forty to fifty bushels of wheat and more to an acre. It was during one of my visits, that he told me that he had lived to see all his expectations more than realized and justified; and that one of the most gratifying things, connected with his agricultural life was, that only a few months before, he had embarked with his wife and four sons on board of a vessel which was launched at Wells, a small town near Holkham, which had been built out of *Oak produced from acorns* of his own planting! He was then I suppose more than eighty, and of course the oak was some sixty years old! I will not suffer myself to speak of the extent and vastness of the estate, created as it were by one man alone and unassisted. To give you, however, from certain data, an idea of the extent and character of the cropping, I will read an extract from a Treatise on Practical Farming and Grazing, by C. Hilliard, Esq., a distinguished agriculturalist, published in 1837, and a copy of which he was good enough to present to me. In page 32 he says:

"At Holkham the wheat, being short in the straw, is mowed with a cradle scythe: youths, women and boys, immediately following the mowers, binding it up (assisted by horse-rakes) into sheaves, which, as the straw is free from weeds, if the weather is particularly fine, they will carry without setting the sheaves up in the usual manner in shocks. I was at Holkham, about eight days, in the year 1831, at the time wheat was harvesting, and a most animating sight it was. I counted above one hundred, men, women, and boys, employed in one large field. In this way, *three hundred and forty-five acres* of wheat were cut, carted and stacked, in six days. This was getting on with wheat harvest more expeditiously, perhaps, than is in the power of any other person in the kingdom. I saw at the same time, *four hundred and fifty acres* of turnips, of different sorts, and mangel wurzel, in which Mr. Coke challenged me to find a single weed, excepting some that might have just

sprung up out of the ground. I could not see one weed that was three or four inches long, and this was clean farming on a large scale as probably could not be seen in any part of the world."

Now I call upon our anti-scientifics and of the "Good Enoughs," to explain how these results could have been produced under any circumstances, upon such an estate as this was, without the aid *of the most high and finished system of scientific cultivation!* One field of three hundred and forty-five acres producing between fourteen and fifteen thousand bushels of wheat, and four hundred and fifty acres more in luxuriant "turnips!" Why gentlemen, it must strike the imaginations of these friends of ours as more like the enchantments of fable and story than sober reality. But why speak of him as the most remarkable agriculturalist that ever lived! It is matter of history and not to be questioned! Will you pardon me, in referring to what one of the distinguished writers of the day says of him and his farming:

"The country and not alone the country, but the world, it may truly be said, acknowledges the benefits of Mr. Coke's exertions in the advancement of the first of Arts. For himself, both as regards his happiness and his after reports to posterity, nothing could have been more full of congratulation than his early selection of such a study. To prosecute with such advantage any pursuit to such a period; to enjoy so long a duration of uninterrupted health; to see the patrimony of his ancestors improved beyond all possible computation; to know that from his example, his spirit, his skill, and his encouragement, not alone his own estate, not the country where he lived, not the country itself only, but every civilized nation on the face of the globe, may be said to owe some portion of obligation to his labors; to be able to assemble the curious, the scientific, and the eminent, in vast numbers around him; to hear his just praises spoken from the lips not only of men distinguished in arts, in arms, and in letters, but of princes of his own and foreign lands. All these together form an aggregate of fortune that attends but a very few among those who are born and die. Yet such is the consummation (and a proud spectacle it is both for the individual and for his country) that Holkham has existed—and that, under Divine Providence, Mr. Coke has been made the instrument of diffusing so many and such great blessings among mankind."

And well may England place among her first men, and her most beneficent benefactors, the man who shed such a lustre upon her agriculture, and that of the world. He did for the agriculture of England, what *John Hampden* did for the liberties of Englishmen against tyranny. And if the reward of popular praise, and popular honours, are due to those who, guided by a wise philosophy, and whose objects have been the welfare and improvement of mankind, then are they due to Thomas William Coke.

Strawberry Runners.

I BEG to give my opinion in favour of cutting the runners off strawberry plants. Being a lover of this fruit, and therefore anxious to procure information upon its cultivation, my attention was arrested by an able leading article in the *Chronicle* some years ago, against mowing off the foliage of the strawberry at the fall of the year, as also against other abuses which had crept into its cultivation. The directions given in this article I implicitly obeyed, and have every reason to be grateful for the knowledge which it imparted. But the cutting off the runners being a subject upon which that article did not enter, I was induced to experiment upon it myself. For this purpose I made a new plantation, in which the plants were placed eighteen inches apart in rows, and the rows themselves two feet asunder. I have never allowed a runner to exceed half a foot in length upon any of these, and the consequence has been that the plants have become strong and bushy. The crop this season has been abundant and the fruit individually large in size. While my neighbours' plants during winter seemed to be creeping back whence they came, not being able to bear the withering and biting blast of the season, mine stood up full of freshness and vigour, and ready to start into growth at the first approach of spring. So convinced am I of the propriety of cultivating this fruit in separate and distinct plants, and of cutting off the runners, that I have this season taken out a plant between each of my plantations, thus making the distance between each plant four feet by three. From these I am cutting off the runners with the greatest care. But why huddle up strawberry plants together and cultivate other fruits separately and distinctly? Does not this plant, as others, exclaim, in language not to be mistaken, "Give me air or I shall die?"—*Gardener's Chronicle.*

MAHOGANY is becoming so cheap in England that ship builders are using it instead of teak wood. The reduction in price is caused by the extensive use of other woods, as black walnut, oak, &c., in the manufacture of cabinet ware.

For the Farmers' Cabinet.

Animal Poisons—their Cure.

Mr. Editor,—The lamented death of Dr. Wainwright, from the bite of a rattlesnake, induces me to send you a communication I wrote some months since, on the subject mentioned in the title of this article.

About two years ago, you published an article in which it is stated that a professor of a Southern college—if I recollect right—discovered that aqua ammonia or spirits of hartshorn, was an excellent remedy for the bites of musquitoes, and that he had used it very successfully for the stings of other insects. A few more hints and recommendations upon that subject, would, perhaps, be acceptable.

It would seem that all animal poisons are of an *acid* nature, for I find by numerous experiments, that the application of *alkaline* substances to them, has the effect of destroying their power. This I suppose they do by neutralizing them. I find that our common washing soda, pulverized very fine, and laid on the spot where the sting of the insect has inserted the poison, and a drop of water added so as to dissolve it, will, in a few moments entirely allay the pain, however severe it may have been before the application. And another desirable result follows—there is but little or no swelling afterwards. The soda seems to penetrate into the wound, and entering into chemical combination with the poison, renders it harmless. The reason why ammonia does this, is because it is an alkali—and all the alkalies have a like effect. Soda, fresh burnt lime, potash, and ammonia, are the alkalies most easily obtained.

Salts, such as common table salt, epsom salts, glauber salts, sal æratus, &c., have a very good effect when applied in the same manner, but not so good as the alkalies, as it is the alkaline principle of the salt that operates, and the power of the alkaline principle to do good is lessened by the other constituents of the salt.

I am told that a mixture of brandy and common salt is much used on the prairies, and in the woods in the West, by the hunters and trappers, as an antidote to the bite of rattlesnakes, rabid wolves, and rabid Indian dogs, and I have no doubt that the soda of the salt is mainly instrumental in producing the good effect. I have but little doubt that if weak ley of potash, or soda, were administered by injection, and given to the stomach in a powdered form, to those afflicted with hydrophobia, they would soon get rid of their awful feelings. And I am strongly disposed to think, that the same treatment would be highly beneficial to those who are suffering from the effects of a bite of a rattlesnake.

I make it a practice in the summer to carry with me whenever I go into the woods, or where I am liable to meet with rattlesnakes or poisonous insects, to take a small bottle filled with water, in which is dissolved as much of the common washing soda as the water will dissolve, and I frequently have occasion to use it for the bites and stings of insects, and with uniform good success. If I were bitten by a rattlesnake, I should immediately apply it to the wound, as it cannot do harm, and I am disposed to think, would be of the most essential service.

I recommend to others, most heartily, the course I thus pursue. Chemico.

Lewisburg, Pa., Feb. 3rd, 1848.

Importance of Phosphates.

My Dear Sir,—My recent researches into the constituent ingredients of our cultivated fields, have led me to the conclusion that, of all the elements furnished to plants by the soil, and ministering to their nourishment, the phosphate of lime, or, rather the phosphates generally, must be regarded as the most important.

In order to furnish you with a clear idea of the importance of the phosphates, it may be sufficient to remind you of the fact, that the blood of man and animals, besides common salt, always contains alkaline and earthy phosphates. If we burn blood, and examine the ashes which remain, we find certain parts of them soluble in water, and others insoluble. The soluble parts are, common salt and alkaline phosphates; the insoluble consist of phosphate of lime, phosphate of magnesia, and oxide of iron.

These mineral ingredients of the blood—without the presence of which in the food, the formation of blood is impossible—both man and animals derive, either immediately or mediately, through other animals, from vegetable substances used as food; they had been constituents of vegetables, they had been parts of the soil upon which the vegetable substances were developed.

If we compare the amount of phosphates in different vegetable substances with each other, we discover a great variety, while there is scarcely any ashes of plants altogether devoid of them, and those parts of plants which experience has taught us are the most nutritious, contain the largest proportion. To these belong all seeds and grain, especially the varieties of bread-corn, peas, beans, and lentils.

It is a most curious fact that, if we incinerate grain, or its flour, peas, beans, and

lentils, we obtain ashes which are distinguished from the ashes of all other parts of vegetables by the absence of *alkaline carbonates*. The ashes of these seeds, when recently prepared, do not effervesce with acids; their soluble ingredients consist solely of alkaline phosphates, the insoluble parts of phosphate of lime, phosphate of magnesia, and oxide of iron; consequently of the very same salts which are contained in blood, and which are absolutely indispensable to its formation. We are thus brought to the further indisputable conclusion, that no seeds suitable to become food for man and animals, can be formed in any plant without the presence and co-operation of the phosphates. A field in which phosphate of lime or the alkaline phosphates form no part of the soil, is totally incapable of producing grain, peas, or beans.

An enormous quantity of these substances indispensable to the nourishment of plants, is annually withdrawn from the soil and carried into great towns, in the shape of flour, cattle, et cetera. It is certain that this incessant removal of the phosphates must tend to exhaust the land and diminish its capability of producing grain. The fields of Great Britain are in a state of progressive exhaustion from this cause, as is proved by the rapid extension of the cultivation of turnips and mangel wurzel—plants which contain the least amount of the phosphates, and therefore require the smallest quantity for their developement. These roots contain 80 to 92 per cent. of water. Their great bulk makes the amount of produce fallacious, as respects their adaptation to the food of animals, inasmuch as their contents of the ingredients of the blood; that is, of substances which can be transformed into flesh—stands in a direct ratio to their amount of phosphates, without which neither blood nor flesh can be formed.

Our fields will become more and more deficient in these essential ingredients of food, in all localities where custom and habits do not admit the collection of the fluid and solid excrements of man, and their application to the purposes of agriculture. In a former letter I showed you how great a waste of phosphates is unavoidable in England, and referred to the well known fact, that the importation of bones restored in a most admirable manner, the fertility of the fields exhausted from this cause. In the year 1827, the importation of bones for manure amounted to forty thousand tons, and Huskisson estimated their value to be from one hundred thousand to two hundred thousand pounds sterling. The importation is still greater at present, but it is far from being sufficient to supply the waste.

Another proof of the efficacy of the phosphates in restoring fertility to exhausted land, is afforded by the use of the *guano*—a manure which, although of recent introduction into England, has found such general and extensive application.

We believe that the importation of one hundred weight of *guano*, is equivalent to the importation of eight hundred weight of wheat—the hundred weight of guano assumes, in a time which can be accurately estimated, the form of a quantity of food corresponding to eight hundred weight of wheat. The same estimate is applicable in the valuation of bones.

If it were possible to restore to the soil of England and Scotland the phosphates which during the last fifty years have been carried to the sea by the Thames and the Clyde, it would be equivalent to manuring with millions of hundred weights of bones, and the produce of the land would increase one-third, or perhaps double itself, in five to ten years.

We cannot doubt that the same result would follow, if the price of the guano admitted the application of a quantity to the surface of the fields, containing as much of the phosphates as have been withdrawn from them in the same period.

If a rich and cheap source of phosphate of lime and the alkaline phosphates were open to England, there can be no question that the importation of foreign corn might be altogether dispensed with after a short time. For these materials England is at present dependent upon foreign countries, and the high price of guano and of bones prevents their general application, and in sufficient quantity. Every year the trade in these substances must decrease, or their price will rise as the demand for them increases.

According to these premises, it cannot be disputed, that the annual expense of Great Britain for the importation of bones and guano is equivalent to a duty on corn—with this difference only, that the amount is paid to foreigners in money.

To restore the disturbed equilibrium of constitution of the soil—to fertilize her fields—England requires an enormous supply of animal excrements; and it must, therefore, excite considerable interest to learn that she possesses, beneath her soil, beds of fossil *guano*, strata of animal excrements, in a state which will probably allow of their being employed as a manure at a very small expense.

The coprolites discovered by Dr. Buckland—a discovery of the highest interest to geology—are these excrements; and it seems

extremely probable that in these strata England possesses the means of supplying the place of recent bones, and therefore the principal conditions of improving agriculture—of restoring and exalting the fertility of her fields.

In the autumn of 1842, Dr. Buckland pointed out to me a bed of coprolites in the neighbourhood of Clifton, from half to one foot thick, enclosed in a limestone formation, extending as a brown stripe in the rocks, for miles along the banks of the Severn. The limestone marl of Lyme Regis consists, for the most part, of one-fourth part of fossil excrements and bones. The same are abundant in the lias of Bath, Eastern, and Broadway Hill, near Eversham. Dr. Buckland mentions beds, several miles in extent, the substance of which consists, in many places, of a fourth part of coprolites.

Pieces of the limestone rock of Clifton, near Bristol, which is rich in coprolites and organic remains, fragments of bones, teeth, &c., were subjected to analysis, and were found to contain above 18 per cent. of phosphate of lime. If this limestone is burned, and brought in that state to the fields, it must be a perfect substitute for bones, the efficacy of which as a manure does not depend, as has been generally but erroneously supposed, upon the nitrogenized matter which they contain, but on their phosphate of lime.

The osseous breccia found in many parts of England deserves especial attention, as it is highly probable that in a short time it will become an important article of commerce.

What a curious and interesting subject for contemplation! In the remains of an extinct *animal* world, England is to find the means of increasing her wealth in agricultural produce, as she has already found the great support of her manufacturing industry in fossil fuel—the preserved matter of primeval forests—the remains of a *vegetable* world. May this expectation be realized! and may her excellent population be thus redeemed from poverty and misery!—*Liebig's Letters.*

Horticultural Premiums.

THE Pennsylvania Horticultural Society will hold its stated meeting in the Museum building on the 21st of next month, at 7½ o'clock, P. M. The following premiums are offered.

RHODODENDRON.—For the best specimen, to be exhibited in a pot, $3.

For the second best do. do. do. $2.

For the best American Seedling, do. $3.

AZALEAS.—For the best, three named varieties to be exhibited in pots, $3.

For the second best do. do. do. do. $2.

For the third best do. do. do. do. $1.

For the best American Seedling, to be exhibited in a pot, $3.

PEARS.—For the best, six to be exhibited, $2.

For the second best do. do. $1.

APPLES.—For the best, five named varieties, three specimens of each, $2.

For the second best do. do. do. do. $1.

From the Cultivator.

Iowa as an Agricultural State.

EDS. CULTIVATOR,—I consider Iowa as first in point of natural advantages of any state in the Union for Agricultural purposes. Our prairie soil is a black vegetable mould, from one and a-half to three feet deep. The subsoil is a stiff clay. The prairies are not generally over two to three miles in width, and the timber is good. There is, probably, about an equal proportion of prairie and timber.

We seldom or never have a failure in our corn crop, and vegetables of all kinds grow to an enormous size with little cultivation. Iowa is one of the best watered states in the Union for hydraulic purposes. Wheat some seasons is very abundant, but is frequently winter-killed. I trust we shall find by close and practical observation, a remedy for this evil before many years. Corn being our staple production, it would naturally lead us to be a great pork-making people—and were we nearer the ultimate market for this great staple, or had we a direct railroad communication to the Atlantic states, in five years we would be second to no state in the production of pork.

We have made more fresh pork this season in Iowa, than our capitalists are able to purchase, and the difficulty of getting it to market, as well as the want of knowledge in regard to the number of hogs to be slaughtered in our state, has prevented eastern capital from finding its way here.

Consequently, the price is very low, and a majority of the farmers are packing their own pork. This should never be the case. Farmers can never put up their pork and send it to market as advantageously as men accustomed to that business. They should, and generally would be willing to sell at a fair price, rather than have the trouble of packing and shipping for themselves.

I am astonished that more capital is not invested in our state in the growing of wool; from the experience of all who have engaged in it, to any considerable extent, it has

proved the adaptation of our soil and climate to this important branch of husbandry —and is found as lucrative as any other branch of agriculture. I am informed by a pretty extensive wool grower in my neighbourhood from Washington county, Pa., that his sheep are not subject to many of the diseases here, that they were in Pa.

I do not think it probable that the eastern wool grower upon land worth $50 to $100 per acre, and hay worth $15 per ton, could successfully compete with the western, where land is worth $5 per acre, and hay $2.50 per ton.

We are only in the first year of our existence as a state, and the fourteenth as the inhabitant of a white man—still our population numbers between 150 and 200,000 inhabitants, a greater portion of them from the New England and middle states; they are probably as well informed, and as industrious as the same number in any of our sister states; and all that we want to make us prosperous and happy, is the communication before spoken of with the east.

The health of Iowa, off the water courses, is as good as in any other state. On the water courses, we, like all the west, are subject to fever and ague.

The ease with which we cultivate our prairie farms, would astonish our New England farmers. They would hardly believe that one man with a pair of horses, could cultivate forty-five acres of land in corn, and do it well; but this is not an uncommon occurrence.

We can raise 500 bushels of potatoes to the acre with no other work than to plough them twice or thrice, with the shovel plough after they are planted, that is, without the use of manure or hoe.

The shovel plough is the only tool used in the after culture of corn, and an average crop is from forty to sixty bushels per acre; besides, our corn fields are generally so well lined with pumpkins in the fall, that a man can walk on them all over his corn field.

I may add that I raised the last season 150 bushels of potatoes from two bushels, planted in one corner of my corn field, without manure or the use of the hoe.—J. A. Pinto. *Hartford, Iowa, Dec.* 13, 1847.

Soiling.

By R. L. Pell, Pelham Farm, Ulster county.

For the last four years it has been my constant practice to soil, not only cows, but hogs, oxen, and horses. My yards are large, enclosed by stone walls, and so arranged as to collect all the manure in the centre. There is a pump and trough convenient to it, and open sheds where the animals may lie and ruminate at pleasure. Three times each day, at stated hours, green crops are cut and brought to them, such as clover and timothy grass, green oats, green corn stalks, green buckwheat in bloom, root tops, &c. Occasionally, by way of change, dry hay and straw are cut up and given to them, mixed with sufficient wheat bran to induce them to relish it. The stock are never permitted to waste anything; that left by the cows is given to the horses, as horses will eat after cows, and vice versa, cows after horses; but they will not eat after each other. The leavings of the horses is then fed to the hogs. The animals are enabled to consume their quantum in about thirty minutes, when they immediately lie down, rest, take on fat, and secrete milk. If pastured, they require many hours to obtain the requisite food, besides laboring diligently, which has a tendency to prevent the secretions, either of fat or milk. They have but little time to ruminate; and when driven to and from pasture, run wildly about the field; are whipped, stoned, and chased by dogs, which causes them to become feverish, and as a result, contract their milk vessels.

Salt should always be within reach of the animals in the yard, as it is indispensable to keep the organs of digestion active, increase the milk and growth of fat; and it much improves the quality of the flesh.

I have found, by actual experiment, that cows, when fed in the yard at regular periods, with a change of food, not allowing them at any time to be overfed, and supplied at all times with an abundance of water, have doubled their milk; that is to say, the same cows that were one year depastured gave, when confined, twice the quantity of milk, and of a much richer quality. When depastured, I did not obtain a particle of manure; it was dropped upon the soil, certainly, but with very little advantage to it; nearly all the volatile gases were immediately given to the atmosphere, and many of its other valuable properties were withdrawn from it by flies; so that the soil received but little benefit. One of the principal and most valuable ingredients in manure is ammonia, which is converted to a volatile substance in farm-yard manure, called nitrogen, and is, of all others, the fertilizer that must, if possible, be saved, as neither seeds nor plants can be produced without it. The manure dropped in the field is deprived immediately of this indispensable gas. The potash and soda also being easily dissolved by water, are likewise practically lost, by being deposited in excess. In the barnyard these valuable substances may be preserved by means

of charcoal dust, which absorbs the ammonia as it rises to escape, and the potash as it dissolves, by absorption, and holds them until saturated with rain, when the gases are again disseminated in the heap, and the charcoal takes in moisture. This manure may then be placed on fields in large or small quantities, as required, and in such a manner as to produce the most advantage. An opportunity is afforded likewise, of making any description of manure needed. If highly nitrogenized substances are required for crops, allow the hogs to run in the barn-yard, and feed them corn; it contains valuable nutritious elements, suitable not only to the growth of plants, but the animals themselves, being composed of nitrogen, potash, carbon, soda, lime, and other necessary chemicals, all of which, after having formed the bones, flesh, fat, skin, hair and muscles of the animal, are finally returned to the manure heap in lesser quantities. The value of the manure may be farther increased by feeding oats, rye, peas, buckwheat, cut straw, &c.

One reason that the excrement of the horse is so much richer and more valuable than that of the cow is, that the horse is fed on farinaceous matter, corn, oats, &c., which the cow is not; and so likewise is that of man, because he partakes of a great variety of food, both animal and vegetable. My barnyard has yielded me a large amount of manure per annum, since I commenced soiling my stock; whereas, before, I did not obtain a single load, except in winter. The plan I adopt is, to cast daily all the refuse of the farm into the yard; such as weeds, muck, leaves, refuse straw, sods from the hedge rows, pond mud, refuse vegetables, and numerous other substances that might be named; the hogs turn them over and incorporate them one with another, and the stock tramples down and forms them into a solid mass; charcoal dust is once a week spread over the whole, which retains and preserves all the gases that would otherwise escape; every three months it is drawn out, placed in a square heap, and mixed with plaster, ashes, salt, muck, and guano; the whole is then covered with charcoal dust to the depth of six inches, and left until fall, when it is used upon the fields most requiring it; spread on broad cast, and ploughed under the earth, and the crops make use of the gases as nature provides, and all care ceases.

Another most important advantage accrues to the soiler, viz: a piece of land that would support five cows, depastured one week, would amply furnish the same with an abundant supply of food one month, if cut and carried to them. The piece depastured would likewise be almost destroyed by poaching in wet weather, trampling, sleeping upon, and injury to the herbage by close eating. Horses do much more damage than cows, as they eat much closer, and frequently pull the grass out by the roots.

When cattle are stall-fed, or soiled in the the yard, the nitrogen of the manure may be preserved by artificial means. It is an ingredient absolutely indispensable to the growth of plants. By analysis it has been found in every part of the growing plant; the roots, stems, leaves, &c., contain it, showing that without it plants cannot be grown. How important then is it, that so valuable a substance should be preserved. I have grown plants in pure charcoal dust, by watering them with rain water; the rain water yielded them ammonia, and consequently nitrogen as one of its elements. I found with spring water, I could not grow them after a certain period at all in charcoal dust; but with rain water most successfully. Although the air must contain a vast quantity of nitrogen, I am confident the plants I grew, did not obtain the quantity they required from that source; if they had, the spring water would have answered them as well as rain water; they must have obtained it through the medium of ammonia contained in the rain water. This is a singular fact, and goes to show that although a generation of more than one thousand millions of the children of Adam, and 20,000 millions of animals cease to exist, and the nitrogen which they contain, is yielded in part to the air air of heaven every thirty years, still plants cannot elaborate it in their system, except through the medium of their roots. The hydrogen unites with the nitrogen, afforded, not only by dead animals, but by the excrement and urine of all animals while living, as well as other putrescent matter; thus forming ammonia, which combines with carbonic acid gas, and descends with every shower to the earth's surface, in a soluble form, easily taken up by the roots, and distributed throughout the plant. Davy calculates, that if a pint of rain water contain only a quarter of a grain of ammonia, a field of forty thousand square feet must receive yearly upwards of eighty pounds of ammonia, or sixty-five pounds of nitrogen; for it is ascertained that the annual fall of rain water in England, on this extent of surface, is at least 2,500,000 pounds. This is much more nitrogen than is contained in the form of vegetable albumen and gluten in 2,800 lbs. of hay, or 20,000 lbs. of beet root, which would be the yearly produce of such a field; but it is less than the straw, roots, and grain of corn, which might grow on the same sur-

face, would contain; therefore, the farmer must supply the deficiency of nitrogen by using manures containing ammonia.

Animal manure is chiefly valuable for the ammonia which it produces. Without it, fodder for animals, or vegetables and grain for man, cannot be grown. Manure without stint with nitrogenized substances, and the wheat grown will yield 18 per cent. of gluten, will weigh 64 lbs., and produce 50 bushels to the acre. Such has been the result of an experiment I tried upon a wheat field, when the adjoining field, treated in the usual manner, yielded me wheat weighing 56 pounds, and 15 bushels to the acre, and probably not more than five per cent. of gluten. I placed some of the same nitrogenized composition upon a barren piece of sandy land, which I had never seen covered with verdure of any description, and in a very short period of time, it was clothed with a dense dark green grass, which tillered well. White clover afterwards came in, (which, when it dies, affords food for a succession of plants) and the piece may be considered as reclaimed.—*N. Y. Agricultural Transactions.*

Food of the Horse.

The system of manger-feeding is becoming general among farmers. There are few horses that do not habitually waste a portion of their hay; and by some the greater part is pulled down and trampled under foot, in order first to cull the sweetest and best locks, and which could not be done while the hay was enclosed in a rack. A good feeder will afterwards pick up much of that which was thrown down; but some of it must be soiled and rendered disgusting, and, in many cases, one-third of this division of the food is wasted. Some of the oats and beans are imperfectly chewed by all horses, and scarcely at all by hungry and greedy ones. The appearance of the dung will sufficiently evince this.

The observation of this induced the adoption of manger-feeding, or of mixing a portion of chaff with the corn and beans. By this means the animal is compelled to chew his food; he cannot, to any great degree, waste the straw or hay; the chaff is too hard and too sharp to be swallowed without considerable mastication, and, while he is forced to grind that down, the oats and beans are ground with it, and yield more nourishment; the stomach is more slowly filled, and therefore acts better on its contents, and is not so likely to be overloaded; and the increased quantity of saliva thrown out in the lengthened maceration of the food, softens it, and makes it more fit for digestion.

Professor Stewart very properly remarks that "many horses swallow their corn in great haste, and when much is eaten, that habit is exceedingly dangerous. The stomach is filled—it is overloaded before it has time to make preparation for acting on its contents—the food ferments, and painful or dangerous colic ensues. By adding chaff to his corn, the horse must take more time to eat it, and time is given for the commencement of digestion, before fermentation can occur. In this way chaff is very useful, especially after long fasts."

If, when considerable provender was wasted, the horse maintained his condition, and was able to do his work, it was evident that much might be saved to the farmer, when he adopted a system by which the horse ate all that was set before him; and by degrees it was found out that, even food somewhat less nutritious, but a great deal cheaper, and which the horse either would not eat, or would not properly grind down in its natural state, might be added, while the animal would be in quite as good plight, and always ready for work.

Chaff may be composed of equal quantities of clover or meadow hay, and wheaten, oaten, or barley straw, cut into pieces of a quarter or half an inch in length, and mingled well together; the allowance of oats or beans is afterwards added, and mixed with the chaff. Many farmers very properly bruise the oats or beans. The whole oat is apt to slip out of the chaff and be lost; but when it is bruised, and especially if the chaff is a littled wetted, it will not readily separate; or, should a portion of it escape the grinders, it will be partly prepared for digestion by the act of bruising. The prejudice against bruising the oats is, so far as the farmer's horse, and the wagon horse, and every horse of slow draught, are concerned, altogether unfounded. The quantity of straw in the chaff will always counteract any supposed purgative quality in the bruised oats. Horses of quicker draught, except they are naturally disposed to scour, will thrive better with bruised than with whole oats; for a greater quantity of nutriment will be extracted from the food, and it will always be easy to apportion the quantity of straw or beans to the effect of the mixture on the bowels of the horse. The principal alteration that should be made in the horse of harder and more rapid work, such as the post-horse, and the stage-coach horse, is to increase the quantity of hay, and diminish that of straw. Two trusses of hay may be cut with one of straw.

Some gentlemen, in defiance of the prejudice and opposition of the coachman or the groom, have introduced this mode of feeding into the stables of their carriage-horses and

hackneys, and with manifest advantage. There has been no loss of condition or power, and considerable saving of provender. This system is not, however, calculated for the hunter or the race-horse. Their food must lie in smaller bulk, in order that the action of the lungs may not be impeded by the distension of the stomach; yet many hunters have gone well over the field who have been manger-fed, the proportion of corn, however, being materially increased.

For the agricultural cart-horse, eight pounds of oats and two of beans should be added to every twenty pounds of chaff. Thirty-four or thirty-six pounds of the mixture will be sufficient for any moderate-sized horse, with fair, or even hard work. The dray and wagon horse may require forty pounds. Hay in the rack at night is, in this case, supposed to be omitted altogether. The rack, however, may remain, as occasionally useful for the sick horse, or to contain tares or other green meat.

Horses are very fond of this provender. The majority of them, after having been accustomed to it, will leave the best oats given to them alone, for the sake of the mingled chaff and corn. We would, however, caution the farmer not to set apart too much damaged hay for the manufacture of the chaff. The horse may be thus induced to eat that which he would otherwise refuse; but if the nourishing property of the hay has been impaired, or it has acquired an injurious principle, the animal will either lose condition, or become diseased. Much more injury is done by eating damaged hay or musty oats, than is generally imagined. There will be sufficient saving in the diminished cost of the provender by the introduction of the straw, and the improved condition of the horse, without poisoning him with the refuse of the farm. For old horses, and for those with defective teeth, chaff is peculiarly useful, and for them the grain should be broken down as well as the fodder.

While the mixture of chaff with the corn prevents it from being too rapidly devoured and a portion of it swallowed whole, and therefore the stomach is not too loaded with that on which, as containing the most nutriment, its chief digestive power should be exerted, yet, on the whole, a great deal of time is gained by this mode of feeding, and more is left for rest. When a horse comes in wearied at the close of the day, it occupies, after he has eaten his corn, two or three hours to clear his rack. On the system of manger-feeding, the chaff being already cut into small pieces, and the beans and oats bruised, he is able fully to satisfy his appetite in an hour and a half. Two additional hours are therefore devoted to rest. This is a circumstance deserving of much consideration, even in the farmer's stable, and of immense consequence to the post-master, the stage-coach proprietor, and the owner of every hard worked horse.

Manger food will be the usual support of the farmer's horse during the winter, and while at constant or occasional hard work; but from the middle of April to the end of July, he may be fed with this mixture in the day and turned out at night, or he may remain out during every rest day, A team in constant employ should not, however, be suffered to be out at night after the end of July.

The farmer should take care that the pasture is thick and good; and that the distance from the yard is not too great, or the fields too large, otherwise a very considerable portion of time will be occupied in catching the horses in the morning. He will likewise have to take into consideration the sale he would have for his hay, and the necessity for sweet and untrodden pasture for his cattle. On the whole, however, turning out in this way, when circumstances will admit of it, will be found to be more beneficial for the horse, and cheaper than soiling in the yard.

The horse of the inferior farmer is sometimes fed on hay or grass alone, and the animal, although he rarely gets a feed of corn, maintains himself in tolerable condition, and does the work that is required of him: but hay and grass alone, however good in quality, or in whatever quantity allowed, will not support a horse under hard work. Other substances containing a larger proportion of nutriment in a smaller compass, have been added. They shall be briefly enumerated, and an estimate formed of their comparative value.

In almost every part of Great Britain, Oats have been selected as that portion of the food which is to afford the principal nourishment. They contain seven hundred and forty-three parts out of a thousand of nutritive matter. They should be about or somewhat less than a year old, heavy, dry, and sweet. New oats will weigh ten or fifteen per cent. more than old ones; but the difference consists principally in watery matter, which is gradually evaporated. New oats are not so readily ground down by the teeth as old ones. They form a more glutinous mass, difficult to digest, and, when eaten in considerable quantities, are apt to occasion colic and even staggers. If they are to be used before they are from three to five months old, they would be materially improved by a little kiln-drying. There is no fear for the horses from simple drying, if the corn was good when it was put into the kiln. The old oat forms, when chewed, a smooth and uniform

mass, which readily dissolves in the stomach, and yields the nourishment which it contains. Perhaps some chemical change may have been slowly effected in the old oat, disposing it to be more readily assimilated. Oats should be plump, bright in colour, and free from unpleasant smell or taste. The musty smell of wetted or damaged corn is produced by a fungus which grows upon the seed, and which has an injurious effect on the urinary organs, and often on the intestines, producing profuse staling, inflammation of the kidneys, colic, and inflammation of the bowels. —*Youatt on the Horse.*

Drink and Shade for Stock.

One essential requisite in all pasture-fields is an abundant supply of *water* for stock to drink. Both cattle and horses drink largely, and sheep grazing early on the dewy grass, do not require so much water to keep them in a healthy condition; still, when there is no dew, they do drink water. The proper construction of a watering-pool is sadly misunderstood in this country. The entrance to it generally consists of poached mud of at least half a foot in depth, and to avoid this, the animals go into the water before they drink, when, of course, it is at once rendered muddy. Not unfrequently there is scarcity of water, and if there is just sufficient supply to prevent the pool being evaporated to dryness, the water is rendered almost stagnant. So obvious are the objections to this mode of administering so necessary and wholesome a beverage to the brute creation as water, that all that seems necessary to an amendment of the system is to point out its inconveniences. True, in some cases, tanks of wood or stone are provided in fields, which are supplied from some adjoining spring, or even pump-well, and as far as the quality of the water is concerned, this is a much better mode of supplying it than in pools; but this mode, good as it is as far as it goes, does not provide all the requisites of a good watering-pool. In hot days, a walk through a pool is very wholesome to the feet of cattle, and in dry weather, a stand for some time among water is an excellent preventive of that troublesome complaint, the foot-sore. The external application of water in this manner allays inflammation, and prevents irritation, and permits animals to take their food in peace even in scorching drought. Besides the tank of a pump-well is not unfrequently neglected to be filled—because in cold and rainy weather it is scarcely visited by the cattle, in hot weather it is supposed to be viewed with the same indifference; and, even where tanks are duly attended to for cattle, there are none set down at a lower level for sheep. A watering-pool should be securely fenced, as cattle are very apt to push one another about while in it, and for that reason it should also be roomy. It should be of considerable length and narrow, to allow access to a number of animals at the same time, if they choose to avail themselves of it; and I have often observed cattle delight to go to the water in company. Pools are usually made too small and too confined. The access to them should be made firm with broken stones in lieu of earth, and gravel placed on its bottom keeps the water clean and sweet, while the water should flow gently through the pool.

The want of *shade* in pasture-fields is also a sad reflection on our farmers. Observe, in summer, where the shade of a tree casts itself over the grass, how gratefully cattle resort to it, and where a spreading tree grows in a pasture-field, its stem is sure to be surrounded by cattle. The stirring breeze under such a tree is highly grateful to these creatures; and such a place affords them an excellent refuge from the attacks of flies. In cold weather, also, observe how much shelter is afforded to cattle by a single tree, and how they will crowd to the most wooded corner of a field in a rainy day, even in summer. Ought not such indications of animals teach us to afford them the treatment most congenial to their feelings? I am no advocate for hedge-row trees, even though they should cast a grateful shade into a pasture-field, and still less do I admire an umbrageous plane in the middle of a field that is occupied in course with a crop of grain or turnips; but similar effects as good as theirs may be obtained from different agencies. A shed erected at a suitable part in the line of the fence of a field, would not only afford shade in the brightest day in summer, but comfortable shelter in a rainy day, or in a cold night in autumn. Such an erection would cost little where stone and wood are plenty on an estate, and they could be erected in places to answer the purpose of a field on either side of the fence when it was in grass. But no matter what it may cost, when the health and comfort of stock are to be maintained unimpaired by its means. The cost of a shed may, perhaps, in this way be repaid in the first year of its existence, and it would stand, with slight occasional repairs, during the currency of a long lease. When such an erection is properly constructed at first, it is surprising how many years it will continue to be useful with a little care. Let it be roomy, and its structure light, as it may be roofed at a moderate cost with zinc, or composition of some sort,

or tiles, when they are manufactured in the neighbourhood. It may be troublesome to carry straw for litter from the steading to a shed situate at a distance, but there is no occasion for straw for litter in summer; the rough grass from an adjoining plantation or ditch will supply litter, and the dung at any rate should be shovelled up and carried away before it becomes uncomfortable to the animals. I should like to see a farm with such a shed erected in it for every two fields.—*Stephens' Book of the Farm.*

A Hint to Farmers.—Some time about the middle of the last century, a landed proprietor in one of the midland counties, resolved to keep his property in his own possession. A little time convinced him, as it has frequently done others, that a landlord is his own worst tenant. He, therefore, let one-half of his estate to a person who was punctual in paying his stipulated rent. About ten years after this arrangement, he found difficulties increasing, so that he was forced to raise money, and having great confidence in his tenant, he consulted him upon the best manner in which it could be done. "Why, by selling that part of your estate which I possess, and reserving that which you still occupy." "Yes, but money is scarce; where am I to find a purchaser?" "Myself." "You, who came in straitened circumstances to occupy at a high rent only half of the property upon which I, the proprietor of the whole, was nearly beggared by farming! How are you enabled to purchase a moiety of my estate?" "Simply because you, lying in bed, said to your servants, *Go!* do so and so; while I, rising before mine, said, *Come!* do so and so. All my prosperity rests upon knowing the difference between *Come, and Go!*"

THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

Philadelphia, Second Month, 1848.

From the following statements, it appears that United States flour is quite as cheap in Liverpool as in our own city. It is difficult to comprehend, why, with our abundant crops, and the prices abroad of bread stuffs, we should find our farmers able to obtain so ample a remuneration for their labours. Butter may be quoted at 25 to 30 cts. in our market, pork $6, and beef from $6 to $7.

"For the six weeks ending January 8, 1848. Sterling reduced to United States money, 24 cents to the shilling:

Wheat	$1 58
Barley,	93
Oats,	61¼
Rye,	93
Beans,	1 34½
Peas,	1 40

N.B.—The bushel of wheat weighs 60 lbs., and the quarter of eight bushels 480 lbs. Oats, 45 lbs. per bushel.

"January 15th—Indian Corn at Liverpool was 32s. per quarter of 480 lbs.. equal to 96 cents per bushel of 60 lbs. Indian Meal per barrel of 196 lbs., 15s., equal to $3 60.

"U. S. Flour 28s. to 29s., equal to $6 72 and $6 96 per barrel."

Our friend, M. B. Bateham, of the Ohio Cultivator, will accept thanks for a copy of the *Transactions of the Nurserymen and Fruit Gardener's Convention*, held at Columbus, in the 9th month last. The discussions pertaining to the objects of the convention, were animated, and they concluded to adopt as a standard in the classification of fruits, Downing's work on the Fruits and Fruit Trees of America.

Frequent inquiries are made in relation to the mode of using Poudrette; and as the season for applying it is near at hand, it may be well to state for the information of such as have not hitherto become familiar with it—that when applied to the corn in the hill, about one gill is generally used; it may be dropped either before or after the corn, and covered up with it. In this way, 8 or 10 bushels are requisite for the acre, according to the distance of the hills of corn. When put on wheat broad cast, at this season of the year, from 20 to 40 bushels may be spread; and about the same quantity when applied in the fall, and harrowed in with the seed. Many applicants were unable to procure the Poudrette, last spring: we were unable to satisfy the demand. There is now a good supply on hand, though not to so large an amount as we had a year ago. It is suggested to our friends to apply early in the season; if it be postponed until near the period of using it, the throng is so great, that even if it can be procured at all, there is frequently, and of necessity, a considerable delay in forwarding it. For present prices, see the last page.

The quantity of rain which fell in the 1st month 1848, was ..... 2.30 in.

Penn. Hospital, 2*nd mo.* 1*st.*

Poudrette.

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It is issued on the fifteenth of every month, in numbers of 32 octavo pages each. The subjects will be illustrated by engravings, when they can be appropriately introduced.

Terms.—One dollar per annum, or five dollars for seven copies—*payable in advance.*

All subscriptions must commence at the *beginning* of a volume. Having lately struck off a new edition of one or two of the former numbers, which had become exhausted, we are now able to supply, to a limited extent, any of the back volumes. They may be had at one dollar each, in numbers, or one dollar twenty-five cents half-bound and lettered.

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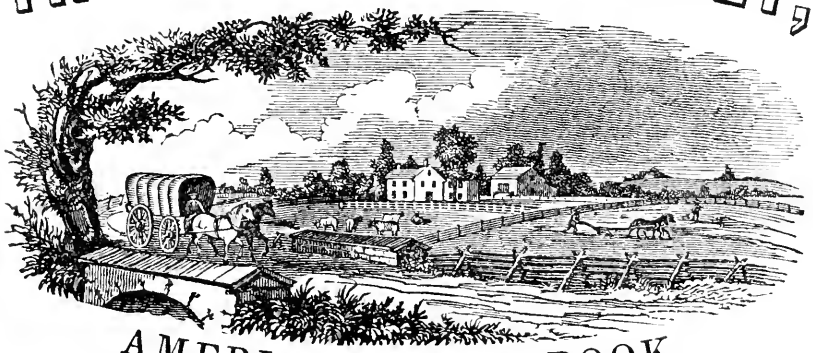
By the decision of the Post Master General, the "Cabinet," is subject only to newspaper postage.

Joseph Rakestraw, Printer.

THE FARMERS' CABINET,

AND



AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—LIEBIG.

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Price one dollar per year.—For conditions see last page.

Agricultural Discussion--Manures--The Potatoe Rot.

January 27th.

JUDGE CHEEVER, of Saratoga, presided, in the absence of the President.

Col. Johnson stated that the question for discussion was, in continuation from the meeting of last week, upon the subject of Manures.

This was a subject in which all practical farmers were greatly interested, and it was hoped and expected that such as were present would give to the meeting their personal experience and the results of any experiments which they might have made. Mr. J. believed that much good would be the result of these discussions, for aside from the facts and information which were elicited in these meetings, they had a tendency to awaken interest and inquiry among the farmers in all parts of the State. Since the last meeting, he had received a letter from a gentleman residing in one of the river counties, who had read the discussions in the newspapers, expressing his deep interest in them, and suggesting a subject for the next discussion. Mr. J. read the letter, more for the purpose of showing that there was a spirit of inquiry awakened among the farmers abroad,—a fact which was still better evinced in the extensive correspondence of the Society. He remarked also, that he should propose that at the conclusion of the discussion of any particular subject, those present should be called upon to give their opinion with regard to it—for unless a result of this kind was reached, the object would be in a great measure lost, we should not know what conclusion we had reached in our own minds upon hearing the differing statements presented. This was the plan, he said, in all the English Societies, and a very good one.

Mr. Coe, who had suggested the question before the meeting as a subject for discussion, had merely thrown it out, he said, for the purpose of getting the opinions of others who had experience, and to solicit inquiry, and not because he understood the subject himself. It had occurred to him that there might be something lost in the decomposition of manure, whether thrown together in heaps, placed under cover, or otherwise. That the warmth which arises during decomposition and escapes in the form of steam, might be imparted to the soil, if the manure was buried in it while in a fresh or undecomposed state. He was not now familiar with what had been written on this subject, but it occurred to him that Sir Humphrey

Davy, in experimenting with manure, had been able to produce a marked effect from the steam which arises from it. He (Mr. C.) however, only desired to elicit inquiry on the subject.

Mr. Howard supposed that in deciding upon this question, the different circumstances of each individual farmer must be considered. Some are so situated, that from the very fertility of their soil, little manure is needed. Others need to husband all they can obtain, and may still fall short of their necessity. To the latter class of farmers, this subject was one of considerable importance. He suggested that considerable might be added to the value of manure by composting. There were many waste materials about the farm, such as litter, muck, &c., which may be very valuable if applied to the compost heap, and passed through a process of fermentation. The heaps should be so placed that the liquids of the barn-yard might fall upon them. Some farmers adopt the plan of conveying this liquid to vats, and then applying it to the compost heap.

The degree of fermentation necessary will in a measure depend upon the quality of the soil and the kind of crops for which the compost is intended. To the small grains, raw manure is considered unfavourable, as tending to produce too short a growth of straw, and predisposing it to rust. In all its first stages of decomposition, manure was liable to throw off gasses, and it should, therefore, be combined with matter which would prevent their escape. That anything is *added* by fermentation, he did not suppose, but by bringing certain substances under the operation of this process, the amount of the aggregate value of manure is increased. Sir Humphrey Davy, to whose experiments allusion had been made, had considered that something valuable was lost in the steam escaping from the manure heap. He placed a quantity of stable manure in the soil, if he (Mr. H.) recollected right, and when it had reached a high degree of fermentation, placed pipes over it and carried the steam to some distance, upon a grass plot. In a short time the peculiar greenness of the grass was remarked by every one; and it was only accounted for from the gasses of the manure conveyed to it through these pipes. It has been observed often before, that he who allows the smell arising from his manure heap to offend his olfactories, is permitting the escape of an agent, which if applied to his crops, would be of great advantage to them. In sandy soils the benefit of composting was particularly observable. In Massachusetts there existed, along Connecticut river especially, a large extent of sandy plains, upon which various experiments had been tried for the purpose of bringing them to a state fit for cultivation. The farmers in that vicinity had told him that they had used long manure with very little advantage; but a marked effect had been produced by the application of composted manures. It seemed, in connection with the clover and the grasses, to bind the soil together, and make it more firm, so that it better resisted the effects of drought. There were other questions connected with this subject; as to the best kind of manure, and the best method of application, which he would leave to others to speak upon.

Mr. Bement had often told his story before, but had no objections to relate again his experience in this matter. He considered the use of manure as all-important to the farmer; and had taken every means to increase his manure heap, and tried many experiments in its application. One year, upon the advice of the late Judge Buel, he had put twenty loads of unfermented manure on a field proposed for ruta bagas. He sowed afterwards at the usual time, but the crop came up tardily, and was destroyed, when it did appear, by the flies. The next year he used composted manure on the same field, and had a good crop. In almost every instance, he found the composted manure of greater advantage than that applied fresh from the barn-yard; and that it was better to harrow it in or plough it in shallow, than to turn it under the first furrow. His neighbour, a practical farmer, had laughed at him for using manure from his compost heap as a top-dressing on meadow land; but the result of that experiment convinced his neighbour that he had better try it himself. Mr. B. collected manure from all his stables, the weeds from about his fences, stalks from his garden, ashes, and all the refuse of his farm, and mixed together in his compost heap. He had derived great benefit from the use of anthracite ashes, both as a top-dressing, and for his crops. He had doubled his crop of hay by the application of these ashes alone, and brought out clover where it had never appeared before. In a stiff clay soil, he considered them invaluable. The cinders collected by the locomotives in passing from Albany to Schenectady he had procured, to the amount of 800 or 1000 bushels, and placed them in his compost heap, with great success. He had applied the cinders to his onions separately, and had an unusual crop. He had also used crushed bones, and on his corn crop particularly, with great success. On turning up the roots, he found them fairly fringed with the bone dust. The great difficulty in this species of manure was the small

supply, and the difficulty in getting them properly ground.

Judge Cheever said he had not made experiments with an accuracy that would enable him to give tests, nor form results which could be relied upon. He had tried experiments, however, more or less, all his life, and taken some observations of results. From his own experience he had arrived at the conclusion, that manure was of the first consequence to the farmer in the cultivation of his crops. The success of cultivation depends mainly on the process of ploughing and manuring. Bad ploughing would defeat a crop; and the soil which requires it, will not produce good crops without manure. To decide what kind of manure his soil requires, the farmer should have it analyzed. He might find out this by experience, but at a vastly greater expense than the small sum he would have to pay a good chemist for the information. All good soils contain more or less of organic matter, such as decayed vegetables, or fibrous matter of some sort. When these are absent it is vain to cultivate. Lime is also present, either as a carbonate, sulphate or phosphate. Magnesia is also an important material of soils, though its proportion is necessarily small, compared with the amount of lime. Potash is another material ingredient; and also ammonia, or nitric acid. By obtaining an analysis, he will discover in which of these necessary component parts his soil is deficient, and thus by being able to supply them, advance his crops. If he wishes to secure a greater supply of vegetable matter, he can readily find it in his compost heap. If he wishes lime, the cheapest way is to procure the article itself. If ammonia, by a mixture of various materials, he can evolve the gasses which produce the salts.

Manure fresh from the stable he considered the best for all practical purposes within reach of the farmer. This may be improved in quality and increased in quantity by the manner of treatment. It is important to save the liquid manure—the urine of your stock—and in an available shape, if possible. There are different modes of preserving it adopted, both in Europe and in this country. Some consider that having a cistern under the stable floor is a good way; but there were objections to that. In the first place, it was expensive, and again evaporation carried off many of its valuable qualities. Observation would teach the farmer that there was a constant departure of a valuable agent from this deposite—and that agent reduced to subjection, or brought availably into possession, was of great importance. He (Judge C.) adopted the plan of an embankment around his barn-yard, which formed a sort of basin, into which he put once or twice a year,—when he did his duty—all the muck or refuse vegetable matter and peat, within his reach—everything which would be a good absorbent of the liquid manure. Where he stabled his cattle, he had a flooring of muck, covered with straw, and in clearing the stables, all that had become saturated with urine was removed to his compost heap, and the whole sprinkled over with the sulphuret of lime—plaster—or with lime itself. The object of this was to fix the ammonia, which would otherwise escape. He found by his own experience, that one yard of manure thus treated, was worth two or more of that scraped up in the barn-yard, which has been leached by the rains of a whole season. The water dissolves valuable salts, and they are thus carried away, and unless they are carried to muck, or other material placed on the ground to catch them, are lost.

If he were called upon to answer the question whether fermented manure, or that in a raw state was the most beneficial, he should decidedly vote in favour of that in a crude state. If any one doubts that it loses anything by lying, let him take it fresh into the field, and after allowing it to lie a few days remove it, and witness its effect upon the soil or crops. Just so much as passes into the soil, is lost while lying in the barn-yard. He believed it was always better to have the compost heap under cover. Then, with a proper mixture of lime or alkalies, to fix the gasses, the value of the manure is greatly increased. By taking solid matter to mix with liquids, and fixing the gasses by the application of lime, either calcined or quick, or plaster, a much greater per centage of valuable matter is obtained than in any other way. If permitted to take the weather, it constantly loses; and the sooner you can bring it in connection with your crops the better. It will then not only tend to develope the growth of straw, but go to perfect the growth of the small grains. It is found that in the kernel of grain, there is much more phosphate than in the straw. In a kernel of wheat, for instance, there is 45 per cent., while in the straw there is but 5 or 6 per cent. This valuable agent is what is lost by allowing the manure to lay exposed to the weather. If, therefore, the farmer desires to promote the growth of straw particularly, he would advise the use of rotted manure.

Manure contains all the essential ingredients to make a good soil—phosphates, carbons, magnesia and ammonia—and all soils have sufficient of sillica. If not robbed of

its best qualities by exposure, it contains essential qualities to produce good crops. In applying it, it should not be buried deep in the ground, but placed as near to the surface as it can be without exposure to the action of the sun; so that the rain in passing through it, may carry the gasses downward, but not so far as to be beyond the reach of the crops.

Dr. Ward, of Albany, desired to call the attention of farmers to the use of peat as a manure. He had no doubt that it was an absorbent of the most valuable kind, having used it for three years with very satisfactory results. This, which had been hitherto regarded as of little consequence, he found to contain valuable salts, which had been absorbed in their passage through the soil, carried down by the rains, and there become locked up by reason of the superabounding acids. Mixing it in the compost heap with the excrements of animals, it is brought in contact with other and antagonist salts, whereby they become dissolved, and add a valuable material to the compost. He had used muck with lime upon an exhausted soil, with marked effect. One field, where three years since nothing grew but mullens, he had been able to reclaim by the use of this manure, although the farmer of whom he purchased it advised him not to attempt its cultivation—oats, he thought, would certainly not be able to stand, if sowed there. He had also used the charred cinders dropped by the locomotives, alluded to by Mr. Bement, and found them a valuable agent. Around his fruit trees he first placed a layer of lime, and then covered the soil for some distance with the cinders. Upon young fruit trees especially, the effect had been very good.

Mr. Pettibone, of Oneida county, was called upon for his views on this question, and stated that he had been in the habit of using manure very lavishly, because he always had a great plenty, keeping and stabling a large stock of cattle and hogs. So far as the views of the Chairman (Judge Cheever) are in favour of applying manure in an unfermented state, he concurred with him. He believed that he had derived more benefit from it, upon a soil of clay and loam, by applying it in a green state, and putting it out of the reach of the sun and air, than by any other mode, particularly with regard to hoed crops. But allowing it to lie for a a year or so in the yard, it became light, like chaff; and although he had never attempted an experiment with it in this state, he had supposed it to be worth very little. He had used it as a top-dressing for his meadows, putting it on six or eight inches thick, and found it very beneficial. At first it would turn the grass yellow, and mat it down, but it soon after recovered its shade, and sprang up with new life. All his manure came from the stable, and his stock were fed principally upon grain, making a very rich material, which would not be likely to ferment immediately. On wheat, he found it apt to produce a too great growth of straw. One year his crop was of an excellent quality, and it was not affected by the rust. He found it better to apply the manure first to his corn-field, then sow with barley and afterwards with wheat.

It might be interesting to some, and he related an experiment with a crop of potatoes. He applied to a quarter of an acre, a wagon load of manure, composed of two-thirds of ashes, five or six bushels of lime and plaster, and about a half bushel of salt. At first he put a handful in the hill, after dropping the potatoes; but upon reflection fearing the effect of the lime, removed it, and put a shovelful upon the outside and top of the hill. The result was that he had an excellent crop, entirely free from rot. Upon the same plat, in front of his house, he had grown potatoes for five or six years. He planted the round pink-eyes, about the first of May, which is considered early. On a piece of new land he planted another lot of potatoes, and found them nearly all rotten. His neighbour, who planted near his first potatoe patch, found his fruit rotten. In his section, the potatoe is quite generally affected with the rot.

Col. Johnson observed that statements in regard to the potatoe disease were very contradictory. The State Agricultural Society had collected much testimony on the subject, considerable portions of which was favourable to early planting; but other statements were the reverse. One of the competitors for the premium on farms, at the late meeting of the Society, had stated that all his early planted potatoes rotted, while all his late ones were saved.

Dr. Ward's experience was directly the reverse of that.

Mr. Butler, of Westchester, had planted at three different periods. The earliest were free from rot, the next earliest were affected, and the latest were nearly all rotten.

Mr. Bement gave his experience in the use of three different kinds of seed, giving the preference to the Carter variety, as producing the most sound fruit.

Col. Johnson said the Carter potatoe, not only in this State, but throughout New England, was found to be rotten last year.

The Chair also related the result of his own planting, which had convinced him that

the disease first attacked the stalk, and afterwards reached to the tuber. Early planting he recommended as likely to bring the potatoe to perfection before the disease made its appearance.

Col. Johnson said in reply to this, that an analysis of the rot showed that the disease did not originate in the stalk, but first attacked the tuber of the plant. Indeed, all experience was at fault, and no two accounts scarcely agreed as to the origin or cause of the disease. The subject was an endless one, if commenced, and he suggested that it should not go further at present.

Mr. Comstock, of Oneida, offered the following resolution, as the sense of those present, in view of the discussion which had been listened to:

Resolved, That in the judgment of this meeting, it is generally most expedient to apply manures in an unfermented state over clayey or stiff soils, and particularly for hoed crops, and that it should be well incorporated with the soil; on lighter soils, whether of a sandy or gravelly character, it is far more profitable to make the application in a fermented compost, for nearly if not quite every kind of crop.

The resolution was agreed to without dissent.—*Albany Evening Journal.*

For the Farmers' Cabinet.

Agricultural Implements.

Mr. Editor,—On a recent visit to the Agricultural Implement Depository of Prouty & Barrett, in Market street, No. 194½, where, as the late Mr. Charles Roberts of Arch st., once said, "If I have half an hour to spare, I spend it amidst an almost endless variety of machinery, from an apple-parer to a thrashing machine," I observed a platform dog-power of very neat construction, to which might be attached a revolving, as well as vertical, or dash butter-churn, with the greatest facility. But, as the machine is calculated for one dog only, I would suggest, as there generally are several of these animals kept on the farm, that the platform be widened, so as to admit two, or even three, to operate at the same time; thus increasing the power, at no increase of expense.

But I have long thought, that the churning of cream is the legitimate province of the bull—the only idle individual on the farm—whose great weight would thus be brought finely into play, with much benefit to his bodily health, and conducive to his greater usefulness. Nor do I consider it at all above his means, to turn to, and cut chaff for the horses, as well as cows, at leisure hours; which, with a 12 Knife Hovey's Straw, Hay and Stalk Cutter, he could easily perform, at the rate of more than a bushel per minute.

By the way, Mr. Editor, what has become of the Fodder Cutter patented by Richardson, and exhibited at the late Philadelphia Agricultural Society's meeting, which received a premium at the hands of the Committee on Implements, and was considered by many as likely to supercede the use of all others? It was an easy-working implement in the hands of those whose interest it was to attend to it, and performed well; but I could but observe, that although it was kept perpetually going, there appeared a very small heap of cut chaff at the end of a whole day's work; which, to say the least, would have been augmented to twelve times the quantity, by a Hovey's 12 Knife Implement; making twelve cuts at a revolution, against the single and solitary cut per revolution, of the Richardson; which I could but consider a sort of retrogade movement, in the science of utilitarianism. Is it true, that, like the Barnaby & Moore Plough, this premium Chaff-cutter has disappointed the expectations of its friends, after being honoured with the award of a Society, to which we look with confidence and satisfaction, while forming our judgment on subjects so important to the agricultural community? I fear so, I must confess; but would be glad to receive information through the pages of the Cabinet. D. C.

Philadelphia.

Mode of Raising Corn.

Mr. Lawton of Great Barrington, opened the discussion, and remarked that, no doubt every one present who knew anything about raising corn, had a system of his own, and believed that his system was a little ahead of his neighbour's. He thought this feeling prevailed to too great an extent, and did much towards closing the door of information against improvement. Such was the case with himself, and though he believed that his manner of cultivation produced as large crops as any other, still he would not ask any person to receive or entertain any thing more of what he might say, than they found to be in keeping with plain common sense and truth. Mr. Lawton then introduced the results of six experiments made by Mr. Geddes, of Cayuga county, New York, for the purpose of determining the distance at which corn should be planted, and the manner of application, and best kind of manure.

The first, in the year 1837, was as follows: The ground was ploughed six inches

deep about the first of May, and planted on the third or fourth; hills three feet apart; six kernels in the hill; fifty loads of half-rotted manure were spread on after ploughing, and harrowed in as well as it could be; besides this, a hoe-full of the best compost manure was put into the hill. It was hoed twice, the cultivator being used—and the product was 70½ bushels, which, at 50 cents per bushel, amounts to $35 25. The cost of cultivation was $20 88, leaving a balance of $14 37 for the use of the land.

In the second experiment the hills were three feet by two apart, six kernels in the hill, without manure; cost of cultivation, $9 12; product, $30 12 to the acre, leaving a balance of $21.

In the third experiment, hills were made same distance as before, six kernels in the hill; was manured by filling each furrow as it was ploughed, full of barn-yard manure, unfermented, at the rate of 150 loads to the acre; expense of producing, $29 37; product, 70 bushels, amounting to $35; balance for use of land, $5 63.

The fourth experiment was the same in regard to distance and the number of kernels; manured with coarse manure, in the same way, and also with a top-dressing of manure half-rotted, at the rate of 25 loads to the acre; product 80 bushels—cost $36 37—leaving $3 63.

In the fifth experiment the corn was planted in drills three feet apart, the corn was dropped four inches apart—25 loads of half-rotted manure was applied after ploughing, as a top-dressing, to the acre,—cost, $18 75; product, 55 bushels—$27 50; leaving $8 75 for use of land.

In the sixth experiment the corn was planted in hills three feet by two, six kernels in the hill, and 25 loads of manure applied to the acre. The cost was $15 56—product 65½ bushels—$32 75—leaving for use of land $17 10. In each of these experiments plaster was used, which was not taken into the account.

In reply to a suggestion from Mr. Goodale, Mr. Lawton proceeded to give an account of his *own* manner of cultivating corn. He ploughs his ground after getting on his manure, of which he intends to apply 20 loads to the acre; and harrows the ground well before furrowing. He then takes a sharp plough and furrows down to the sheet sward, and then with a dray two feet eight inches, or three feet, marks the other way. He puts from four to six kernels in the hill, and a little plaster or ashes when the corn is dropped—and plaster after the corn is up. In cultivating he uses the cultivator and makes no hill.

Mr. Buckminster inquired as to what was considered a fair day's work for a man at harvesting. In reply, a gentleman—whose name we could not learn—considered 30 bushels of corn a good day's work.

Mr. Hubbard, of Sunderland, stated that a man in his employ preferred to work at 75 cents a day at harvesting, than at three and a half cents per bushel—thus showing that 20 bushels for him, was rather more than a day's work. Mr. H. repeated the inquiries he made at the last meeting in relation to the best mode of cultivating corn; the best mode of applying manures; and whether it is best to make hills or leave the surface smooth.

Mr. Clary of Conway, thought corn should be planted as early as the ground could be prepared. In his vicinity it is the practice to hill but very little. He thought there was no more danger of the corn blowing down than when hilled, and the growth of the corn would be improved. In the application of manure he considered it important to cover up the manure and not leave it to evaporate. He also thought it important to understand the nature of the soil, and the kind of manure applicable to particular kinds of soil. Proper attention should also be paid to keeping clear of weeds, in order that the nutriment may go into the corn and not into weeds. He always intended to have his fields left nearly as level as they were when he commenced on them.

Mr. Clarke of Franklin, preferred in the application of manure to spread it. He hoes his corn three times, thinking that he receives the benefit of the third hoeing in the next year. He makes small hills, believing that the corn grows better. In cultivating, the cultivator is preferred to the plough. He was in favour of planting as early as the 7th, 8th, or 9th of May, as the corn grew more stocky than when planted later. He thought that farmers might raise the Southern corn from fodder as profitably considering the labour expended, as any other crop.

Mr. Wright of Easthampton, thought the oftener corn was hoed the better; and that in hoeing four or five times, the farmer would receive sufficient to recompense him for his additionable labor; he did not think it beneficial to put manure in the hill—it would produce as many suckers as genuine stalks. The suckers should be removed when they appeared, immediately.

Mr. Parker thought rye would be a more profitable crop, if as much attention was paid to it, than corn—thought it was not so useful.

Hon. Mr. Calhoun referred to the difficul-

ties with which the farmer has to contend, and the great diversity of opinion upon a subject so familiar as farming. It was obvious from these discussions, that we could find no substantial authority in regard to the cultivation of corn, even among the farmers themselves. He thought the subject of understanding the character of the soil was too much overlooked, in all crops. Every farmer ought to understand everything in relation to the nature of his soil, and what kinds of soil are best adapted to the different crops, and the best kinds of manures to crops. The want of this knowledge was a serious embarrassment to the farmer. The best remedy for this deficiency in practical knowledge, he thought to be the establishment of a model farm, when science might be brought to the aid of agriculture, and experiments tested in such a manner as to show their importance, and to furnish authority upon which the young farmer, especially, might rely. He thought that if those farmers who had the means would contribute the amount of money they lose in making experiments themselves, to this object, much more light would be obtained upon the subject.—*Mass. Spy.*

True Farming--Great Farming on a Small Farm.

A. Macomber, of Spring Port, Cayuga county, has a farm of only sixty acres, including two public roads. It was originally covered with oak and hickory trees; the soil a clay loam, with limestone pebbles. He keeps three horses, four cows, and thirty-five sheep. His crop this year is 652 bushels plump wheat; 150 bushels oats; five acres corn, very stout; four acres cloverseed; between 30 and 40 tons hay, and more pasture than can be found on any other farm of the size in the county of Cayuga.

He always sows his corn ground with wheat; first haul off the corn, harrow, then plough, then seed, then harrow again three times, and sow *plenty* of cloverseed in the spring. He makes all the straw into manure, and puts most of it on his corn ground. The great secret of this man's success, is in keeping his ground covered either with grain crops, or a heavy mat of clover and timothy grass. He considers the exposure of a naked fallow to the sun of July and August, a sort of necessary evil; that the soil, to be kept strong, should be covered.

In addition to barn-yard manure, Mr. Macomber applies plaster, salt, and ashes broadcast to his crops. He says he was induced to take the Genesee Farmer many years ago. Although no friend to too many experiments or theories, he is a very decided advocate for the union of science with agriculture.

Now I am aware that many farmers who read the foregoing, will say that Macomber must either hire a great deal of *help*, or work very hard himself. Very true; but has he not the product to pay for the labour. He himself avers that the labour of harvesting and securing his crops is the most formidable part of his farm labour. How much better thus to expend money to harvest and secure crops, than waste money and labour in a tardy, slovenly, ill-directed course of farming, which gives no crops to the harvest, or very poor ones.

Such men as A. Macomber are beforehand and in season with all their work; their corn leaves never bleach in a wet season nor curl in a dry one. They keep no old sward to hybernate worms, the affliction of all lazy farmers as well as of those who have too many arable acres. They are the favourites of fortune, because fortune delights to favour those only who court her favours. It is in the tact, intelligence, and good will with which they apply their labours, rather than in the labour itself, which enables them to succeed so well! Such men are strangers to that hopeless egotism, which is the curse of all progress—the nurse of self-willed ignorance and hoary error.—*Genesee Farmer.*

To Make Good Butter in Winter.

We often hear the complaint that butter made in winter is poor. Ours was so for several seasons. It was very slow in coming, and frothy, white, and sometimes bitter; while butter made from the same kind of milk in the warm season was good. I devised many plans for improvement, such as throwing in salt, warm milk, scalding cream, &c., but to no purpose. At length I scalded my milk when brought from the cow, afterwards setting it in either a cold or a warm place, as was most convenient. I mean, I communicated a sufficient heat to destroy the effect which frosty feed has in autumn, or dry feed in winter upon it. Since which time we have made, with 15 minutes churning, purer, sweeter, and more yellow butter than we ever made in summer—and sometimes from the frozen cream gradually warmed. And were it not that the increase of manufactures, the pursuit of fashion, and other causes combined, render helping hands in a dairy room now-a-days very scarce, I should be at the trouble of scalding my milk before setting it during the summer, as well as in the winter; for surely, butter made in this way, possesses a delicious richness and dryness which cannot be found in any other. —*Cultivator.*

Turkeys.

If we call to mind the many and valuable acquisitions from both the animal and vegetable kingdom which have been made subservient to the use of man within comparatively a very recent period, it is not too much to believe that others, of nearly or quite equal value, still remain to reward the labour and pains of a persevering search. There is the whole of central Africa, central Australia, great part of China and northern India,—which have already afforded us so much—and innumerable half-explored or unexplored islands, all waiting to be ransacked for our benefit. And without depending upon those distant regions, we know not yet what we may find at home; seeing that the delicious Seakale—an esculent whose merits are yet unknown to many a family of competent means, living in retirement—has only within the last few years sprung up under our very feet; and the Capercali, by an easy importation, has been rescued from extinction in Great Britain.

Amongst the living tributaries to the luxury of man, the turkey is an example of the results yet to be expected from the exploring spirit of our day. It is the most recent, and, except the hen and the goose, the most valuable of our domesticated birds. We may, indeed, call it quite a new introduction; for what, after all, is a period of 300 years, compared with the time during which man has had dominion over the earth and its brute inhabitants? The obscurity which hangs over the transmission of the turkey from America, and which there is little chance of clearing away, except by industrious ferreting amongst old family records and memorandum books, shows that those who brought it to the old world had no idea of the value of what they were importing; but probably regarded it like any other remarkable production of nature—a macaw or a tortoise. The young would be distributed among friends with the same feeling that golden pheasants and such like are with us; these again would thrive and increase, and the nation would suddenly find itself in the possession of a race, not of pleasing pets, but of valuable, prolific, and hardy stock of poultry. Such I take to be the history of the turkey in England; and the Zoological and Ornithological Societies may hereafter find that some creature that was disregarded, or undervalued, or even yet unobtained, will prove unexpectedly domestic and profitable—it may be the Cereopsis, some of the Indian Polylectrons, or the elegant Honduras turkey;—to further which great object of their association they cannot do better than communicate spare specimens, on the most liberal and encouraging terms, to such persons as they believe competent fairly to test their value.

The varieties of the domesticated turkey are not very distinct. The most so is the Norfolk; the others may all be swept into what is called the Cambridge breed—thus including the bustard and Dutch copper-coloured breeds, which, however, is as much cultivated in Norfolk as the old local stock, and birds of which kind often pass for true Norfolks, because they have been procured from that county. The real Norfolk turkey is more hardy, but less ornamental than the others, and of smaller size. It is entirely black, except the red skin about the head, and a brownish tip to the feathers of the tail and some of those of the back. This gives the bird a rusty appearance, like an old piece of well-worn cotton velvet. The Cambridge sort, when black, have a beautifully shining blueish tinge, like a well-polished boot. The chicks of the Norfolks are black, with occasionally white patches about the head; those of the Cambridge variety are mottled all over with a brownish grey, and are of taller and slenderer proportions. The white individuals of either variety are accidental; this colour is scarcely permanent in their offspring; they are tender, not pleasing to every eye, and altogether not to be recommended. The plumage of the Cambridge breed varies very much; sometimes it is entirely made up of shades of reddish brown and grey, when it is called the bustard breed; sometimes of grey, black, and white, but frequently it approaches very nearly to what we see figured as the wild bird. In the "Naturalist's Library," the hen of the wild turkey, copied from Audubon, is represented with a hairy tuft like that of the cock hanging from her breast. I have not seen this in the tame variety. A hen in my possession that will be four years old next spring (1848) has no symptom of its appearance. The reason why the turkeys seen in our poultry yards do not vie in splendor of plumage with their untamed brethren, is that we do not let them live long enough. A creature that does not attain its full growth till its fifth or sixth year, we kill at the latest in the second, to the evident deterioration of our stock. But let three or four well selected Cambridge turkeys be retained to their really adult state, and well fed meanwhile, and they will quite recompense their keeper by their beauty in full plumage, by their glancing hues of gilded green and purple, their lovely shades of brown, bronze and black, and the pearly lustre that radiates from their polished feathers. In default of

wild specimens, birds like these are sought to complete collections of stuffed birds.

The demand for such large birds among the fowl-dealers, and the temptation to fat them before they arrive at this stage, are so great, that few farmers' wives can resist sending their 18 or 20 lb. "stag"* to market, while a young cock of the year, they think, will answer every purpose next spring as well. Some even deem it an extravagance to keep a turkey-cock at all, if they have not more than two hens, which they would send on a visit of a day or two to a neighbour who has a male bird. The time when the hens require this change of air in spring may be known by their lying down on the ground, as if they were unwell, doing so immediately again, if taken up and made to walk on, which apparent languor is accompanied by a lack-a-daisical love-sick expression of countenance. Last Christmas we ate or gave away all our turkeys—including a magnificent stag, whose image haunts us still—except one hen. The above mentioned plan was necessarily adopted, and the result was from eleven eggs, eight chicks so strong as almost to rear themselves.

When the hen has once selected a spot for her nest, she will continue to lay there till the time of incubation, so that the eggs may be brought home from day to day, there being no need of a nest egg, as with the common fowl. She will lay from 15 to 20 eggs, more or less. Her determination to sit will be known by her constantly remaining on the nest, though empty; and as it is seldom in a position sufficiently secure against the weather or pilferers, a nest should be prepared for her by placing some straw, with her eggs, on the floor of a convenient out-house. She should then be brought home and gently and kindly placed upon it. It is a most pleasing sight to witness the satisfaction with which the bird takes her long-lost eggs, turning them about, placing them with her bill in the most suitable positions, packing the straw tightly around and under them, and finally sinking upon them with the quiet joy of anticipated maternity.

Thirteen eggs are enough to give her; a large hen might cover more; but a few strong, well-hatched chicks, are better than a large brood of weaklings, that have been delayed in the shell, perhaps twelve hours over the time, from insufficient warmth. At the end of a week it is usual to add two or three fowl's eggs, "to teach the young turkeys to peck." The plan is not a bad one; the activity of the chickens does stir up some emulation in their larger brethren; the eggs take but little room in the nest; and at the end of the summer you have two or three very fine fowls, all the plumper for the extra diet they have shared with the little turkeys.

Some ladies believe it necessary to turn the eggs once a day; but the hen does that herself many times a day. If the eggs are marked and you notice their position when she leaves the nest, you will never find them arranged in the same order. A person who obtained 99 chicks from 100 eggs, took the great trouble to turn every egg every day with her own hand, during the whole time of incubation. The result *appears* favourable; but, in fact, only amounts to this, that such officiousness did no harm with such a good, patient, quiet creature as the sitting turkey is, but it would probably have worried and annoyed any other bird into addling her whole clutch. We will at once reject, as utterly absurd and unnatural, all directions to immerse or "try" the eggs in a pail of water, hot or cold.

In four weeks the little birds will be hatched; and then, how are they to be reared? Some books tell you to plunge them in cold water, to strengthen them: those that survive will certainly be hardy birds.* Others say, "make them swallow a whole peppercorn;" which is as if we were to cram a London pippin down the throat of a newborn babe. Others, again, say, "give them a little ale, beer or wine." We know unhappily, that some mothers are wicked

* In Norfolk, turkey-cocks are called stags from their second year upwards.

* Sir J. S. Sebright exposes the folly of endeavouring to make young creatures robust by undue exposure to cold and hardship, an experiment which some men and women are cruel enough to try upon their own offspring. Air and exercise increase the strength of any growing animal, but cold and hunger only dwarf and weaken. We see robust children in extremely poor families, not because they are poor, but because if they were not robust, they would not be alive at all. Sir John, in his "Treatise on improving the Breeds of Domestic Animals," pp. 15, 16, says, "In cold and barren countries no animals can live to the age of maturity but those that have strong constitutions; the weak and the unhealthy do not live to propagate their infirmities, as is too often the case with our domestic animals. To this I attribute the peculiar hardiness of the horses, cattle, and sheep, bred in mountainous countries, more than to their having been inured to the severity of the climate; for our domestic animals do not become more hardy by being exposed when young, to cold and hunger; animals so treated, will not, when arrived at the age of maturity, endure so much hrdship as those who have been better kept in their infant state."

enough to give their infants gin, and we know the consequences.

Give them nothing; do nothing to them; let them be in the nest under the shelter of their mother's wings, at least eight or ten hours; if hatched in the afternoon, till the following morning. Then place her on the grass, in the sun, under a roomy coop. If the weather be fine she may be stationed where you choose by a long piece of flannel list tied round one leg, and fastened to a stump or a stone. But the boarded coop saves her ever-watchful anxiety from the dread of enemies above and behind—the carrion-crow, the hawk, the rat, the weasel; and also protects herself—she will protect her young—from the sudden showers of summer. Offer at first a few crumbs of bread; the little ones, for some hours, will be in no hurry to eat; but when they do begin, supply them constantly and abundantly with chopped egg, shreds of meat and fat, curd, boiled rice mixed with cress, lettuce, and the green of onions. Melted mutton suet poured over barley-meal, and cut up when cold; also bullock's liver boiled and minced, are excellent things. The quantity consumed costs nothing; the attention to supply it is everything.

The young of the turkey afford a remarkable instance of hereditary and transmitted habits. From having been tended for many generations with so much care, they appear naturally to expect it almost as soon as they are released from the shell. We are told that young pointers, the descendants of well-educated dogs, will point at the scent of game without any previous training; and so turkey chicks seem to wait for the attention of man before they can have any experience of the value or nature of those attentions. Food which they would refuse from a platter, they will peck greedily from the palm of a hand; a crumb which would be disdained if seen accidentally on the ground, will be relished from the tip of a finger. The proverb that "the master's eye fattens the horse," is applicable to them not in a metaphorical, but in a literal sense; for they certainly take their food with a better appetite if their keeper stays to distribute it, and *see* them eat it, than if he merely set it down and left them to help themselves.

I believe this to be the case with more domesticated animals than we are aware of, and appears natural enough if we remember how much more we enjoy a meal in the society of those we love and respect, than if we partook of it in indifferent or disagreeable company.

However, there can be no doubt that young turkeys pampered and spoiled for about three hundred generations, have at length acquired an innate disposition to rely on the care of man. Sir Humphrey Davy, in his "Salamonia," believes that a like hereditary instinct is engendered even in fishes, believing that the trout, &c., in unfrequented rivers, are more unsuspicious of artificial flies than those in the streams of Great Britain. "This," he says, "may be fancy, yet I have referred it to a kind of hereditary disposition, which has been formed and transmitted from their progenitors."

At any rate, it is neither a dream nor a guess with young turkey-chicks, to which we will now return. A sitting of wild turkey's eggs does not often fall into the hands of an American game-keeper, if such a person there be, but I am afraid he would find his brood more shy and troublesome than the shyest of partridges or pheasants.

The turkeys, then, are hatched, and we are rearing them. Abundant food for the mother and her young, constant attention to their wants, are the grand desiderata. An open glade in a grove, with long grass, and shrubs here and there, is the best possible location. A great deal is said about clear and fresh water for fowls; but I have observed that if left to their own choice, they will be as content and healthy with the rinsings of the scullery, or the muddiest pool, as with the purest spring. The long grass will afford them cover from the birds of prey; the hen will herself drive off four-footed enemies with great courage. I have been amused with the fury with which a mother turkey has pursued a squirrel, till it took refuge in the branches overhead; what instinctive fear urged her I know not. Insects, too, will abound in such a situation. When the little creatures are three or four days old, they will watch each fly that alights on a neighbouring flower, fix it with mesmeric intensity, and by slow approach often succeed in their final rush. But in the best position you can station them, forget them not for one hour in the day. If you do, the little turkeys will for a time loudly yelp "Ricordati di me," "O then remember me," in notes less melodious than those of a *prima donna*, and then they will be sulky and silent. When you at length bring their delayed meal, some will eat, some will not. Those that will not, can only be saved by a method at all other times unjustifiable; namely, by cramming; but it must be done most gently. The soft crumb of bread rolled into miniature sausages, should be introduced till their crops are full. For drink, many would give wine, I advise milk. The bird wants material, not stimulant. It has been actually wire-drawn. It

has grown all the hours you have neglected it, without anything to grow from. Like a young plant in the fine spring season, it will and must grow; but it has no roots in the fertile earth to obtain incessant nourishment. The roots which supply its growth are in its stomach, which it is your office to replenish. Prevention is better than cure. Such a case ought never to occur in a well-cared for poultry-yard.

When two hens hatch at or near the same time, the two broods may be given to one mother, and the other hen turned out to range. If kept from the sound and sight of her little ones for a few days, she will not pine like the common hen, but will shortly recommence laying, and so produce a later hatch that will be very acceptable the following February and March. Sometimes two hens will choose to sit and lay in the same nest, like the wild birds mentioned by Audubon; but it is better not permitted. They will not quarrel, but alternately steal each other's eggs, and run the chance of addling all. A frequent practice is to hatch spare turkeys' eggs under common hens. This answers well in fine dry summers, but not in wet cold seasons. The turkey-poults require to be brooded much longer than chickens; the poor hen will be seen vainly endeavouring to shelter and warm young turkeys nearly as big as herself, till she gives up the task in despair, and leaves them to shift for themselves. It is better to transfer the chicks as soon as hatched to a turkey, and give the hen some fowl's eggs to go on with another three weeks. The improved and less rambling disposition of turkeys that have been reared by a hen is, unfortunately, all imagination, notwithstanding what Cobbett has so beautifully written on the subject. The instinct of the turkey is no more altered by this mode of education than the migrations of the cuckoo are checked by its being brought up by hedge-sparrow. The only way to keep turkeys from rambling, is to feed them well and regularly at home.

The time when the turkey hen may be allowed full liberty with her brood, depends so much on season, situation, &c., that it must be left to the exercise of the keeper's judgment. A safe rule may be fixed at the season called "shooting the red," a "disease," as some compilers are pleased to term it; being about as much a disease as when the eldest son of the turkey's master and mistress shoots his beard. When young turkeys approach the size of a partridge, or before, the granular fleshy excrescences on the head and neck begin to appear; soon after, the whole plumage, particularly the tail feathers, start into rapid growth, and the "disease" is only to be counteracted by liberal nourishment. If let loose at this time they will obtain much by foraging, and still be thankful for all you choose to give them. Caraway seeds, as a tonic, are a great secret with some professional people. They will doubtless be beneficial, if added to plenty of barley, boiled potatoes, chopped vegetables, and refuse meat. And now is the time that turkeys begin to be troublesome and voracious. What can you expect else from a creature that is to grow from the size of a lark to 12 or 14 lbs. in eight or nine months? "Corn sacks, coffers for oats, barn-swallowers, ill neighbours to Peasen," are epithets deservedly earned. They will jump into the potatoe ground, scratch the ridges on one side, eat every grub wireworm, or beetle that they find, and every half-grown potatoe. From thence they will proceed to the Swedes; before the bulbs are formed they will strip the green from the leaves, thereby checking the subsequent growth of the root. At a subsequent period they will do the same to the white turnips, and here and there take a piece out of the turnip itself. They are seldom large enough before harvest to make so much havoc among the standing corn, as cocks and hens and guinea-fowl, or they have not yet acquired the taste for it; but when the young wheat comes up in October and November, they will exhibit their graminiverous propensities, to the great disadvantage of the farmer. The farmer's wife sees them not, says nothing, but at Christmas boasts of the large amount of her turkey money. One great merit in old birds—besides their ornamental value, which is our special recommendation—is that in situations where nuts, acorns, and mast are to be had, they will lead off their brood to these, and comparatively—that is all—abstain from ravaging other crops. It is, therefore, not fair for a small occupier to be overstocked with turkeys,—as is too often the case, and with other things also,—and then to let them loose, like so many harpies, to devastate and plunder their neighbour's fields.

Soon after Michaelmas, it will be time to think of fatting a portion of them. Some families require turkeys very early in the season; but they are like every other immature production, inferior in quality. To eat turkey poults is a wasteful piece of luxury; those who order them are occasionally deceived by a small hen of the previous year. In the Roman markets hen turkeys sell for a bajocco (halpenny) a pound more than the cock, and there are turkey butchers, of whom you may buy the half or a quarter of a bird.

A hen will be five or six weeks in fatting, a large stag two months or longer, to bring him to his full weight. The best diet is barley-meal mixed with water, given in troughs that have a flat board over them, to keep dirt from falling in. A turnip with the leaves attached, or a hearted cabbage, may now and then be thrown down to amuse them. Some use plain oats, but barley-meal is preferable, acting more quickly. Cramming is unnecessary, though it may hasten the process. When they have arrived at the desired degree of fatness, those which are not wanted for immediate use must have no more food given them than is just sufficient to keep them in that state, otherwise the flesh will become red and inflamed, and of course less palatable and wholesome. The turkey differs from the rest of our poultry in being fit for the table after its youth is past. Very few of the large turkeys that are brought to market are less than 18 months old; many are double that age. Nor are they the worse, provided the lady of the house be informed of the circumstance, and so enabled to leave a due interim between the killing and the cooking.

The hen turkey, contrary to the statements of some writers, does now and then erect her tail and strut like the male, and that, too, without any diminution of her feminine virtues. The manners of the cock are not prepossessing; he is vain, ungallant, careless of his young, a bully, though not always a coward, the most selfish creature in the poultry-yard, except the musk-drake, sometimes also apt to be seized with odd fancies that render him useless. Their supposed antipathy to the colour of red or scarlet, I believe to be an unfounded prejudice. They display less individual attachment to man than most other poultry, though they have equally, or more, thrown themselves on the protection of the race of mankind. They are called stupid, but mark the intelligence and amiability displayed by every look and action of a hen with her young. And yet little real alteration of her former manner is apparent. The strut that seemed foolishly pompous now strikes us as justly proud and cautious; the eye in which only affectation was apparent, now glances with anxiety and beams with tenderness. The discordant voice has now an object in its call, and may be heard almost to whisper in subdued notes of gentle affection. Thus even, in the poor bird that we rear, admire and kill, a higher charm and elevation is added by the exercise of those holy affections which the beneficent Creator of all has given us for our comfort.—*London Agricultural Gazette.*

Digestion.

Hunger and thirst are the preliminary steps to digestion; they constitute a law implanted in the animal economy, for the purpose of inducing the living being to take such nourishment as is required to sustain that waste of the system which animated nature is continually undergoing. If the dictates of the sensation of hunger and thirst are rationally obeyed, satisfaction and healthy digestion are the result; but if, on the contrary, these important sensations are neglected, weakness and disease must necessarily ensue. Appetite, or, in its more advanced stage, hunger, teaches animals to seek for solid food, and thirst suggests the propriety of rendering the solid mass more pulpy and dilute by the employment of drink. Experience and reason, both in man and brutes, must in some measure direct the selection of the proper objects to be employed for these purposes. I was some years ago consulted by a worthy individual with regard to the propriety of fasting, as a religious observance. I told him that the sensation of hunger and thirst constituted a most important law in the animal economy, destined by the Creator for the most beneficent purposes; that it ought to be obeyed as a matter of duty, and that if infringed, some prejudicial result would necessarily ensue: because it is no argument in favour of any such experiment upon human life that existence does not terminate upon its adoption, or that the symptoms of some frightful disease are not instantly ushered in. The seeds of future mischief may be sown by one experiment, and may only lie dormant until a second or succeeding infringement shall cause them to spring forth into living activity. In the course of an extensive series of experiments upon cows, it was found that, when they were not supplied with sufficient food during one day, the product of milk was a day or two in reaching its former average; thus demonstrating that the animal had been weakened by the abstinence, inasmuch as it took a longer period to reach its ordinary condition than was required to reduce it. The milk, in such an experiment, corresponds with the muscle and fatty portions of the body of animals which do not supply milk: hence abstinence in all animals must be followed by a diminution of the weight of the body. It has been well remarked by Liebig, that "in the process of starvation it is not only the fat which disappears, but also

by degrees all such of the solids as are capable of being dissolved." In the wasted bodies of those who have suffered starvation, the muscles are shrunk and unnaturally soft, and have lost their contractility: all these parts of the body which were capable of entering into the state of motion have served to protect the remainder of the frame from the destructive influence of the atmosphere. There is no difference in this respect between one set of animals and another. Civilized and savage men, wild and domestic animals, must all be classed under the same category.

In the human species, a morsel of food is grasped by the front teeth of both jaws, which are each supplied with sixteen teeth, making thirty-two in all. In those animals which chew the cud, as they have only one row of teeth, the food is less firmly grasped by the jaws, and there is, therefore, a greater necessity that it should be of a soft and pliable nature. By the assistance of the lips, jaws, tongue, and auxiliary muscles, the food is conveyed into the cavity of the mouth, and by the aid of the tongue and lateral motion of the mouth, it is placed between the opposing jaws, where it is masticated or ground to a proper consistence. But the action of the jaws in grinding the morsel introduced between them, at the same time, elicits the compressing power of the muscles of the cheek upon the parotid gland, which is situated in man in front of the ear, and expels its secreted fluid, the saliva, into the mouth, to assist in comminuting the nutritive matter. Besides this mechanical action, there is, however, a nervous sympathy called into operation. The masticated matter acts upon the tongue and adjacent parts, inducing a sympathy with the glands placed under the tongue, and causes them to pour out their copious contents. The object of mastication or chewing is, therefore, to reduce the food to such a consistence as shall fit it for its reception and proper digestion in the stomach. This is well illustrated in the instance of animals which are not supplied with teeth.

The common fowl, for example, is destitute of these grinding apparatus; but it has a muscular mechanism, termed the gizzard, which powerfully compresses the introduced food, and by means of pebbles and stones, which are a necessary article of food with the class of animals referred to, an artificial substitute for the teeth is provided. In graminivorous animals, we shall find that a substitute for the second row of teeth is provided in the operation of rumination, or chewing the cud. From attention to these facts, therefore, we are taught that the preparatory step of digestion consists in the fine division of solid food by means of the apparatus set apart in the mouth for this purpose, and its mixture with a certain amount of fluid saliva, to render it more dilute.

The importance of the proper grinding of the food, and of rendering it as soluble as possible, can be well appreciated by such individuals as have been the subjects of indigestion from the eructation of morsels of food, of gases, and of acid liquors. It is scarcely necessary to remark, that similar rules are applicable to the inferior animals, and more particularly in the state of confinement to which most of them are more or less subjected, when they are made to minister to the wants of the human species.—*Thomson's Researches on the Food of Animals.*

From the American Agriculturist.

Hydraulics for Farmers.

Every farmer, especially in a northern climate, must be aware that the comfort of his stock through the inclemency of winter is essential to carrying them through that season in the most economical and of course the most profitable manner. To insure this degree of comfort, sheds and stables in which they are protected from driving storms, high winds, and intense cold, are indispensably necessary; for it is now a well established fact with our best stock growers, that the expense of such sheds and stables is fully liquidated by the saving of fodder, and the increase of thrift in the animals in a very few years, probably before the buildings erected for their benefit need their first repairs. And there are other objects gained by the housing system for stock. They are rendered more docile by the operation. The cow or the ox that has been accustomed to be frequently or almost universally housed through the inclement season from the early days of "calfhood," will almost invariably possess excellencies which are seldom found among animals doomed to roam at large and seek shelter where it may, and sometimes where it may not be found—behind buildings or fences, the disjointed sides of which make but miserable pretensions to the objects to which the helpless and ill-fated animal appropriates them.

There is another subject connected with the thrift of the farm yard which is no less important than nice warm stables and good comfortable sheds. That is *water for stock* of which they need a regular supply, as they do of feed or protection. This fact is unquestionable, and therefore needs no comments, as every observing farmer knows full well; yet how often it is the case that the poor

animal is turned adrift to contend with piercing winds and almost impenetrable drifts of snow, while it plods its way to the well remembered spring, the pure, cool waters of which, so often allayed the feverish thirst of summer, to sip the healthful draught that winter's wants require. What hooking and pushing and crowding are often witnessed by the way, and when the already enraged group gather round and in angry dispute, contest each others claim to the sparkling fountain! and how they look, and how they feel when they return to the barn after such a pilgrimage, attended with such conflicts!

Many of our farmers, it is true, have seen the inconveniences and unprofitableness of such a state of things, and have remedied them by introducing pure streams of water into their yards, so that the animal may go to the tub at any time, or at all times when liberated from the stable to take the libations that nature so promptly demands. Those who have done so, have found economy in this, though in some instances, the first cost, from the distance of the spring, involved considerable expense, by the saving of their own time, the saving of the comfort and thrift of the animal, and the saving of manure, which, instead of being left in a line from the barn to the spring and around the spring where it is not wanted, is now deposited in the yard, ready at the farmer's move to be taken to the spot where its value will be most advantageously realized. Hence it must be concluded that it is for the farmer's interest to have a constant supply of pure water in or very near his farm yard, in order that his animals may drink singly or together, when, and as often as they please.

The frequency with which farm buildings are situated on elevations, however, seems in many instances to preclude the possibility of introducing water to them, from the springs, which are often all situated so far below, as to shut off the possibility of getting supplies from them by the usual method of an aqueduct. But another method to accomplish this object has been found, and from its utility has been liberally adopted, and this with a success fully equal to the expectations of all who have adopted it. I refer to the introduction of Benson's hydraulic ram, not that hydraulic rams are a new thing, for Montgolfier, a Frenchman, invented one long ago; but this of Benson's, so simple in construction, so easily kept in repair, and so regular in its operations, is to us northerners altogether new. The first of Benson's I saw, was set up about two miles from my residence, as an experiment in September, 1846. The spring was from ten to twelve rods from the buildings, and down a bank, the descent of which was about forty feet. At the bottom of this bank the farm animals had been obliged to travel through storm, wind, snow, and mud, and over ice, for a full half century or more, and up this doleful way the water for the family use had been carried in buckets, by hand (who does not feel himself growing stooping, while he thinks of it,) for the same long period. The operation of the machine was so satisfactory that the farmer became the purchaser, and in the November following, made it a fixture of his premises, and since that time, has had through its agency, an abundant supply of water for his stock in his yard, and for household purposes, at his door. In a recent conversation with him upon its utility, after a year's trial, he expressed his full satisfaction in its operation and thought that no consideration would induce him to forego the convenience it affords. And thus we see, that a way is fully and completely provided whereby those whose springs are situated lower than their buildings can have them brought within a convenient distance, or if they choose, carried into every stable, or every apartment of the dwelling, with as much facility as convenience requires, at but a little more expense in the outfit than water can be brought down hill in a common aqueduct, and with as great prospect of permanent success in the former as in the latter instance.

W. Bacon.

Richmond, Mass., Jan., 1848.

Long Island Peaches.

It has long been the opinion of many, that the soil and atmosphere of Long Island, from its proximity to the ocean, are unfavourable to the successful cultivation of several of our garden fruits, particularly that of the peach. But when it is considered that the little peninsula of Delaware, which is but a trifle larger than Long Island, produces the peach in the greatest abundance and in the highest state of perfection, all arguments like the preceding will appear fallacious. Moreover, we have an instance before us, where the cultivation of the peach on Long Island has been crowned with the most complete success.

On the 1st of October last, we visited the peach orchards of Mr. John I. Stoothoff, situated on the Rockaway road, directly at the head of Jamaica Bay, six miles from the Atlantic, and two miles south of the village of Jamaica, where they receive the uninterrupted effects of salt air and ocean winds. These orchards are two in number, one con-

taining originally 2,500 trees, five years planted, and the other 1,050 trees, four years from the bud. The soil in which they are planted, consists of a very fine, light sandy loam, poorer than the lands at Flatbush, and similar in character to those of Islip, and several points farther east. The trees were generally planted from 18 to 20 feet apart, and, with the exception of a portion of those of the larger orchard, all appeared exceedingly vigorous, although they had somewhat suffered from mutilation in gathering the fruit. Mr. Stoothoff was about completing his harvest, having been engaged in sending his fruit to the New York markets, since the 12th of August, between which time and the 3rd of October, he sold 2,637 baskets, bringing, in the aggregate, $2,600 18. The trees from which the fruit had not been plucked, at the time of our visit, were actually bending to the ground with excessive weight, and finer-looking peaches we never saw. The varieties principally cultivated, were the red rareripe, early and late malacotones, lemon clings, and Morris whites.

At the time of planting the trees, Mr. Stoothoff cuts off the tap-root, if there be any, in order that the other roots may take a horizontal direction near the surface of the ground, and receive the full benefit of the manure, and the vivifying influences of rains and dews. The first year after he plants his trees, he cuts off the trunks or stems from two and a half to three feet above the ground, in order to allow the future branches to start low and form a bushy head. In winter he prunes his trees, by cutting away all dead wood, and in summer he thins out the superfluous branches, in order to admit the sun and air. In the month of June, and again in September, the earth is drawn from each tree, the roots carefully scraped, all borers cut out with a knife, and the earth properly put back in its place.

Mr. Stoothoff, for two or three years past, has been in the practice of planting asparagus and peas in his orchards, manuring them with wood ashes and stable or barn-yard dung. The cultivation of garden vegetables among fruit trees, however, he does not fully approve. He thinks it preferable to keep his orchards clear of weeds by frequently scratching over the surface with a cultivator, and manuring each tree, within a foot or two of the trunk, with six to ten fish, (moss bunkers,) covering them over with three or four inches of earth. To the last named circumstances and the great care observed in removing the tap-root and extracting the borer, it is probable the success of his peach culture mainly depends.

Mr. Stoothoff has kept an exact account of the products of his two orchards the season past, from which we copy the following, including the amount of sales:—

2,780	bunches of asparagus,	$418 10
431	bushels of early peas,	425 50
261	" late "	185 75
41	" Sickel "	17 25
2,637	baskets of peaches,	2,600 18
		$3,646 78

These orchards contain about twenty-eight acres.—*American Agriculturist.*

Pomeranian Cabbage.

Last spring, says *J. E. Teschemacher*, in a recent communication to Hovey's Horticultural Magazine. Mr. H. Colman sent me from Paris a small quantity of cabbage seed, labelled: "given me as seed of a most extraordinary cabbage.—I have not seen it." This seed I distributed amongst many of my friends, and sowed some myself. When it first came up, the seedlings so much resembled those of the Couve tronchuda sowed in an adjoining patch, that I could not then tell the difference. The result is as follows. The cabbage is of the pine apple form, weighs from six to twelve or fifteen lbs. each, is the purest and sweetest vegetable of the tribe, and not a single plant of all mine, or those of my friends, failed forming fine, hard, solid, heads.

One plant, of which the head was broken off soon after planting out, sent forth four shoots, each of which formed a fine solid head; the four weighed 12 1-2 pounds. Mr. L. Stone, of Watertown, to whom I gave some seed, exhibited this cabbage at the annual exhibition of our Horticultural Society, and he was kind enough to distribute plants all around, last autumn, for the purpose of being kept through the winter for seeding the approaching summer, so that I hope we shall have plenty of seed for next season. It seems to me highly probable that it will take the place of the large drumhead, as four or five of these will grow in the same space as is required for two of the others; add to this, that the flavour is far superior, and the faculty of heading well, unfailing.

Although I have no name for it, I think it very probable that it is the Pomeranian Cabbage, just introduced into England or Scotland, where it met with much commendation.

TABULAR ESTIMATE OF THE CROPS FOR 1847.

State or Territory.	*Population in* 1840.	*Present estimated popu'n.*	*Wheat.*	*Barley.*	*Oats.*	*Rye.*	*Buckwheat.*	*Indian corn.*
			Bushels.	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Bushels.*
Maine	501,973	600,000	890,000	286,650	1,720,000	195,000	76,000	2,890,000
New Hampshire	284,574	300,000	610,000	129,150	2,100,000	460,000	169,000	2,280,000
Massachusetts	737,699	850,000	256,000	170,100	2,000,000	620,000	138,000	3,410,000
Rhode Island	108,830	130,000	4,500	54,000	210,000	50,000	4,500	800,000
Connecticut	309,978	330,000	125,000	28,000	1,810,000	1,200,000	480,000	3,180,000
Vermont	291,948	302,000	664,000	55,000	3,905,000	350,000	330,000	2,100,000
New York	2,428,921	2,780,000	14,500,000	3,931,000	26,200,000	3,650,000	3,660,000	16,000,000
New Jersey	373,306	416,000	1,100,000	10,000	5,228,000	3,050,000	980,000	8,000,000
Pennsylvania	1,724,033	2,125,000	14,150,000	150,000	18,835,000	12,000,000	3,600,000	20,200,000
Delaware	78,085	80,000	410,000	4,400	650,000	55,000	14,000	3,620,000
Maryland	470,019	405,000	4,960,000	2,900	1,860,000	975,000	115,000	8,300,000
Virginia	1,239,797	1,270,000	12,000,000	90,000	10,000,000	1,500,000	260,000	36,500,000
North Carolina	753,419	765,000	2,350,000	4,000	3,507,000	235,000	18,000	25,000,000
South Carolina	594,398	605,000	1,300,000	4,500	1,000,000	54,000	—	10,600,000
Georgia	691,392	800,000	1,950,000	12,300	1,140,000	70,000	—	25,000,000
Alabama	590,756	690,000	1,200,000	7,500	1,831,000	75,000	—	26,000,000
Mississippi	375,651	610,000	500.000	2,000	1,378,000	23,000	—	16,000,000
Louisiana	352,411	470,000	—	—	—	2,200	—	9,000,000
Tennessee	829,210	950,000	8,750,000	6,500	9,918,000	390,000	28,000	74,000,000
Kentucky	779,828	855,000	6,000,000	18,000	14,100,000	2,650,000	16,000	62,000,000
Ohio	1,519,467	1,850,000	16,800,060	240,000	26,500,000	1,000,000	1,200,000	66,000,000
Indiana	685,866	960,000	7,500,000	39,000	15,290,000	250,000	100,000	38,000,000
Illinois	476,183	735,000	4,900,000	116,000	4,200,000	155,000	120,000	33,000,000
Missouri	483,112	600,000	1,750,000	13,000	6,020,000	86,000	25,000	25,000,000
Arkansas	97,574	152,400	200,000	1,000	440,000	10,000	—	7,000,000
Michigan	212,267	370,000	8,000,000	210,000	5,500,000	90,000	290,000	6,500,000
Florida	54,477	75,000	—	—	10,000	—	—	1,000,000
Wisconsin Territory	30,945	215,000	1,200,000	30,000	1,500,000	8,000	30,000	1,000,000
Iowa Territory	43,112	130,000	1,000,000	350,000	1,000,000	12,000	20,000	2,900,000
Texas	—	140,000	1,110,000	—	—	—	—	1,500,000
District of Columbia	43,712	46,000	16,000	—	15,000	7,500	—	45,000
Oregon	—	20,000	50,000	—	—	—	—	525,000
	17,069,452	20,746,000	114,245,50	5,649,950	167,867,000	29,222,700	11,673,500	539,350,000

TABULAR ESTIMATE OF THE CROPS FOR 1847.

State or Territory.	Potatoes.	Hay.	Hemp.	Tobacco.	Cotton.	Rice.	Cocoons.	Sugar.
	Bushels.	Tons.	Tons.	Pounds.	Pounds.	Pounds.	Pounds.	Pounds.
Maine	7,800,000	1,113,000	—	—	—	—	550	500,000
New Hampshire	4,655,000	606,000	—	—	—	—	880	2,225,000
Massachusetts	4,308,000	682,000	—	135,000	—	—	40,000	530,000
Rhode Island	730,000	71,000	—	—	—	—	960	—
Connecticut	2,832,000	550,000	—	806,000	—	—	200,000	45,000
Vermont	7,086,000	1,250,000	—	—	—	—	8,000	10,500,000
New York	24,000,000	3,800,000	—	30,000	—	—	5,000	12,800,000
New Jersey	1,850,000	434,000	—	—	—	—	4,500	—
Pennsylvania	7,600,000	1,728,000	—	600,000	—	—	35,000	2,000,000
Delaware	160,000	20,000	—	—	—	—	3,600	—
Maryland	900,000	125,000	—	25,000,000	—	—	7,900	—
Virginia	2,950,000	400,000	—	50,000,000	2,500,000	3,000	6,350	1,750,000
North Carolina	2,600,000	136,000	—	14,000,000	42,000,000	3,500,000	6,200	15,000
South Carolina	3,500,000	30,000	—	35,000	100,000,000	78,000,000	5,800	35,000
Georgia	1,840,000	24,000	—	205,000	210,000,000	15,500,000	6,000	370,000
Alabama	2,150,000	18,000	—	350,000	160,000,000	300,000	5,880	15,000
Mississippi	2,050,000	800	—	200,000	250,000,000	1,000,000	250	—
Louisiana	1,300,000	27,000	—	135,000	195,000,000	4,000,000	1,200	275,000,000
Tennessee	2,700,000	45,000	1,000	35,000,000	35,000,000	10,000	20,000	530,000
Kentucky	1,810,000	130,000	15,000	65,000,000	2,000,000	20,000	4,400	2,000,000
Ohio	4,644,000	1,400,000	600	9,000,000	—	—	35,000	5,000,000
Indiana	2,350,000	385,000	550	3,880,000	—	—	800	6,400,000
Illinois	2,100,000	365,000	600	2,288,000	—	7,500	3,200	615,000
Missouri	1,050,000	80,000	10,000	14,000,000	—	—	230	500,000
Arkansas	520,000	1,100	—	200,000	20,000,880	—	260	5,500
Michigan	4,980,000	260,000	—	—	—	—	1,500	3,260,000
Florida	350,000	1,200	—	300,000	15,000,000	700,000	500	300,000
Wisconsin Territory	1,080,000	96,000	—	—	—	—	40	350,000
Iowa Territory	850,000	40,000	—	—	—	—	—	175,000
Texas	200,000	–	—	—	10,000,000	—	—	20,000
District of Columbia	20,000	1,800	—	—	—	—	600	—
Oregon	–	–	—	—	—	—	—	—
	100,965,000	13,819,900	27,750	220,164,000	1,041,500,000	103,040,500	404,600	324,940,500

Cultivation of Onions.

The cultivation of onions is in many sections an important business. In some parts of Connecticut, Massachusetts, and other places, they are raised in large quantities, and disposed of both for home consumption and for exportation. The following essay was written by John W. Proctor, Esq., and received a premium from the Essex (Mass.) Agricultural Society.

The culture of onions has increased so much, within a few years, in this vicinity, that it has become one of the staple products of the county. In the town of Danvers, more money is realized from the sale of the onion, than from any other product of the soil. Products of so much value, and commanding so much attention, are fit subjects of inquiry; and if there be any facts relating to their cultivation not generally known, it may be useful to have them brought forward.

In making these inquiries, our attention has been directed almost entirely to practical cultivators, without reference to scientific treatises. Our intention being to tell their story, as near as possible, in their own way.

We shall treat of the subject in the following order:

1. The preparation of the land.
2. The manure best adapted to promote the growth.
3. The raising and planting of the seed.
4. The care necessary to be applied while growing.
5. The blights and injuries to which the crop may be liable.
6. The time and manner of harvesting.

1. As to the preparation of the land.

Differing from most other crops, the onion grows well on the same land for an indefinite number of years. Instances of continued appropriation of the same pieces of land to the growing of onions, for *ten*, *fifteen*, *twenty*, and even *thirty years*, have come to our knowledge. It is the opinion of many that the crop is better, after the land has been thus used a few years, than at first. Whether this arises from any influence of the crop upon the soil, or is the effect of continued dressing of manures, we have no means of determining. This is certain, that the qualities of the soil necessary for the production of good crops are not exhausted by continued cultivation.

Rarely, if ever, have we known the onion sowed upon the turf when first turned over. It is usual to subdue and pulverize the soil, by the cultivation of corn, or some other crop. Not unfrequently the first year with c rn, the second with carrots, and afterwards with onions. It is important, before the seed is sown, that the surface be mellow, finely pulverized, and clear of stones or other impediments, to the free and unobstructed use of the machine for this purpose. The finer and more uniformly mellow the surface is made, the better. Shallow ploughing, say from four to six inches deep, is usaally practiced. Once ploughing only in the spring, and frequent harrowings, are practiced. Before the ploughing, the dressing is usually spread upon the surface of the field, so as to be covered or intermixed in the furrow. The mingling and subdivision of it, is effected by the use of the harrow.

Whether it would not be advantageous occasionally, to stir the land to the full depth of the soil, is a point on which there is a difference of opinion; most of the cultivators inclining to the use of shallow ploughing only. There are some facts tending to show, that occasional deep stirring of the soil does no harm to the onion crop, but on the contrary is decidedly beneficial. As for instance, onions do better where carrots have grown the year preceding, than after any other crop. The carrot necessarily starts the soil to the depth of ten or twelve inches. Possibly there may be some other influence upon the soil from the plant itself. Our belief is, that the thorough and deep stirring of it, is the principal preparatory benefit.

2. The manure best adapted to promote the growth.

Any strong manure, well rotted and finely subdivided will answer. But the general impression seems to be, that manure from stables, where the horses are freely fed with grain, is the best; and that it should be at least one year old, because it will not be sufficiently rotten in a less time. All agree that the dressing for the land should be kept near the surface, well mixed, and as fine as possible. Though we have seen the present year a very superior growth of onions, where green manure from the barn-yard was applied in the spring; but particular pains were taken to subdivide and intermingle it with the soil; and to bush-harrow the land so thoroughly, that very little manure was exposed upon the surface.

Muscle-bed is frequently used upon onion land. A portion of this is deemed by some almost indispensable. We have known the continued use of it for half a dozen years in succession, even without other manures, with a continuation of fair crops; but the general impression is, that it will not do to repeat the application of muscle-bed many years in succession. The effect being to harden the land, and make too much of a crust about the surface. Without question the

effect of the muscle-bed is congenial to the growth of the onion, giving those who live in the vicinity of rivers where it is found, a special advantage over those who are remote from it.

Leached ashes are also a valuable manure in the cultivation of the onion; more so when *leached* than before. All kinds of ashes are advantageously applied on onion land.

Compost manure made of meadow mud and droppings from the cattle, we have known advantageously applied on onion fields; but we have many doubts as to this being the best application of this kind of manure. A more lively and quickly operating manure is better for the onion; one that will give them an early start, and advance them as fast as possible, in the first part of the season. The utmost vigilance and activity are used by our cultivators in getting their land ready, at an early period of the season, for the reception of the seed. It is the first field labour of the spring. The use of compost manure will depend much upon the constituents of the soil with which it is mixed. If the soil be a sandy loam, with a porous subsoil, the compost will do tolerably well; but if it be a black soil, with a clayey subsoil, such as are most of the lands where onions are raised in this vicinity, stable manure, or muscle-bed, or leached ashes, or a mixture of these, will be a better application. The quantity ordinarily applied annually is from four to five good loads to the acre. Whatever is applied should be generously applied. It will be vain to expect full crops of onions, without full manuring. When the manure is collected, it is benefitted much by a free application of *elbow grease* in its preparation. The cultivator of the onion must work early and late, and in good earnest. Nothing short of forcible and persevering labour will answer. No man who is afraid of *soiling his hands or the knees of his trousers*, will do to engage in this business. Close work at the proper time, is the only sure guarantee of a good crop.

3. The raising and planting of the seed.

In relation to the onion, as well as all other vegetables, much care is necessary in the selection of the plants for seed, and the cultivation of the seed. By the application of this care, the character of the article raised may be modified almost at pleasure. Until within a few years the *flat onion*, hollow about the stem, has been preferred. The thinner the handsomer. But it is now understood, that the *round, thick, plump onion*, is preferable in many respects. It is thought to yield better, and weigh heavier. It is found to have a decided preference in the market, commanding *ten per cent.* more in price. By selecting those of most desirable form, which ripen the earliest, and carefully setting them for seed, where they will not be exposed to the impregnation of the baser sorts, the quality has been materially changed and improved. These peculiarities in the onion were first noticed in this vicinity by Mr. Daniel Buxton. He was careful to select in the field before the crop was gathered, such onions as he preferred, and to preserve them for seed.

By so doing, the seed which he raised soon acquired a character superior to any other. Many of those who had been accustomed to raise their own seed in the ordinary way, laid it aside, and purchased seed raised by Mr. Buxton, and found their account in so doing. There are three varieties of the onion raised in this vicinity—the *Silver-skin*, the *Red*, and the *White onion*. The *Silver-skin* is the predominant species, and more cultivated than all others. The *Red* is preferred by some—sells better in some foreign markets, but does not yield so abundantly. The *White onion* yields as well as either of the others, is milder and preferable for immediate use; it will not keep as well, and is not fit for exportation; which is the principal use made of our onions.

The common drill machine is used for the distribution of the seed. This admits of regulation, so as to scatter it more or less thick; and in this there is room for the application of sound judgment. The usual quantity sown is about three pounds to an acre. As a general rule, we should say, one pound of good seed was the proper quantity for a quarter of an acre of land of good quality well prepared. It is desirable to have the seed planted as thick as they will grow fairly, both to secure a full crop, and prevent the onion growing too large. Onions from one to two inches in diameter being preferred to those of a larger size. The skilful cultivator carefully looks after all these incidents relating to his crop.

4. The care necessary to be applied while growing.

Much of the success of the crop depends on this care. At first the plant is extremely tender, and requires to be handled with much caution. Any derangement of the fibres or roots of the young plant, is attended with prejudicial consequences. Much attention is necessary to prevent weeds gaining the ascendancy; and in eradicating the weeds. Want of due care in this is often the cause of failure of a crop. We have known the present season, a highly promising crop to be injured *twenty per cent.* at least, by per-

mitting the weeds to remain unnoticed *one week too long*. This is especially true when there has been a want of due care in preventing the scattering of the seeds of the weeds on the land in the years preceding. Care should be taken, both that no weeds shall ripen their seed upon the land, and that no weed seed shall be found in the manure. In this respect, warm stable manure, muscle-bed, and ashes, have a decided superiority over all other manures. Perhaps there is no plant more liable to be injured by weeds than the onion. The fibres it sends out are very numerous, minute and tender; any fracture of any of these necessarily impairs the perfection of the plant. When the land is in the proper condition, two careful weedings are all that may be necessary. The rest of the stirring of the ground that may be required to promote the growth, can be done with the *onion hoe*. The distance between the rows can be varied according to the quality and condition of the soil. Keeping the ground well stirred, loose, and free of weeds, greatly facilitates the bottoming of the onion. There is no plant that will better reward diligent care in the cultivation. The entire difference between a bountiful crop and no crop at all, often depends on this. The old maxim, "a stitch in time saves nine," applies with great force in raising onions.

5. The blights and injuries to which the crop may be subject.

So far as we have observed, this crop is as certain as any other that is cultivated. We know that onions will not grow without a reasonable proportion of heat and moisture; but we have rarely, if ever known, an entire failure of the crop, where due diligence has been used. There are occasionally blights, the causes of which we have not learned. The more prominent will be noticed.

Sometimes we have seen the plant covered with a small insect or *louse*, that gives the top a white or light coloured aspect, and stops and stints the growth. These make their appearance about the time the bottoming commences. We have heard their appearance charged to the use of muscle-bed; but whether they are limited to land on which muscle-bed has been used, we cannot say. We think not. We think they are natural associates of the plant. The effect of them is to diminish the *quantity*, but not materially injure the *quality* of the vegetable.

The crop is sometimes injured by a *blue mould* that gathers on the tops, occasioned by fogs, or an excess of moisture from frequent and long continued rains.

There is a *worm* or *maggot*, occasionally found upon the onion plant, in the early stages of its growth, causing it to turn *yellow* and die. This insect will be found in the bulb, originating from eggs laid upon the leaves, by a small ash coloured fly, the scientific name of which is said to be *Anthomyia ceparum*,—see Transactions of the N. Y. State Agricultural Society for 1843, page 135. It comes to maturity in less than a month; so that there may be several generations in the course of the season. Their appearance in this vicinity is rare. Pulverized charcoal and fire have been found the most effectual remedies, against the ravages of this class of depredators.

The most annoying enemy of the onion is the *cut worm* or *grub worm*. It probably is the same described by Dr. Harris, in his report on the Insects of Mass. injurious to vegetation, p. 324, there called "*Agrotis devastator*." And in the 1st vol. of Silliman's Journal of Science, "*Phalæna noctua devastator;*" though Dr. Harris does not mention the *onion* as among the plants upon which it feeds; probably considering it like *tobacco*, as *too noisome* to be used by any decently civilized being. They are said "to seek their food in the night, or in cloudy weather, and retire before sunrise into the ground, or beneath stones, or any substance which can shelter them from the rays of the sun; here they remain coiled up during the day, except while devouring their food, which they drag into their places of concealment." The remedy for these worms, suggested by our cultivators, corresponds nearly with that proposed by Mr. Foote, of Berkshire, "*to catch them and pull their teeth out.*" This being effectually done to all, their operations will be of a limited character. When this is omitted, we have sometimes known whole fields almost entirely cut down by these rapacious devourers. Tey sweep clean where they go, not suffering even the weeds or any other herbage to flourish. They are more frequently found on *old* ground than on *new;* and particularly where the ground has been covered during the winter with *chickweed or other vegetable substance*, on which the eggs from which they originate may have been deposited. Hence a benefit of clearing the ground of all vegetable matter or other obstructions in the autumn, after the crop is gathered. This clearing also facilitates the early planting in the spring. Autumnal ploughing, as it exposes the soil more fully to the action of the frost, and disarranges all abodes for the winter made by insects, may have a tendency to diminish their number.

6. The time and manner of harvesting.

When the tops begin to wither and fall, hen it is usual to start the onions from their ed, and throw them together in rows—say ight or ten growing rows into one. After hey have lain thus about one week, they re stirred and turned with a rake, and in bout one week more, when the ground is ry, and the weather fair, they are gathered p by cart loads, and taken to the barn. Here hey are sorted and cleared of refuse leaves, nd then they are in a condition to be *bunched* r *barreled.*

It should be remarked, that a large part of he labour of *weeding*, *gathering* and *sort-ng* the onion, can be performed by children rom *ten* to *sixteen* years of age. Boys of his age, when properly instructed, will do bout as much as men. They are more imble, and can come at the work with reater facility. The sorting of the onion s frequently done by girls as well as boys. 'rom *three* to *five* dollars a week, at one ent a basket, are usually earned by them uring the period of harvesting—which in-ludes the months of September and Octo-er. After the crop is taken off, if the sur-ace is sloping, it is useful to plough furrows bout one rod apart, to keep the surface from ashing. Unless this is done, all the herb-ge being gone, much of the soil will be kely to be misplaced, by the melting of nows and running of water in the spring.

The inquiry arises, whether the growth f the onion is limited to soils of particular haracter, or whether it can be cultivated pon any good soil, with proper attention. Ve know that there is a popular impres-ion, that there are but few places in which he onion can be cultivated advantageously. o far as our own observation has extended, his impression is in a great measure erro-eous. Like every other plant, the onion rows best on very good soils, in very good ondition. But we have known very fair rops, on plain, light land, after the same vas well saturated with *manure*, *muscle-bed* r *ashes*. A good substratum must be laid efore a good crop can be expected; and his being done, a crop may be expected on lmost any soil, that will support other ve-etables.

If we were asked, what course is best to e pursued with land, on which onions have ever been raised, to bring it into a condi-on for a successful cultivation of the crop, 've should say—begin by ploughing to the ll depth of the nutritive soil, and during he first and second years, thoroughly sub-ue and mellow the soil by the cultivation f crops of corn and carrots, with liberal ressings of manure; then thoroughly incor-orate with the soil a dressing of strong ma-nure and muscle-bed, just covering this dress-ing; then harrow the surface thoroughly, and clear it of all roots, weeds, or other obstruc-tions; then apply a coating of lively, well rotted manure to the surface, and bush har-row it; and then it will be in a condition to receive the seed, which is to be inserted as as soon as the opening of the spring will ad-mit of its being done.

We are aware that we make the raising of the onion dependant upon severe labour and vigilant attention. We know that it cannot be successfully done without these. But it is not labour lost. No cultivation, within our observation, better repays for the labour and incidental expenses. We have known, the present season, acres that have yielded their owners a net income of more than *two hundred dollars;* and we know that a man with two boys can well attend to half a dozen acres of such cultivation. Surely, when as at present, there is no limit to the demand for the article, and a ready cash market, those who have *acres* and are willing to labour, need not be in want of a fair compensation for their labour.

As samples of the present year's produce in the town of Danvers, we state the follow-ing that have come under our notice:

Names.	*Acres.*	*Produce.*
John Peaslee,	3	1,980 bushels.
Daniel Osborn & Son,	1 1-5	870 "
James P. King,	1 1-3	660 "
Aaron C. Proctor,	1 1-4	600 "
E. & D. Buxton,	6 1-2	2,750 "
Henry Bushby,	4	2,000 "
Joseph Bushby,	3	1,500 "

Yielding an average of more than 500 bushels to the acre.—*Cultivator.*

American Institute—Drainage.

February 15th, 1848.

R. L. Pell, of Pellham in the Chair.

Henry Meigs, Secretary.

Mr. Pell said that drainage, one of the subjects selected for discussion at the present meeting of the Farmers' Club, is a subject of vast importance to the agriculturists; whose success in growing crops, entirely de-pends upon the removal of superfluous water from lands naturally tenacious, and retaining constant moisture; which in nine cases out of ten materially injures cereal crops, and not unfrequently renders vast tracts of land entirely useless for agricultural purposes, which in many instances might be reclaimed at a small expense comparatively speaking. Often two or three land springs destroy acres of valuable land, by rising over the surface, and descending through alternating stratas of clay, gravel or sand, until they reach a hard bottom, where they accumulate and form re-

servoirs—which ooze through the superincumbent surface, and keep it always wet. If there is a descent, this water may be readily got rid of by boring, by under drain, or open drain. If surrounded by high ground, select the lowest spring, and dig a well; the water will then follow the vein and thus thoroughly drain the field. Should there be a sufficient descent, open or close drains may be made, conveying the water from the various springs to the lowest part of the field, where a pond may be formed, for the purposes of watering cattle, supplying ice, or even fish! The earth excavated, if clay, will form a valuable manure for sandy land—and vice versa, if sand, will render porous and fit for cultivation a clay soil. It not unfrequently happens that water is retained near the surface of a field, by a clay strata of inconsiderable thickness, thus rendering the soil unfertile; this difficulty may be overcome at a small expense, by perforating the clay with a subsoil plough; the water will sink into the gravel or sandy soil beneath, and escape. In many fields you often find alternate portions wet, and dry—upon examination it will be found that the wet portions are clay; and the dry, sand or gravel. In this case your field may be reclaimed at once, by opening a drain from the wet to the dry land, which will immediately absorb the moisture.

A drain should on no account be made directly down a rapid descent; lest its efficiency might be destroyed by the impetuosity of the stream, and consequent collection of water at the bottom, inducing an overflow, and occasioning injury to the adjoining field; let it descend the field diagonally, and the water will naturally percolate slowly without forming obstructions.

If the slope is gradual, by all means run your drains in a straight line directly down it, in parallel lines; as it stands to reason where the situation admits of it, that a straight line carries the water more readily than a diagonal one. Main springs sometimes render a field unfit for agricultural purposes. I have known fields that have been perfectly useless to their owners for years from this cause, which might have been remedied in a few hours by simply opening the channel of the spring; lands that have been long immersed in water, may by proper drainage be made to yield very large crops of grass, or grain: for the reason that water constantly absorbs gaseous matters from the air, and carries them with it wherever it goes in a solution—it is finally deposited by an arrangement of nature in the earth—and is constantly renewed by every succeeding overflow, until the land becomes rich in these impurities of the water, all of which are in a more or less degree indispensable to the growth of plants, being of organic origin, and containing not only decayed vegetable matter, but frequently animal. It is only necessary therefore to get rid of the superfluous water by judicious drainage, and all these matters become at once capable of ministering nourishment to your cultivated plants. And land which in its undrained state was of no use to you, becomes of inestimable value. While saturated with water it is impossible for the earth to obey the laws nature, and radiate heat—as all bodies of on the face of the earth should; all warm bodies throw out heat to cold bodies, as nature is forever striving for an equilibrium of heat. She is bountiful and yet provident in all her works; she ungrudgingly dispenses her favors to man, yet never wastes; her sun shines and throws light upon all alike; still science can assist nature, and proper drainage is calculated to benefit not only wet, but in many cases even dry soil may be benefited by drains. I once had a small piece of land which would yield me no return for my labor. I ran several drains through it, and ploughed it deep and thoroughly; the second year after it produced a heavy crop of grain. The conclusion I came to was, that the soil contained substances injurious to vegetation; which were rendered soluble by the rain water falling upon the ground, and carried off through the drains.

Undrained lands are called cold, and justly so, for the reason that they never derive proper benefit from the sun's rays; they give off incessantly a very large quantity of vapor, and with this vapor nearly all the heat they may contain. It is not necessary to take my word for this fact, as you may by the same experiment I tried, satisfy yourselves. In the summer at mid-day place a thermometer in a dry field, and it will probably rise to 103 degrees—then in a moist undrained field, and it will fall perhaps below 80 degrees. Such was the case in my experiment.

Immediately after the water is removed from the land, the air at once penetrates and possesses itself of all the vacant spaces; the consequence is that the roots of growing plants descend likewise, and find a virgin soil, of great depth; accumulated by continued washing of the rain perhaps for centuries. It will strike you as a natural consequence, that the deeper you make your drains, the greater the depth of available soil will be afforded for the purposes of vegetable growth. Wheat and clover will extend their roots four feet in depth, if the soil will admit of it. Practical men in Europe have found that the effects of draining have

increased the products of their farms sufficient to pay for the most expensive system of drainage, in three years. There is a private gentleman in Great Britain, who has made over 350 miles of drains on a single farm of 1000 acres land. Before it was drained, he rented it for two dollars per acre; and afterwards for eight dollars. As soon as the land becomes dry, the agriculturist had an opportunity afforded him of displaying his exertions to advantage. Bones, ashes, nitrate of soda, lime, and other artificial manures, which on his wet soil exhibited no fertilizing virtue, now yield him adequate remuneration for all his labor and expenditure. The man who drains and improves a wet piece of bog land, should be looked upon by all his neighbors as a public benefactor; for the reason that mists, mildews, miasma, &c., arise from such land, and injure all the crops in its immediate vicinity—and not only that, but they do far greater injury to the surrounding population, by causing intermittant, bilious, typhus fever, fever and ague, &c. By drainage, then, the climate of the locality is entirely changed in reference to the general health of the inhabitants, and the growth of plants. "Dr. Wilson, in the English Quarterly Journal of Agriculture, vol. 12, page 317, has shown that fever and ague, which formed nearly one half of all the diseases of the population during the former ten years, had almost wholly disappeared during the latter ten, in consequence of the general extension of an efficient drainage throughout that part of the country, (district of Kelso) while, at the same time, the fatality of disease, or the comparative number of deaths from every 100 cases of serious ailment, has diminished in the proportion of four to two. Such beneficial results, though not immediately sought for by the practical farmer, yet are the inevitable result of his successful exertion. Apart therefore, from mere considerations of pecuniary profit, a desire to promote the general comfort and happiness of the entire inhabitants of a district, may fairly influence the possessors of land to forward this method of ameliorating the soil; while the whole people on the other hand, of whatever class, ought gratefully to acknowledge the value of those improvements which at once render their homes more salubrious, and their fields more fruitful."

Drainage, then, in the first place changes the soil, improves the climate, and adds to the health of the surrounding people.

In the second place—it deepens the soil, dissipates the water, and cleanses the subsoil of unprofitable ingredients. And in their place renders the land capable of producing all the cerealia by the free admission of atmospheric air.

Three years since, I made seven and a half miles of stone under drains on a piece of bog land. The ditches were dug to the depth of three feet, and were three feet wide at the bottom. A wall was carefully laid on each side, 12 inches wide and 12 inches high, leaving a 12 inch opening, over which flat stones were placed—and the interstices filled up with small stones; the whole were then covered with dirt; shortly after the field was plowed, harrowed, and seeded with rye, clover, and red top. The crop of rye was a fine one, grain weighed 60½ lbs. to the bushel, and the grass made capital pasture after the rye was harvested. This land had never been cultivated before; and was always avoided by cattle, on account of the numerous quicksand holes contained in it. I brought all the drains to a point, and there formed a chain of two ponds 800 feet in length, and 14 feet deep—also a circular pond of less dimensions, connected with them. The muck taken from the ponds amply remunerated me for all the expense incurred; they are now stocked with European Carp, Pickerel, Shad and fish from the great lakes.

I would not have the gentlemen who hear me, understand that to drain a piece of ground effectually, it is only necessary to construct a drain with a sufficient descent to carry off the water it contains, but that it is indispensable they should know the structure of the field's upper crust, its capacity of permitting water to course through it, the varieties of strata of which it is composed, its porosity, &c. Some fields are not capable of allowing water to pass them at all, on account of oblique strata running through them, and forcing the water to the surface; such fields may be considered unfit for agricultural purposes, and any expense laid out upon them, by the proprietor, for the purpose of draining, would be a dead loss. Before this system is commenced I would advise the farmer to examine his soil, and subsoil; find out of what materials they are composed,—their depth, degrees of inclination from the horizontal, &c. The subsoil is most generally entirely different from the surface soil; the surface may be composed of clay, and the subsoil of sand, or gravel, in which case deep subsoil ploughing will answer all the purposes of a drain; most effectually breaking up the clay surface, and thus enabling the sand or gravel to absorb all the excessive moisture. I have heard farmers say they derive no benefit from draining, although in their estimation their drains were perfect,

having been made at great cost, and of proper materials, with sufficient descent, &c. Upon examination I found they had not subsoiled their land, the consequence was the clay subsoil being retentive, held the water in almost a stagnant state, which was absolutely poisonous to all vegetation above it. The only benefit the farmer derived from his drains was an improvement in the soil directly contiguous to them. Whereas it is indispensably necessary that the whole field drained should be subsoiled as deep as possible, the hard pan must be broken up, when the water will readily find its way to the drain, and through it to the level sought by the cultivator; you must not therefore consider the work accomplished until your land is perfectly tilled, and the air admitted to all the pores recently filled with water. Most farmers not bearing this fact in mind, construct their drains so shallow, that it is impossible to subsoil; and consequently they have deprived themselves of all the advantages to be attained by its adoption, and their drains are comparatively speaking almost useless, draining and deep ploughing go hand in hand together, and it is by combining their effects, — that the greatest improvement to the soil is accomplished.

Mr. Pell said that irrigation, is another subject, before the club this morning for discussion; and although of vast importance, is not as necessary for us in my estimation, as drainage; for the reason that our climate is blessed throughout the growing season with an abundance of water, except in a few isolated instances. It is the art of watering lands in an artificial manner by means of channels, with a view of increasing their productiveness. In Eastern countries the heat of the climate is such, that without flooding, lands which now yield most abundantly, would be completely sterile. The simile made use of by Isaiah to indicate desolation, is "a garden that hath no water." Cato 150 years before the birth of our Saviour requested the Italian agriculturists to "make water meadows if they had water." The principal rivers in northern Italy, the Tagliamento, Po, and Adige, are used for the purpose of irrigation, and all the country contiguous to them from Turin to Venice, is capable of being overflowed; they find it necessary to irrigate not only for grass, but for corn and vines. The waters of all these rivers belong to the States through which they pass, and no man can use them without paying the state a price regulated by the quantity of water required. Lands capable of being irrigated in northern Italy, rent nearly for one half more than lands which are not. In all the hot countries in Asia, and in all tropical climates irrigation is carried to a great extent as the most effectual mode of producing fertility. It is a favorite system of agriculture in Hindostan, Arabia and Persia, as well as in the empire of China. I noticed a statement made in the Journal of Commerce yesterday, by a gentleman who had resided many years, 1400 miles up the River Ganges in India, that millions of people had died of famine, rain not having fallen for six months, and that the British government were now constructing a canal from the mountains in which the Ganges rises, 700 miles in length, at a cost of $50,000,000, for the purposes of irrigation. I was shown lands in the vicinity of the city of Edinburgh, Scotland, belonging to Earl Moray, that had been irrigated by the street water from the city, and thus made superior to any other land in Great Britain, yielding six crops of grass in a single year, which is sold for the purpose of being fed to milch cows, for £29 sterling per acre, and has been sold as high when grass was scarce as £55 per acre. Forty-two acres of poor sandy soil near the city was irrigated at an expense of £900, and in 1833 when I was there, rented for £19 per acre, about $84,36.

There are on Long Island within a few miles of this city, large tracts of sandy soil, now worth perhaps $5 per acre, which I am confident might be made worth $150 by a proper and judicious mode of irrigation. Adjoining many of these lands there are extensive ponds, which by the use of proper steam machinery, might be made to irrigate them. The first expense in many instances, would be great, but the profits would be far greater. I would respectfully advise some of the Long Island millionaires to try the experiment on a small scale. It only requires the success of a single individual, to induce every inhabitant to follow his example, and Long Island would soon become the garden of New York.

In Switzerland the mountain torrents as they descend in the fall are conducted over the vallies, which are flooded, and in many instances remain so during the winter; one winter's flooding is considered of more value to the grass, than 29 loads of the best rotted stable manure. Such being the case, how inconceivably valuable is the water, which daily finds its way into the river, and thence into the ocean, from this great city of New York, how effectual would be the improvement of our impoverished lands—if their valuable substances could find their way to them, instead of the ocean. By what our City Fathers call their improved plan of drainage, all the rich excrementitious matters now find their way to the ocean likewise. These substances if they could be

saved, would be worth countless millions to the agricultural interest of the State.

I will venture to say that more than one thousand tons of most valuable fertilizing matter, finds its way daily to the rivers from the city of New York; sufficient to enrich 30,000 acres of the poorest land annually; in such a manner as to render it capable of producing 130 bushels of shelled corn to the acre; instead of its present yield 25 bushels. It would pay the Long Island, and Jersey Agriculturists, to construct at the mouth of the leading sewers, water tight chambers, to collect the enriched waters of the city: with which to irrigate their worn out and famished lands. These waters contain in solution every known requisite for the growth of plants, they contain calcium, lime, carbonate of lime, sulphate of lime, nitrates, sulphates, phosphates, alumina, silica, magnesia, oxides, organic and inorganic substances. In fact every matter requisite to agriculture is contained in them, refuse substances from the apothecary, chemist and soap boiler find their way into them, and they are beyond the shadow of a doubt of inestimable value for the purposes of irrigation. If Earl Moray obtained, as I before stated £55 or $244 per acre in a single year for his grass, grown on poor sandy soil, in the neighbourhood of Edinburgh; merely by the use of street water; what is there to prevent the Long Island farmer from obtaining like results. Let me entreat you gentlemen to collect by subscription a few thousand dollars and try the experiment? You will then leave your heirs a valuable inheritance. Pursue your present mode of agriculture, and you will impoverish yourselves, and drive your children to the western wilds.—*Farmer and Mechanic.*

For the Farmers' Cabinet.

The effect of the early sowing of Wheat on the increase of the Hessian Fly.

Of late years it has been the practice in this neighbourhood, to sow wheat earlier in the season than had previously been customary for a long time. It is also observable, that in a few years after this practice became general, the ravages of the Hessian fly were much increased. It is then an interesting inquiry, whether the latter fact is a consequence of the former: it is also important to know, if possible, whether a continuation of the practice will occasion a continuation of the ravages of this insect.

This is an intricate subject—enveloped in much obscurity—but if we can obtain any light upon it, it will probably be derived from an examination of the habits of the insect before us. We may note then that the fly is known to make its appearance in the growing wheat early in the spring, in the form of a small larva or maggot. It appears to feed upon the juices of the plant for some time, and then it assumes a brown covering, in which it lies in a state of inactivity for a length of time which I have not carefully observed—taking no food, and apparently doing no other damage to the plant than that which is produced by its mere pressure upon the growing stalk. In the early part of June—sooner or later, according to the season—it comes forth in its finished stage of being, flies abroad and provides for the perpetuity of its race.

This brood we may call the first generation of the insect. The second generation may be observed soon after the disappearance of the first, in wheat that is late in ripening; in barley, rye, and probably in some other gramineous plants, though of the latter fact I have no clear evidence—nothing but probable conjecture. I have, however, seen the fly in abundance at this season, in barley and in wheat; occupying the axil of the upper leaf, and assuming the brown or flaxseed appearance about the time the grain is ripening. Of course in this state it is carried into the barn or stack, and there probably it goes through its final metamorphosis. This is the second generation.

The third may be seen in the autumn, in early sown wheat, assuming the brown covering before winter, and lying in that state till the warmth of spring rouses it from its torpidity. It then obtains wings, bursts open its shell, flies abroad to enjoy the balmy airs of heaven and the rich scenery of earth; and after providing for the succession of another generation, speedily goes the way of all flesh. There are, therefore, three generations of this pest of the farmer in each and every year; one in the spring, another in midsummer, and a third in the autumn and winter. Such is the outline of the history of this insect, which I have deduced from observation, and I feel satisfied that in the main it is correct, though there is much wanting to fill up the picture.

Now it is manifest that whatever favours the multiplication of the insect, must tend to increase its ravages; and it is not less obvious that the early sowing of wheat, by furnishing it with increased facilities for the propagation of its race, will have this effect. It is rational therefore to conclude, that the great multiplication of the fly observable in this neighbourhood within the last few years, is mainly owing to the general practice of early sowing which had preceded that event. Nor does the fact that late sown wheat is as

liable to be injured by the fly as that which is sown early, militate against this conclusion; for the principal damage to the wheat crop is mostly done by the spring brood, and if the fly is in the neighbourhood it will be as likely to lay its eggs in that which was sown late as in any other. Nay, it is not improbable that the younger plants furnished by the late sowing, may be preferred by it; and that to such it will be more destructive than to those which are older and more vigorous. Thus he who by sowing early, raises a plentiful winter brood of these insects, cherishes an enemy which is quite as likely to destroy his neighbour's crop as his own. There is therefore no security to be found in late sowing when practiced by a few, while the general mass sow early enough to allow of the egg to be deposited in the young plants before the season of the fly is past. If anything is to be gained by the practice in the way of preventing the multiplication of the fly, it must be universally, or at least very generally adopted.

With regard to the other branch of the proposed enquiry,—whether a continuation of the practice of early sowing will occasion the continued destruction of the wheat crop —there is a curious fact connected with the life of the Hessian fly, which it is very necessary to take note of.

This destructive pest has a deadly enemy in a parasite insect of nearly its own size, by which myriads of its kind are every year destroyed. This enemy attacks the fly about the time when it assumes the brown covering, or perhaps somewhat earlier. It deposites its egg in, or on the body of the fly, where it hatches, and the young larva proceeds to feed itself thereon till it eats it all up, and occupying the shell which the fly had provided for itself, it goes through its appointed changes, and in due time comes forth a winged insect, prepared to seek out a place for its progeny similar to that in which it was nurtured. These insects may be seen coming forth from a portion of the shells which the Hessian flies had prepared for themselves, about two or three weeks after the time when the Hessian fly makes it appearance. They are assiduous in seeking a suitable place to deposite their eggs, of which on one occasion I had a striking illustration. I had gathered some stalks of grain containing the fly at the time of harvest, and put them in a glass vessel in an open room used for drying and preserving seeds. I intended to cover them up and watch their developement, but being then much engaged, I left the vessel uncovered. On returning to it a few days after, I observed a number of those enemies of the Hessian fly—with whose appearance I had previously been somewhat familiar—gathered about and on the straw in which the flies were enveloped, as if they were attracted there by something peculiar. Indeed they were evidently seeking a place to deposite their eggs.

Through the agency of this parasite a large proportion of the Hessian flies are every year destroyed, and it is highly probable that but for this destruction we should be utterly unable to raise wheat to profit.

Now it is manifest that the destruction of the Hessian fly will be increased as the number of its enemies is multiplied; and it is evident that these will multiply more or less according to the means of their subsistence. Whenever the Hessian fly is abundant, it furnishes the means for the multiplication of its enemies, and this increase of the parasite insect is only checked when the destruction of the fly limits its supply of food. Thus when any circumstances give peculiar encouragement to the increase of the Hessian fly, its power of increase is so great it soon multiplies to the extent of its means of obtaining suitable situations for its brood, or at least it makes rapid strides towards this condition. Its enemy however is not much its inferior in such a race; but it cannot start until the other by its abundance has furnished it with the means. It then continues to multiply so long as these means are furnished, and it continues to hunt down the Hessian fly with unwearied assiduity, till a scarcity of its appropriate food arrests its further progress and thins its ranks. Its diminished numbers cease to be formidable to the Hessian fly, and allow it to take advantage of the first favourable chance to start forward in another race—again it is pursued, overtaken, and hunted down by its unwearied adversary, and again that adversary partly perishes for the want of food—and thus a constant succession of floods and ebbs in the tide of being is naturally produced, in this department of the insect world.

In accordance with these principles, we find that when the Hessian fly first made its appearance in our country, it was for some years much more destructive than it has been at any time since; and that the visitations of this plague since that time, have been of a more or less periodical character.

We may conclude, therefore, that the practice of sowing wheat early in the season, has for some years past given an impetus in this district to the increase of the Hessian fly, which has enabled it to outstrip the pursuit of its destroyer, and to devastate our wheat fields; but we may rest assured that this state of things will not continue many years. The abundance of the Hessian

fly will furnish the means of multiplying this parasite, so as to give a material check to its own ravages. They cannot, however, by such means be entirely prevented, and the fly will doubtless continue to infest our wheat fields as heretofore; sometimes more, sometimes less, but always in some degree. Whether the practice of early sowing will—taking many years together—cause an average increase of the devastations of the fly, is a question which I presume is yet to be decided by observation and experiment. My own opinion is, that it will do so; and that our true policy is to return to the practice of late sowing, so as to obstruct the increase of the fly. But further observations are wanting before much confidence can be placed in any judgment we may form in the case; the subject is enveloped in much obscurity, and principles may be in operation in relation to it which we do not even suspect. W. Jackson.

Harmony Grove, Chester co., Pa.,
March 8th, 1848.

Horticultural Premiums.

The Pennsylvania Horticultural Society will hold its stated meeting in the Museum building on Ninth and George streets, on the 18th of next month, at 8 o'clock, P. M. The following premiums are offered.

Pelargoniums.—For the best, ten named varieties, to be exhibited in pots, $5.

For the second best do. do. do. $3.

For the third best do. do. do. $2.

Roses.—For the best ten Everblooming Roses, named varieties in pots, including Bengal, Tea, and Noisettes, $4.

For the second best do. do. do. do. $3.

For the third best do. do. do. do. $2.

Tulips.—For the best, single, twelve named varieties, $3.

For the second best do. do. $2.

For the third best do. do. $1.

Hyacinths.—For the best, six named varieties to be exhibited, $2.

For the second best do. do. do. $1.

Pansies.—For the best, six varieties do. $2.

For the second best, do. do. $1.

Auriculas.—For the best, four varieties do. $2.

Polyanthus.—For the best, six do. do. $2.

Cucumbers.—For the best, two in number, do. $2.

For the second best do. do. $1.

Cauliflowers.—For the best, three heads to be exhibited, $3.

For the second best do. do. $2.

Sea Kale.—For the best, six plants do. $2.

For the second best do. do. $1.

Rhubarb.—For the best, six stalks do. $1.

Asparagus.—For the best, twenty-four stalks, do. $2.

For the second best do. do. $1.

For the Farmers' Cabinet.

To Preserve Portico Floors.

In reply to "A Farmer," in your last number, I will give my experience on the subject, with some theory added thereto.

Dry pine planed and grooved, the boards about six inches wide. A coat of paint upon this, a sufficient quantity of sharp clean screened sand; when the two firmly unite and dry, another coat, and a third.

My porticos have been in use three years; there is neither the appearance of wear nor leak. There is nothing I could have done to the floor that would have met my approbation, in preference. Stone steps are objectionable, they are very costly and unyielding to the tread, and not agreeable. Here we have an agreeable substitute. The foundation steps is granite, and as the whole of wood steps and floor was painted light lead colour, it is almost impossible to see the difference, they are so much alike in appearance, rendered more so, by being accidentally stained with leaves, &c.

I am of the opinion that the dregs of linseed oil will be equally as good as pure, for the first coat. Thickness is desirable to lay the sand upon. I also think that the boards should be entirely free from knots, and *not* planed. It is indispensable to have the bottom step stone for all porticos. Some plan should be adopted to prevent rain falling on the painted sand till dry,—if it runs about, it cannot be so durable, nor look well.

The thick oil or paint put on a common board as above described, will give you all the knowledge in a few days for a fip. I should be glad to learn the success of the Chester county farmer in the premises.

E. Lewis.

Bloomsbury, near Havre de Grace,
Feb. 26th, 1848.

P. S. Since writing the foregoing, I have examined my floor more minutely, and think the width of the plank not material; but should be well seasoned, and the steps should be one and a half inch, or two inches may not be too thick; one inch is not strong enough; nor is the grooving essential, but must be grooved or slatted, to prevent the sand and oil passing through. E. L.

Grafting Grape Vines. By Alexander Marshall, Esq., West Chester, Pa.

The cultivation of the grape is becoming very extensive as an article for the market, as well as for consumption by those who grow them: and one which cannot be too highly prized as a delicious and wholesome fruit. Almost every one loves to eat a plate full of good grapes, but very few know how to cultivate them, and fewer still know what varieties to select as best suited to the soil and climate of their particular location. So that, after having reared a few vines to a proper bearing age, they are disappointed in the crop by having been unfortunate in their selection. They thus become disheartened, and suffer the vines on which they have bestowed so much attention, and watched with so much solicitude, to perish for want of the very treatment that would make them productive of good fruit. To such I would say, Cheer up; those vines are very valuable; their variety can soon be changed by the process of GRAFTING.

If the reader will have a little patience, I will give him my experience on this subject. Some years ago, I planted a vineyard, and, to make the variety as extensive as possible, having a strong partiality for native plants and fruits, selected cuttings from many wild varieties on the neighbouring hills and in the surrounding valleys. After bestowing a great deal of labour and attention on them for several years, I found that they would not meet my expectations as fruit-bearing vines, and concluded to try the experiment of grafting them. Having prepared myself with scions for the purpose, I commenced one morning, about the last of March, by removing the soil from the vine to the depth of five or six inches; sawed off the vine about two inches below the surface; smoothed the end of the stump with a sharp knife—split the stump in the centre with a chisel—cut the butt end of the graft in the shape of a wedge, so that the first bud would come on, or immediately above, the shoulder of the stump, leaving but two buds on the graft, one of which would come above the surface of the ground. The stumps being from an inch to an inch and a quarter in diameter, I put two grafts in each stump, one in each side, with the outside bark to coincide with that of the stump—covered the top and cleft sides of the stump with grafting wax (made of beeswax, rosin and tallow) so as to prevent the bleeding of the sap—replaced the soil carefully around and over the stump, covering the first bud and leaving one only above the surface, and marked the place with a stake to prevent accident. I used no matting or tying of any kind, the stump being strong enough to hold the grafts.

I thus grafted one hundred and twenty vines the same day. It so happened that when the grafts were set in the last twenty stumps, and the wax adjusted, ready for replacing the soil, I was called from the field for some purpose, and the soil was not replaced about the stumps for two or three days. Now mark the difference occasioned by so slight an accident. Of the first hundred, not more than four or five missed growing—of the last twenty, full one half missed. The grafts that grew, did well, and the next year produced a crop of fine *Catawba* Grapes.

I have since grafted grape vines the same way, and with equal success, always being careful to replace the soil immediately.—*Hovey's Magazine of Horticulture.*

Sagacity of the Ass.

Not a few pens, and some of great ability, have taken up the defence of this ill-used animal. "The ass," said the prophet of old, "knoweth his master's crib;" but the ass of our times is not so fortunate, for, as a pleasant writer observes, the poor beast is utterly unacquainted with the nature of a rack, and knoweth not even the existence of a manger. He is a houseless vagrant over commons and along lane sides; he is a beast among gipsies, and a gipsy among beasts. He is unfed, untended, unpitied, he is hated, kicked, spurned, thumped, lashed, tormented, troubled, and thrashed in every possible and devisable fashion—and for why? Your "most exquisite reason," good public? Alas! he is—an ass.

In Britain, the nature and disposition of the ass is quite destroyed through carelessness and cruelty—

> "The ass grows dull by stripes, the constant blow
> Beats off his briskness, and he moves but slow."

But among the peasantry of Spain the ass is a petted favourite, almost an inmate of the household. The children welcome him home, and the wife feeds him from her hands. Under this kind treatment his intellect expands, and what we denounce as the most stupid of animals actually becomes sagacious, following his master, and coming and going at his bidding. Mrs. Child relates, that a Spanish peasant and his ass had daily, for many years, carried milk round to several customers in Madrid, till at length the peasant became very ill, and had no one to send to market. At the suggestion of his wife, the panniers were filled with canisters of milk; an inscription, written by the priest,

requested customers to measure their own milk, and return the vessels; and the ass went off with his load. He returned in due time with empty canisters, and thus he continued to go to and fro for several days. In Madrid, the house-bells usually pull downwards, and the ass stopped before the door of every customer, and, after waiting a reasonable time, pulled the bell with his mouth. —*Blackwood's Magazine.*

Philosophy of Farming.

Here is the secret of good farming. You cannot take from the land more than you restore to it, in some shape or other, without ruining it, and so destroying your capital. Different soils may require different modes of treatment and cropping, but in every variety of soil these are the golden rules to attend to: Drain until you find that the water that falls from heaven does not stagnate in the soil but runs through it and off it freely. Turn up and till the land until your foot sinks into a loose, powdery loam, that the sun and air readily pass through. Let no weed occupy the place where a useful plant could possibly grow. Collect every particle of manure that you can, whether liquid or solid. Let nothing on the farm go to waste. Put in your crops in that course which experience has shown to lead to success in their growth, and to an enrichment and not impoverishment of the land. Give every plant room to spread its roots in the soil, and its leaves in the air.—*Agriculturist.*

Value of old Rope.—Among the numerous worn out, and often considered worthless, materials, which the ingenuity of man has discovered means of remanufacturing, and rendering of equal value to its original substances, are old tarred ropes which have long been in use at coal pits. Our readers will be surprised when we inform them that out of this dirty and apparently unbleachable substance, is produced a tissue paper of the most beautiful fabric, evenness of surface, and delicacy of colour, a ream of which, with wrapper and string, weighs 2 1-2 lbs. It is principally used in the potteries for transferring the various patterns to the earthenware, and is found superior to any other substance yet known for that purpose; it is so tenacious that a sheet of it, if twisted by hand in the form of a rope, will support upwards of one cwt. Truly we live in an age of invention.—*Farmer and Mechanic.*

Remarkable Instance of the Vegetation of Maize, or Indian Corn.—In the year 1754, a member of the Bath Society, England, obtained while in Strasburg, an ear of Indian corn, which was preserved with the husks on until the 28th of February, 1788, when six grains were taken from it, soaked in water fifty-four hours, and planted in earthen pots, in a hothouse. In about twenty days they began to appear, and four out of the six grew to about the height of three feet, and two produced ears completely formed. The pots were taken out of the hothouse the latter part of June, and the ears were gathered the beginning of October. Six other grains taken from the same ear were planted in a garden without soaking, but showed no signs of vegetation.—*Exchange paper.*

Pickled Eggs.—In some parts of England, pickled eggs constitute a very prominent feature in the farm-house store-rooms. The mode in which the good dames pickle them is simply thus: at the season of the year when their stock of eggs is plentiful, they boil some few dozens in a capacious saucepan until they become quite hard. They then, after removing the shells, lay them carefully in large mouthed jars, and pour over them scalding vinegar, well seasoned with whole peppers, allspice, a few pieces of ginger, and a few cloves of garlic. When cold, they are bunged down close, and in a month are fit for use. Where eggs are plentiful the above pickle is by no means expensive, and is a relishing accompaniment to cold meat.

THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

Philadelphia, Third Month, 1848.

The Editor of the Farmer's Cabinet will relinquish its publication at the close of the current volume in the seventh month next. He will dispose of the concern upon terms that may be advantageous to any one who may incline to continue it.

An advertisement in the present number of the Cabinet, will show that John Wilkinson, of the Duchess Agricultural Institute of Duchess county, New York, is about to remove his establishment to Mount Airy, the well known residence of James Gowen, one of our most enterprising and successful farmers. The high character of those to whom the advertiser refers, leaves no room to doubt his thorough qualification for the responsible duties he is about to assume in our vicinity. We presume farther, that our friend J. G.

would be exceedingly tenacious of his own high reputation, and therefore unlikely to risk the undertaking with one in whom he did not place the most implicit reliance.

We sincerely hope that this enterprise may be as successful in every particular, as its objects are important to the great farming interests of the country.

The *American Journal of Agriculture and Science* has passed from the hands of Dr. Emmons and A. Osborn, by whom it has for some time been ably conducted, into those of our friend C. N. Bement, well known to the readers of the agricultural journals of the day, as an experienced and valuable writer for them. We trust its usefulness may not be diminished by the change; and hope that the *market*, spoken of in the introductory remarks, may be a *profitable* one. It is still published monthly at Albany, N. Y., at two dollars a year.

The estimate of the present population of the United States, and of the crops for the year 1847, compiled from the Report lately laid before Congress by the Commissioner of Patents, on page 248, will be found a highly interesting paper. It is marked throughout with evidences of the uninterrupted increase of numbers, as well as of the means of subsistence.

The advertisement of Paschall Morris and Ezra Stokes, will be found on this page. To those who would supply themselves with good and genuine trees, every facility is, we think, afforded by them. Orders will be received by the editor, at this office.

We do not recollect the recent introduction of any one convenience to the appliances of the farm house, that is at all comparable to that which attends the use of the Hydraulic Ram. Many farmers in this vicinity, not only in this State, but in New Jersey also, and Delaware, have availed themselves of it, and they find it to work well, and to save much labour. There may be many situations where the water may be brought by the force of its own gravity, to the house and barn, without the services of the Ram. The editor was a few weeks ago partaking of the open hospitality of his friend William R Tatum, whose farm lies on the north side of Woodbury creek, half a mile from Woodbury, the county town of Gloucester, in New Jersey. We were particularly pleased with the manner in which he had secured to his family and barn-yard stock, a plentiful supply of the all-important beverage, at all seasons, without the labour of pumping. About 500 yards from his house, on the south side of the creek, on his neighbour's land, he found a spring about ten feet higher than his kitchen floor. The water of this spring he has made completely tributary to his wants and family comforts. He brings it through a leaden pipe of ½ or ⅝ inch bore, under the bed of the creek, and sufficiently below the surface of the ground to be out of danger from the frost, to a reservoir under his shed; from which, when the water reaches a certain height, it passes through another leaden pipe down to the trough in his cow-yard: this is always kept full, and the superfluous water is carried thence into his sheep-yard. The operation appears complete, and has been effected at an expense of about $125. We have been induced to make these remarks in consequence of the letter from W. Bacon, on page 245.

☞ SHORT ADVERTISEMENTS,

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line. Payment in advance.

The quantity of rain which fell in the 2nd month 1848, was ..... 1.443 in.

Penn. Hospital, 3rd mo. 1st.

CONTENTS OF THIS NUMBER.

THE FARMERS' CABINET,

IS PUBLISHED MONTHLY BY

JOSIAH TATUM, No. 50 NORTH FOURTH STREET, PHILADELPHIA.

It is issued on the fifteenth of every month, in numbers of 32 octavo pages each. The subjects will be illustrated by engravings, when they can be appropriately introduced.

TERMS.—One dollar per annum, or five dollars for seven copies—*payable in advance.*

All subscriptions must commence at the *beginning* of a volume. Having lately struck off a new edition of one or two of the former numbers, which had become exhausted, we are now able to supply, to a limited extent, any of the back volumes. They may be had at one dollar each, in numbers, or one dollar twenty-five cents half-bound and lettered.

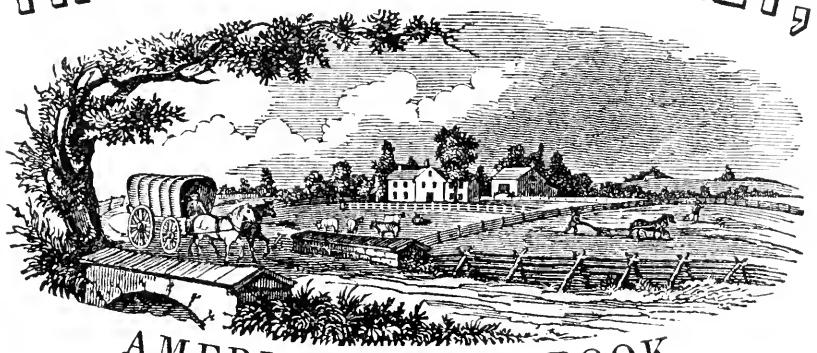
For eight dollars paid in advance, a *complete set* of the work will be furnished in numbers, including the 12th volume. The whole can thus readily be forwarded by mail. For twenty-five cents additional, per volume, the work may be obtained neatly *half-bound and lettered.* Copies returned to the office of publication, will also be bound upon the same terms.

By the decision of the Post Master General, the "Cabinet," is subject only to newspaper postage.

Joseph Rakestraw, Printer.

THE FARMERS' CABINET,

AND



AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—Liebig.

Vol. XII.—No. 9.] 4th mo. (April) 15th, 1848. [Whole No. 159.

PUBLISHED MONTHLY,

BY JOSIAH TATUM,

EDITOR AND PROPRIETOR,

No. 50 North Fourth Street,

PHILADELPHIA.

Price one dollar per year.—For conditions see last page.

Agricultural Dinner at Sir Robert Peel's.

The following are part of the extracts made by the Farmers' Library from a London Agricultural Journal, giving an account of a *farming party* which assembled at Sir Robert Peel's, Drayton Manor, on the 24th of Ninth month last. The readers of the Cabinet may wish they could have been present at the gathering. Among the persons assembled were Earl Talbot, Lord Forester, Lord Hatherton, Sir Francis Lawley, Dr. Buckland, the Dean of Winchester, Dr. Lyon Playfair, &c.—Ed.

Mr. Woodward said, that although unaccustomed to public speaking, and feeling diffidence in addressing an audience consisting of some of the most intelligent and scientific men that England can boast of, he would endeavour to give the meeting the result of his practical experience of twenty years as an agriculturist. In his opinion, thorough draining was the foundation of all good husbandry, *without which manures and skill are thrown away.* Some undrained land had come into his occupation—heavy land, which only produced 10½ bushels of wheat per acre; he immediately drained it three feet deep, subsoiled it, dressed it with burnt clay, and the *first year obtained from it* 51 *bushels.* He regarded the extensive *burning of clay* land as a most important practice. It rendered the soil so much more friable and convertible, and enabled the farmer to work it with much less horse labour. The *effects of burnt clay upon all green crops were wonderful*—a most important fact, which could not be too strongly impressed upon the mind, as being very essential to the growth of corn, especially when consumed upon the land by sheep, eating at the same time a little oil-cake or refuse corn. He had not, however, found advantage in the use of Italian rye-grass, which he thought undeserving the praise it had received. The treading of sheep was highly advantageous to the wheat crop, provided the land was *thoroughly drained and subsoiled.* In order to secure the requisite amount of pressure, he had not only employed sheep but horses, or even men, who he found could tread down land for 1s. 6d. an acre. He had also found advantage, under some circumstances, in the use of an instrument which he called a peg-roller. This was formed of an elm-wood cylinder, studded with oak pegs about four inches apart; it proved to be a most effectual implement when drawn over the land—imitating, as it did, the consolidating power exercised by the feet of a flock of sheep. He regarded pressing down the land as opposing an invincible obstacle to the opera-

tions of grubs and wire-worms. As to dead fallows, he entirely objected to them as wasteful and useless. On his clay land, when in turn for fallow, he planted vetches, and on his gravel, rye, and rye and vetches. For cleaning his stubbles after harvest, he employed the implement called a two-edged "skim," which he strongly recommended as a cheap and most valuable modern invention. Mr. Woodward then pointed out what he regarded as the best manner of breaking up inferior pastures, and converting them into arable; and concluded a very instructive speech, by forcibly pointing out the absolute necessity of *sending back to the land whatever is removed by a crop*, and by expressing his entire agreement in opinion with Mr. Woolwich Whitmore, Mr. Huxtable, and others, that farming *properly and efficiently carried out, with capital and skill*, may be made as profitable an investment as railways or other branches of commerce. Being asked whether he held his land on lease, Mr. Woodward replied that he did. But even if he had not, he, nevertheless, was of opinion that the expense he incurred in the improvement of his land would have answered his purpose, for his improved wheat crop repaid those expenses immediately. Mr. Woodward having expressed a desire that Mr. Mechi would bring under the notice of the meeting the result of his high farming in Essex.

Mr. Mechi responded to the call. His practice in agriculture coincided so nearly with Mr. Woodward's, that it was only necessary to say, that he grew alternately grain and root or leguminous crops, endeavouring as much as possible to grow wheat alternate years. He had originally drained his land two feet eight inches deep, with pipes and stones, at a considerable expense; but since he had had the good fortune to meet with Mr. Parke's, he had amended his errors, and was draining more deeply and effectually with pipes alone, at one-third the cost. He rented some land adjoining his own; although he held but a seven years' lease, he drained it five feet deep with one-inch pipes, at a cost of from 35s. to 50s. per acre [say $8 to $12.] *He could not afford to deprive himself of the benefit of drainage.* He found it very unprofitable to farm such land undrained. *The very first wheat crop remunerated him for the whole cost.* The result of his improvements at Tiptree had been to double the produce of his farm and of his labour. A portion of it was formerly a swamp, not producing 5s. [$1 25] per acre. He had been entreated this year by a gardener in the neighbourhood to let those four acres to him, at an annual rental of £5 [$25] per acre. He had removed three and a half miles of unnecessary banks and fences. Taking the arable acreage of the United Kingdom, he thought they might safely dispense with 500,000 miles of unnecessary fencing, which, with its timber, displaced much food and labour. He considered the agriculture of this country in a very backward and unsatisfactory state, compared with its manufactures. The agricultural mechanical appliances were rude, costly, and unprofitable. The farm buildings generally were bad and uncentrically placed, causing a national loss of some millions—each ton of produce or manure costing an average carriage of 6d. per mile, renders the position of the building an important national consideration. *Wagons were a most unphilosophical contrivance.* It was quite clear that a long, light, low cart, on two wheels, having an area of capacity equal to a wagon, and only costing half as much, was a much more sensible and profitable mode of conveyance. The question was not now an open one, having been thoroughly discussed and decided upon at the London Farmers' Club; therefore the sooner the *wagons were got rid of the better.* With regard to the quantity of seed, his experiments—conducted now for three years, and publicly recorded—had uniformly been in favour of *thin sowing*—say from four to five pecks of wheat, and six to seven pecks of barley and oats. Some of the best farmers in his neighbourhood adopted this system successfully. It was highly important, in a national point of view, that this question should be settled; for, if the quantities he had named were available, adieu at once to the necessity for foreign imports. It appeared to be admitted on all hands that, if a bushel of wheat vegetated, it was an ample seeding; and it was reasonable that it should be so, because if each good kernel produced only one ear containing 48 kernels—and that was not a large one,—there was no allowance for increase by branching or tillering, which we knew would take place to a considerable extent in well-farmed land, containing an abundance of organic matter. Thin sowing delayed the ripening three or four days; consolidation by pressure prevented the developement and action of wire-worm and slug. He had found *salt tended to a similar result.* He salted all his wheat at the rate of four to eight bushels per acre, *and was determined to use much more.* He knew a gentleman in Northamptonshire, whose wheat crops could scarcely ever be kept from going down until he used salt, which had effectually kept it standing. He (Mr. M.) salted the manure in his yards. He found that it sweetened them—he supposed it fixed the ammonia. It was a sin-

gular fact that, while salt tended to preserve animal substances, it on the contrary rapidly decomposed vegetable matter. It was a cheap alkali of native production, costing only about 20s. to 30s. per ton, while all other alkalies were nearly eight times as dear. He strongly recommended the abundant use of bones, with and without acid, for root and green crops. It was evident that the bones formed in our growing animals and in our cows, from the produce of the farm, cost us 5d. [10 cents] per lb, or £45 [$225] per ton. Now if we could replace these, as we can do, by bone-dust, at £7 [$35] per ton, it was clearly good policy to use them. He considered the waste of the liquid portions of the manure in most farm-yards a *great national calamity. It was a great mistake ever to allow water to fall on manure.* Water was a very heavy article. A thousand gallons weighed 10,000 lbs., and was expensive to cart. He had heard farmers say, when rain was falling, that they should then litter their yards and make manure! *Straw and water, in fact.* He found in practice that animals did well on their own excrements and straw under cover—that they consolidated the mass until it was four feet thick, when it would cut out like a good dung-heap, and be fit to carry on the land. But if rain water were allowed to wash this mass, an injurious effect resulted both to the animal and to the manure. *He could not afford* to allow his manure to be well washed in the yards by drainage from the buildings, and afterward to be washed, dried, and mangled by putting it out in heaps and turning over. It was a waste of time and of money. He found that his crops grew better with unwashed manure. *A farm-yard should be like a railway terminus*, covered in, but amply ventilated. There were comfort and profit in keeping everything dry. It did away with the necessity for water carts and tanks—the liquid portions of the excrements being just sufficient to moisten the straw and burnt earth, or other absorbent material. He admired and practiced, to a certain extent, Mr. Huxtable's system of placing animals on boards. It would answer in a compact farm with good roads, and in cold climates, to feed sheep in the yards on roots. In mild climates, and dry, friable soils, it was most advantageous to consume the roots and green crops on the land by folding with sheep. There was no expense of carting off and carting back manure. Farmers had found out that the whole of the excrements were thus applied to the land, whereas in open yards with untroughed buildings, much was washed out and wasted. He hoped to see the time when tenants would consider it to be their interest—as in parts of Scotland—to pay 10s. per acre more rent for properly farmed, permanent and convenient building, and drainage, in lieu of the miserable and misplaced dilapidations of the present time. It was, no doubt, partly this difference that caused the Scotch rents to appear higher than our own. He was a decided subsoiler to the depth of at least two feet. It was a cheap and effective way of getting rid of strong rotted weeds, their crowns being generally just below the ordinary depth of ploughing. He did this in dry weather, and with the assistance of a heavy Crosskill roller and scarifier, made his fallows cheaply, quickly, and efficiently. He drilled his wheat at intervals of about nine inches, so as to hoe them with Garrett's horse-hoe. It cost about 1s. per acre. It was far more expeditious and efficacious than the hand-hoe, and only cost one-fourth the amount. He strongly advocated the abundant use of oil-cake, and also of chalk, on heavy clays deficient in calcareous matter. It had been proved that much more produce had resulted from oil-cake folding than where an equivalent amount was expended in corn. Good high farming was by far the most profitable—the starvation principle was a losing game. If we borrowed from the earth we must repay, or we should soon find an empty exchequer.

Rev. A. Huxtable then rose and spoke to the following effect: I think this by far the most interesting agricultural meeting that I have ever attended, on account of the variety of important views and practices which have been brought under our notice. For my own part, at so late a period of the day, I must content myself with adducing a few facts that have come within my own farming experience, and defending one or two points of my farming practice which have been glanced at by the preceding speakers. As I see so many landed proprietors around me, I must beg permission to impress on them the duty of allowing their tenants to break up, under proper restrictions, the poorer lands now lying in grass. I think that I can show from my own experience that national wealth, the profits of the tenant, and the interests of the labourer, are deeply concerned in converting poor pasture into tillage. Thus, in my own parish, five years ago, there being many labourers out of employ, I obtained the consent of my landlord, Mr. Sturt, to break up the whole of the grass lands of a small dairy farm. It consisted of 95 acres, 10 of which only were then under the plough. When I entered on the occupation, the farm supported 14 dairy cows, and grew 48 bushels of wheat and 40 bushels of beans. Now it annually produces 1600 bushels of wheat, 40

head of cattle, cows, yearlings, and calves, and 100 sheep are fatted, and 80 pigs, and where three and a half labourers were employed, 12 are now sustained all the year round. But the farm, gentlemen, labours under one embarrassment,—such a one as I wish you all felt—such an accumulation of manure that, with the fear of laid wheat crops before my eyes, I know not where to place it. Allow me to detail briefly the steps by which this surely happy result has been brought about. I began at the beginning. I first drained the land; but of draining you have heard to-day so much that I will only say that, though it has been most successful, I yet heartily wish that I had earlier known Mr. Parke's drainage. My fields would have been far more economically and effectually rid of their bottom water. I tried when this was done to improve the herbage of some of the better pastures, but neither liming, nor sheep-folding, nor guano, enabling me to cut more than 15 cwt. of hay per acre; I pared and burnt it all, and cut down, by my kind landlord's leave, all the hedge-row timber, and grubbed up all, save the boundary hedge, and have now a glorious farm. The next object was to provide for the permanent fertility of the soil by keeping a large amount of stock; for I hold that a farm ought to be made self-supporting as far as possible, and the purchase of manures should be regarded as only a temporary expedient, a necessary evil. My first effort to consume the green crops grown on half my farm was very expensive, and therefore unsuccessful; for with regard to the beasts, I was forced to purchase a ruinous amount of straw, and the sheep eating off the swedes on clay land in winter puddled the fields, and were themselves, amid good food, objects most pitiable. But when our principles are good, we must not allow slight difficulties to stop their application. I therefore determined to place my milch and store cattle on boards, as wood is an excellent non-conductor; and after a series of devices, I have succeeded in making them tolerably comfortable, so that I am now no longer dependent on my straw for the quantity of cattle which I keep. I am only limited in the number of animals which I keep by the amount of green food grown. In like manner, but with a variation of arrangement, the sheep were placed on small boards about three and a half inches wide, with an interval of about seven-eighths of an inch between each, to permit the manure to fall freely into properly prepared tanks below. This is by far the most successful provision which I have made. Of 1,000 sheep so placed, I have never had one lame. The pigs in like manner, when fattened, sleep on a boarded stage above their feeding place, and except in very cold weather require no straw for litter. Thus I have dispensed with a large expenditure of straw, which my cereals—half the farm—could not sufficiently provide. But I hear some one exclaim, "What do you make of your straw?" First of all, a good deal is required for bedding the horses, and the young stock which are in loose boxes; and as they never tread the green fields, they require a great quantity of white bedding. Secondly, a great deal is wanted for food, being mixed with the green leaves of the root crop and the mashed turnips. Thirdly, a ton per acre is used in making clover and vetches into imperfectly dried hay, with a due admixture of salt to arrest fermentation. These uses fully take up all the straw which I grow. I think the methods employed in preparing the manure from the "boarded" cattle deserve mention. First the liquid manure flows into large tanks; *below* them is another, which I call the mixing tank, for in it the manure is diluted with water to any degree which the state of the weather may require, the rule being that, in proportion to the increase of temperature must be the increase of dilution; *i. e.* the hotter the weather the weaker should be the manure applied. In order to avoid the expensive and often injurious water-cart, I have laid down over the highest part of my farm a main of green elm pipe, of two inches diameter, bored in the solid wood; at every 100 yards distance is an upright post, bored in the same manner, with a nozzle. A forcing pump fixed at the mixing tank discharges along these pipes, buried two feet in the ground, the fluid with a pressure of 40 feet; of course it rushes up these pierced columns, and will discharge itself with great velocity through the nozzle; to this I attach first of all 40 yards of hose, and therewith water all the grass which it can reach. To the end of this hose another 40 yards of hose are attached, and a still larger portion of the surface is irrigated, and so on for as many 40 yards as are required. When enough has been irrigated at the first upright, the nozzle is plugged, and the fluid is discharged at the next 100 yards distanced column, and so on. For this application of the hose I am entirely indebted to that most able man, Mr. Edwin Chadwick; the green elm pipe is my own contrivance. The cost of the prepared canvas hose, which was obtained from Mr. Holland, of Manchester, was 1s. a yard—the wooden pipes cost me only 1s. and being under ground they will be most enduring. By an outlay of £30 I can thus irrigate 40 acres of land; and see how inexpensive,

compared with the use of the warter-cart and horse, the application. A lad of fifteen works the forcing-pump; the attaching the hose and its management require a man and a boy. With these, then, equivalent to two men, I can easily water two acres a day, at the rate of 40 hogsheads per acre of the best manure in the world: I say *best*, because all chemists will assure you that the liquid contains the principal nitrogenous and soluble salts, and therefore is far more valuable than the dung, and it is plain enough to every man, though he be no chemist, that plants can only take up the manure in a liquid form. The principal use which I make of the hose is to water the clover, and, above all, the noble, but this day much decried, Italian rye-grass. How hard Mr. Woodward was upon its soft sweet herbage! Yet his own excellent principle, that you must carry back to the land an equivalent for what is taken away, may be successfully alleged in defence of this most productive and nutritious of all grasses. It is certainly true, that if you cut and carry away Italian rye-grass, and do not also carry back the manure made in eating it, you will not be able to grow wheat after it. But from my own observation, I know that if after each cutting the hose immediately follows, you may cut it without wrong to the land as often as you like, and an amount of fodder will be obtained which no other plant can approach. It comes the earliest, and grows the longest of all the grasses; and I feel confident that, with such appliances as I have mentioned, you may secure fifty tons per annum of this milk-giving, fat-producing, muscle making grass. I can refer to Mr. Dickinson, of Curzon street, as an authority for growing at least this weight of green food, and I believe far more. That you can cut it, by the help of liquid manure, six times a year, admits of no doubt. With regard to the manure made by sheep, as previously described, you will readily perceive its value, if you reflect that when you give a flock in their house 20 tons of Swedes and their tops, you have minus only the increase of their bone and wool made during the three months of their happy confinement, all the inorganic and most of the organic ingredients of the crop being under the boards; in fact you may say that on the boards you have a fatted flock, and below the boards yet 20 tons of Swedes and their tops. I think that a good deal of misapprehension prevails respecting this mode of shed-feeding sheep, for you hear frequent comparison made on the superior system of feeding off crops in the fields. I have no doubt that in the summer months, even fattening sheep will "do well" out of doors, and at the same time fertilize and consolidate the land; but I speak of feeding off winter crops by sheep which you wish to fat: and here I cannot think that the two systems admit of comparison, so superior are the results of the house and board system. But the conditions under which an animal is to be reared are quite different from those which you would observe in laying on fat. In the one case, exercise is absolutely necessary; in the other case, the quieter and more still the creature is kept the better. Briefly, then, my own practice, which science surely justifies, is this: the greater proportion, about two-thirds of my best roots are carted to the sheds, and given to the animals preparing for the butcher; whereas the tops and the smaller turnips are fed off by my breeding flock on the land, assisted by oil-cake and corn when necessary, and thus the land is rendered firm, and the ewes are kept in healthful exercise. Lastly, I must advert to the treatment of the dung made by the cattle and pigs. That on the boards is hourly swept down, and wheeled away to a long covered shed; contiguous to this is another shed containing a large store of burnt earth and other ashes. The dung is worked up with the ashes, and therewith are mixed the other manures, dissolved bones, soot, powdered chalk, &c. This, about eight or ten cart-loads per acre, is carted to the field ready for turnip sowing. The manure is drilled in by one of those that deliver moist manure, and thus eight acres can be got over in a day drilled on the flat. If the field is very poor the drill goes over four acres in the morning without seed; in the afternoon the same quantity is again deposited in the same ruts, and the seed upon this double discharge. The advantage of this is, that the dung is never exposed to the drying of the sun or air; that the seed being deposited over a moist bed, germinates immediately in the driest season, and cares not for the fly, though for the prevalent grub it is certainly no remedy. The pig manure I consider the best of all; because one-half of the corn I feed them on is in the shape of beans, which contains the best mineral ingredient for growing Swedes, as I have endeavoured to set forth in my "Lecture on Manures." These, gentlemen, then, are the principal points of the practice which have brought me into that pleasing embarrassment of which I spoke before, and which I wish may befall you all—more manure than you can safely put on your arable land.

According to the reports of our friends from various neighbourhoods in this vicinity, the promise of a wheat crop is a fair one.

An English Vendue.

It may be entertaining to many of our readers, to know what is sold on an English farm on the breaking up of the establishment. As a sample, a friend has cut from a late paper the following, which will give us a favorable idea of stock, implements, &c.—Ed.

Messrs. Morris & Son have received instructions from the Executors of the late Mr. Huntley, to sell by auction, without the slightest reserve, on the premises, at Lansannor Farm, situate about two miles distant from the town of Cowbridge, on Thursday and Friday, the 20th and 21st of January, 1848,

The whole of the undermentioned Stock, &c.: comprising 19 very excellent milch cows, either with calves at their sides or expected to calve in good season; one fat cow, two four-year-old in-calf heifers, three three-year-old ditto, four two-year-old ditto, six five-year-old oxen, in prime condition; four ditto ditto, four two-year-old steers, a remarkably handsome two-year-old Hereford bull, 259 very prime Southdown ewes, in lamb; 30 Leicester ditto, ditto; 55 Southdown wethers, 223 ewe and wether lambs, four rams and two yearling ditto. The sheep, which have been selected with the greatest care from the very best stocks, are perfectly sound and in good condition. Nine valuable draught horses, of great power and good constitution; a six-year-old black gelding, of great beauty, and tractable in harness; a bay hackney, 15 hands high; two two-year-old colts, by "Railway," out of well-bred mares; an active five-year-old pony, quiet to ride or drive, and excellent in its paces; five sows in farrow, a sow and litter of pigs, and one boar pig; two ricks of very prime barley, which will produce good malting samples; two ricks of wheat, one ditto seed clover, and two ditto of barley straw; a large quantity of very excellent and well harvested hay, about 10 tons of mangold wurzel, the crop of 15 acres of swedish turnips, five well constructed wagons, four broad-wheel carts, one narrow-wheel ditto; a four horse-power threshing machine, by Cambridge, of Market Lavington; an easy running cobourg, gig and harness, scarifier, iron roller, oak ditto, six iron ploughs, thee pair harrows, two pair of drags, turnip drill, winnowing machine, chaff cutter, 10 cattle cribs, sheep-washing apparatus, sheep cratches, corn screen, winnowing fan and stock, ox yokes and chains, several dozen hurdles, 30 sets of fore, shaft, and plough harness; six dozen sacks, two wheelbarrows, an assortment of smith's tools, ladders, hay-knives, pikes, rakes, &c.; a general and useful variety of substantial household furniture, in excellent preservation, barrel churn, cheese stand, double and single cheese presses, milk pails, leads, and tubs, cheese vats, butter trendles, &c.; eight hogsheads of very prime cider; cider press and mill, several various sized casks, and other valuable articles too numerous to particularise.

Sale of Crops in Scotland.

Above is given a specimen of the Stock, Implements, &c. sold at an English Vendue—below is given from the Mark Lane Express an account of a sale of crops at Ayr. When shall our mode of farming be such as to give an average of $55, for wheat, and $200 for potatoes?—Ed.

The sales of crop this year in our neighbourhood, have been well attended, and brought excellent prices. At Macnairston, wheat averaged £11 per Scotch acre, turnips £16; and at Friarland, beans from £10 to £12 15s. At Thornbrock, parish of Maybole, middling oats brought from £6 to £9; at Broadshean, £5 to £7; at West Enoch, £6 to £8; and, at Mackailston, potatoes brought upward of £40. Hay, in general, has also sold well, especially meadow, which is sought after for winter fodder. The above quotations are from a few of the last of the numerous sales conducted by Mr. Mitchell, auctioneer, Maybole, this year.

Horticulture.

There is probably no employment or recreation which has a stronger tendency to purify the heart, improve the taste, or strengthen the physical constitution, than a love of horticulture. If a man would truly enjoy his garden, take delight in his flowers, and appreciate his fruits, he must be his own gardener, prune his own trees, gravel his own walks, and cultivate his soil. It is related by Cicero, that when Lysander visited Cyrus of Persia, a prince equally distinguished for his empire and his genius, Cyrus showed him a piece of ground *well enclosed and completely planted.* After the visiter had admired the tall and straight trees, and the rows regularly formed, and the ground clear of weeds and well cultivated, and the sweetness of the odors which exhaled from the flowers, he could not help expressing his admiration, not only of the diligence, but of the skill of him by whom all this was measured and marked out; upon which Cyrus answered, "It was myself who *measured* everything, the *rows* of trees are of my disposing, the plan is mine, and many of the trees were planted with my own hand."

A truly kingly recreation and a noble example.—*Boston Journal.*

Potatoe Murrain.

By the above name was distinguished a moist gangrene which attacked very generally the potatoe crop of England, late in the summer of the year 1845. July and August were unusually wet and cold, and early in August there were sharp morning frosts. Immediately after, the stems began to decay; but the weather continuing wet, instead of their decay being dry, and attended with the usual phenomena of their reduction to mere woody fibre, the putrefaction was moist, and the smell attendant upon it precisely that evolved during the decay of dead potatoe haulm partly under water. The stem decayed whilst the fibres connecting the tubers with them were fresh and juicy—the putrefaction spread along these, the ichor being absorbed by their still energetic vessels, and passing into the still immature and unusually juicy tubers, imparted to them the gangrene; the infection first being apparent at the end nearest the connecting fibre, spreading gradually throughout the liber of the tuber, rendering it brown like a decayed apple, and lastly causing the decay of its interior portion. Previously to the final decay, the increased specific gravity of the potatoe was remarkable, amounting to one-third more than that of a healthy tuber—an increase caused by its greater amount of water. When boiled it became black; but when submitted to a dry heat of about two hundred degrees it rapidly lost moisture, and the progress of the ulceration was retarded, if not entirely stopped.

There can be no preventive for such a disease as this—and the only chance of saving the tubers is to mow off all the haulms close to the ground the moment infection is apparent in them. This might prevent the circulation of the ichor to the tubers. These should be taken up forthwith and clamped as recommended by Dr. Lindley, with a layer of earth or sand alternating with each layer of potatoes.

The disease seems to be the natural result of an excessive degree of wet and cold, at that period of closing growth when all bulbs and tubers require an increased degree of dryness and warmth. If the hyacinth, or tulip, or dahlia are submitted to similar unpropitious contingencies, their bulbs or tubers similarly decay.

It is not a new disease, for to a less extent it has been frequently noticed before. The best preservative of the tubers in such ungenial seasons is to take them up, to dry them perfectly, and then store them in a dry shed in dry coal ashes.

Much has been written on this subject, and the newspapers here and in Europe have been filled with speculations as to its duration, &c. The failure to a considerable extent of the crop of the present year, (1846,) would indicate that the disease is not of such temporary character as had been hoped and predicted. If it continue, all the old varieties must necessarily be abandoned, and reliance placed on new ones, raised from the seed proper; therefore, as a matter of precaution, we would recommend attention to that object. They are readily produced by carefully sowing the seed, and replanting the young tubers in successive seasons, until they attain full size. There is reason to hope such would be free from disease, or at any rate less liable to it, than the older varieties.—*Landreth's Dictionary of Gardening.*

From the Horticulturist.

Are the Old Pears Extinct?

I furnish, for the Horticulturist, a few facts, relative to the condition of the White Doyenne or Virgalieu pear, in western New York. Having been familiar with this pear for more than twenty-five years, and with its uniform excellence, health and productiveness, I had never taken the trouble to remember any particular facts upon the subject; supposing that, however worthless it might prove in some localities, its vigour and fruitfulness in most places would never be questioned. I have, therefore, been compelled to apply to some of my friends for additional facts of a tangible nature, to demonstrate what I had before taken for granted.

So far as my own experience extends, I may state that, during many years past, this pear has generally been regarded as *incomparably the best*, for all qualities taken together, throughout central and western New York. During my business of raising trees for dissemination, I have had more inquiries for this variety than for all others put together. Many of the most enterprising cultivators are planting large orchards, when they can obtain them from the nurseries, which are inadequate to supply the increasing demands. The old bearing trees with which I have been familiar, have regularly produced several bushels annually, and I have never seen a single specimen that did not possess the fine rich flavor, and delicious melting qualities, so conspicuous in this excellent variety.

A few particular instances, taken very much at random, may serve to exhibit definitely the productiveness of the tree. P. Barry, of Rochester, informs me, on the authority of H. N. Langworthy, that a tree, measuring about eight inches in diameter,

produced annually *five* to *seven* bushels of fruit, which sold for $2.50 to $3 per bushel. He also states that H. Colby, near that city, has a tree upwards of twenty years old, which produces annually (not under the most favorable circumstances,) two to three barrels of fruit, which he usually sells for about $8 per barrel.

Oliver Phelps, of Canandaigua, states that a tree upon his grounds, which was budded twenty years ago, has for the last six or eight years borne from *four* to *seven* bushels of uniformly fair and good sized fruit. Chas. Seymour, of the same village, informs that he has four bearing trees, one of them forty years old, the others twenty-five and fifteen years old; and that, although he is not in the practice of *measuring* the crop, "they are uniformly heavily loaded with fruit, and seldom fail to be large and perfectly fair." Ralph Chapin, also of that village, has a tree, at least twenty-five years old, in good bearing condition, which, for the last eight years, has borne from *three* to *seven* bushels annually. A tree, belonging to one of my near neighbors, usually produces several bushels yearly; the heaviest crop it has borne being *eleven bushels.* I have given these instances just as they came to hand, without selecting the most remarkable merely; and I could easily increase the number ten fold. Of some of the finest trees which I noticed the past season, I have had no opportunity of ascertaining the products. In most instances, the trees have grown in soil of medium fertility, and with little or no cultivation. It is scarcely necessary to add, that the highly respectable individuals who have kindly furnished me statements, are most of them thoroughly conversant with our finest varieties, and that there cannot be any doubt that the trees they possess are the veritable White Doyenne, almost universally known in western New York as the "Virgalieu." Nearly all agree in the opinion, that it is remarkably free from attacks of the blight.

The lowest price I have heard of, is $1.50 per bushel upon the tree. Ten dollars per barrel in New York city, has been common for some years past. Judge Phelps writes, in addition to the facts already quoted,—"I have been credibly informed by persons dealing in them, that they have sold in Albany and New York from $10 to $12 per barrel, of two and a half bushels. I saw them sold in October, 1843, in Fulton market, New York, by the peck, at the rate of $6 per bushel." P. Barry also states,—"The peddlers of our city collect them from every part of the country within fifty or sixty miles, ripen them gradually in their houses, and sell them during October and November at two to six cents each." A. Thorp, of Syracuse, informs me that at that place, where this pear flourishes admirably, the usual price is $3 per bushel.

In answer to an inquiry, David Thomas, of Aurora, Cayuga county, writes,—"My trees of this variety are among the most hardy and productive. Edwin B. Morgan told me yesterday that his had done finely, while all his other pear trees had been injured by blight. Several gentlemen with whom I conversed, laughed scornfully at the idea, that any one should think the Virgalieu was not one of the very best, most productive, and most hardy varieties; it was so very ridiculous! From three trees, at C. C. Young's, (at Aurora,) $39 were obtained from their fruit in the autumn of 1846.

J. J. Thomas."

Macedon, 2d mo. 12th, 1848.

We may add to the foregoing evidences of the productiveness and value of this finest of old pears, the following: We know very well a large fruit grower and fruit dealer in western New York, who sent to the New York market in the past two seasons, nearly *two thousand dollars* worth of this variety of fruit,—so beautiful and fair as to command the very highest price.

Instances of the great productiveness of the *Doyenné* are quite common in this state. We received very fine specimens of this pear last autumn, from J. C. Hastings, Esq., of Clinton, N. Y., with the following statement:—"This fruit was raised by my father, Dr. Seth Hastings, of this place. I give you the following account of the tree which grew it. He sold five and a half barrels from the tree this season, and had from one and a half bushels to three pecks that fell from the tree, and were bruised, rendering them unfit to pick and send off. The five and a half barrels were sold for $9 per barrel at home; and, with what fell from the tree, *he estimated the whole produce of the tree at over* $50. You can depend on this statement as correct in every particular; and I think it would be difficult to find many pear trees more productive."

With this kind of evidence, (and the same is true of the *Brown Beurre* and other old pears,) that, as Mr. Thomas says truly, may be multiplied in western New York ten fold, we think it can no longer be said, with any show of correctness, that these fruits are "run out;" that they are in their decadence; that they are unworthy of cultivation.

What, then, is the explanation of the absolute failure of such fine old pears as the Doyenné?—for we grant it is an absolute failure, in many of the long settled parts of

the country, and more especially in high sandy soils. What is the secret of the great productiveness, great beauty, and high flavor of this pear in some districts of the country—as in western New York?—*Editor of Horticulturist.*

Productiveness of Strawberries.—In all the long discussions about barren and fertile strawberries, the actual amount which each variety will yield per acre, which is of great importance, appears to be entirely forgotten. To one who raises for market, it is quite essential to raise such a variety as will yield a surplus of a 100 per cent. above the cost of raising, rather than one that will yield no such surplus at all; and the home cultivator wishes to get as much for his labor and land as practicable. Only a few statements of the amount per acre have been made. Hovey's Seedling, it is said, has yielded 2000 qts, or more than 62 bushels per acre. The Old Hudson (of Cincinnati) which is probably the most productive of all strawberries as yet cultivated, has produced, according to Nicholas Longworth, at the rate of 5,000 qts. or 156 bushes per acre. Burr's Late Prolific, a new variety lately originated at Columbus, Ohio, it is stated, yielded 35 qts. on a bed six feet by 20, which is about 240 bush. per acre; it doubtless received the best possible culture. It would be very interesting, and of great value, to know the comparative productiveness of the different varieties of the strawberry, raised side by side, and treated precisely alike. Such experiments would greatly facilitate the selection of the best sorts, for each different part of the country.—*Neal's Gazette.*

Letter of R. L. Allen.

The banks of the Ohio exhibit the same bold and attractive scenery which characterizes those of the Monongahela. There is, however, this difference. The elevated rocky heights, which seem almost to overhang the latter, frequently affording scarcely a by-path along the shore, recede from the margin of the former, leaving a wide alluvial bed on either side, beyond which the hills rear their gracefully rounded or precipitous crests, still almost everywhere covered by the original forests. These, with the herbage on the plains below, had been stricken by the autumnal frosts; and in the absence of the cheerful hue of the evergreens which line the more northern streams, gave a somewhat sombre aspect to the scenery. When clad in a luxuriant foliage of summer, I can imagine few views of the same extent, that afford more interest and beauty. For nearly 800 miles, through the perpetual windings of the Ohio, scarcely a single view can be found that would not make an attractive picture.

If shorn of its forests, more densely populated, and thoroughly cultivated, with numerous vineyards up its steep hill sides, with here and there an old castle occupying its almost inaccessible heights, the banks of the Ohio would resemble those of the Rhine. The castles and their feudal oppressors, I trust we may never see; but the cultivation of the vine is destined to be much more extensive here than it ever was or ever can be on the banks of Germany's famed river. Many vineyards are now planted on the Ohio, and the soil and climate are found suited to the production of the grape. Its success is now placed beyond a doubt. The perseverance and skill already enlisted in its cultivation, will eventually enable the vine growers of Ohio to supply the Union with its wine and winter grapes. I have full confidence in the future application of chemical principles to the preservation of this delicious fruit. This will furnish us a bountiful supply for months after its harvest, as a substitute for the insipid foreign grape which now graces the desert, rather as luxury to the eye than to the palate. I have seen many specimens of wine from the native vines, which, though generally differing in character from most of the imported, are rich in flavor, and yield the luscious odor and taste peculiar to that of the well-ripened foreign grape. When connected railroads shall have crossed the Alleghanies, and brought this fertile valley into close proximity, with the seaboard—which they will soon do—the markets of the Atlantic cities will be as fully and as regularly supplied with luscious grapes, as they now are with the fresh milk and cream carried to them from a hundred miles in the interior.

We reached Cincinnati in one of the well-conducted packet boats which run between this place and Pittsburg, in about forty hours. Here all was activity and bustle. Success had followed the last year's efforts of the merchant, the manufacturer, the artisan, and the farmer. Famine abroad, and war at home, had created a demand for the products and energies of all, and crowned each with prosperity. The consequences were evident in the lengthening streets, the new and massive buildings, and the more than Herculean excavations of the surrounding hills, which everywhere met the eye. The site occupied by this city is a segment of successive table lands (originally requiring but little grading), of which the river forms the arc, and a cordon of high precipitous hills, the chord. The table lands are already nearly covered

with buildings, and those gigantic hills have recently been attacked with a vigor that indicates their speedy demolition. There is a spirit characterizing many sections of our country, that amuses while it challenges our admiration. Fifty years ago, the ground now occupied by Cincinnati was a wilderness. Five years ago, Mount Adams, then remote from the city, was solemnly dedicated to science, and set apart as a permanent retreat for the astronomers of the western hemisphere. A beautiful observatory crowns its summit and brings the star gazers nearer the object of their research. I climbed its lofty heights, and judge of my surprise to find a recent excavation of fifty feet, directly in front of this consecrated spot. The foundations are already crumbling beneath the blows of the sappers, and these are temporarily sustained only by massive buttresses of mason work. Streets are laid out, and shops and shanties encircle it. What was recently a worthless and almost inaccessible hill, yields a harvest of lots worth $40 per front foot! The *dollar* has encountered science, and it needs no prophet to foretel the issue of the contest; and like the Indians and Mexicans, she must yield, and seek a temporary retreat beyond the immediate convenience of her antagonist.

What a vision is opened from the summit of this hill! What profusion of nature and art! A population of 100,000* lie at your feet, in the possession of wealth, luxury, and intelligence, far beyond the average enjoyed by civilized nations. They are surrounded by wealthy farmers, mechanics, merchants, and professional men, whose homes reach beyond the great northern lakes, beyond the Mississippi, and to the very shores of the Mexican gulf. And this whole region, but half a century since, was an almost unbroken wilderness. From the comparatively ancient Fort Le Boeuf, boats may descend through French Creek, from 1,000 miles above. They can wheel on and ascend the Tennessee, 1,000 miles, through the midst of three magnificent states; or they may coast along the borders of two others, 1,000 miles more by the Wabash. They may pass round into the Mississippi, and penetrate nearly to its source, 2,000 miles more; or turn into the Illinois or Wisconsan, and reach nearly the same distance. Returning, they may ascend the Missouri, till the snow-clad heights of the Rocky Mountains meet their view; and farther down the Arkansas, the Red River, the Washita, the Yazoo, and the innumerable bayous below, afford an almost interminable line of water communication. And through all these extended avenues, the resources of the country, in its soil and minerals, its elements of wealth, and capacity for ministering to the comfort and prosperity of its inhabitants, are unsurpassed.

Art asks you to observe her achievements. She points out her thousands of buildings, all well furnished with the objects for which they were designed; her numerous steamboats moored at her wharves; her miles of manufactories stretched along the shore and climbing the hills in her rear. There is the Whitewater Canal, leading into Indiana; here the Miami, reaching to Toledo on the northern lakes. On the opposite side, the railroad extending to Sandusky, and at a lower point on the same waters, it is soon destined to connect with Columbus and Cleveland; while another will ere long reach the tide waters of the Atlantic. Fine McAdam roads radiate to every important point in the interior; and over all, from east, north, south, and west, flashes the electric telegraph, with intelligence from every quarter of the globe. Such are the advantages, and such the achievements of American freemen, for a single half century.

Although heretofore, and probably destined for a long time to remain, an important element in the prosperity of Cincinnati, there is one feature which detracts much from the interest that would otherwise attach to it. It is the Porkopolis, not only of America, but of the world. No other place on its surface, ever witnessed the annual slaughter of so many of the "swinish multitude," as is here compressed within the limits of a few weeks. It is estimated that nearly 400,000 will yield up their greasy lives at this place the present year. It is the height of the packing season, and the streets are filled with their unwieldly forms, wending their weary steps to their last home. The air is redolent of their grunts and odors; and the tables groan beneath their spare ribs, their joints, their hams, their head cheese, souse, sausages, and sides. Every wagon you meet is loaded with them, piled up like ricks of hay; and every warehouse is crammed with these precious freights. I have seen piles of coffee and cotton, before at New Orleans and elsewhere; but the piles of dressed swine here far exceed (relatively) anything of the kind I have ever witnessed.

I called on our friend, and the friend of agriculture, Mr. Neff, who has recently turned his attention to beef packing. This is now second only to that of pork in importance. The introduction of the best breeds, and especially the Short Horns, has largely

* This is about the population of Cincinnati and its suburbs; and the thriving villages of Newport and Covington on the opposite side of the river.

increased the value of cattle for packing. Although not fed to the extent I think they should be for the best interests of the farmer and the packer, they are highly improved from what they were but a few years since. In this career, no one has been more conspicuous than Mr. N., or has pursued the subject with more constancy, intelligence, and liberality. He has a farm in Illinois of 6,000 acres, where he annually fats from 1,000 to 2,000 head, which are brought to Cincinnati for packing. He considers $400 to $500 well expended in a good bull, whose services he is willing to bestow gratuitously for the purpose of getting the progeny, when ready for market. These, he thinks as ripe at three, as the common cattle of the country are at five or six years old. A handsome fortune has attended his efforts. It is to be hoped that others engaged in the rearing of stock, will follow, with equal perseverance and success, so laudable an example.—*American Agriculturist.*

Cincinnati, Nov. 24th, 1847.

Irrigation.

Irrigation, as employed by the farmer, is chiefly beneficial in proportion to the amount of saline and decomposing matter contained in solution by the water employed. But this is not the exclusive cause of benefit, for much of this arises from the increased and permanent supply of moisture to the roots of the plants. These can only derive food from the soil in a gaseous or liquid form; and the decomposing matters in a soil decompose, and constantly are converted into gaseous and soluble matters, with a rapidity proportioned to the abundance of water supplied to them. Experience shows that there is in the kitchen garden scarcely a crop that is not benefited by a much more abundant supply of water than can be obtained usually; and I can bear testimony to the correctness of Mr. Knight's conclusion, not limiting, however, my approval of such abundant watering to late crops of peas, but to all, as well as beans, spinach, and the entire cabbage tribe. Kidney beans and potatoes are not benefited by such an abundance of water.

"The quantity of water," says Mr. Knight, "which may be given with advantage to plants of almost every kind, during warm and bright weather, is, I believe, very much greater than any gardener who has not seen the result will be inclined to suppose possible; and it is greater than I myself could have believed upon any other evidence than that of actual experience.

"My garden, in common with many others, is supplied with water by springs, which rise in a more elevated situation; and this circumstance afforded me the means of making a small pond, from which I can cause the water to flow out over every part of every other kind through every part of the summer; and I cause a stream to flow down the rows of celery, and along the rows of brocoli and other plants, which are planted out in summer, with very great advantage. But the most extensive and beneficial use which I make of the power to irrigate my garden by the means above mentioned, is in supplying my late crops of peas abundantly with water, by which the ill effects of mildew are almost wholly prevented, and my table is most abundantly supplied with very excellent peas through the month of October."—*Dictionary of Gardening.*

For the Farmers' Cabinet.

Spirits of Turpentine, a cure for Poison.

If any person should be stung by a bee or other insect, rub some spirits of turpentine on the place, the pain will nearly cease in one minute. It is said that the pain arising from the bite of a copper-head may be arrested in a few minutes, by the continued application of this article, and from my own knowledge of its effects in other cases, I have not the least doubt of it. The effect of all poison is to contract the blood vessels and prevent a free circulation; the natural consequence is pain and inflammation immediately. Spirits of turpentine, by their penetrating and expanding qualities, soon overcome the difficulty.

Can some one tell how to make Soap?—If the Editor, or any of his correspondents, would furnish a rule by which every housekeeper might make soap the *first trial*, they would confer a favour that would long be remembered by many. M. T. J.

Short Creek, Harrison Co., Ohio.

Hints to Lovers of Flowers.

A most beautiful and easily attained show of evergreen may be had by a very simple plan, which has been found to answer remarkably well on a small scale. If geranium branches are taken from healthy and luxuriant trees, just before the winter sets in, cut as for slips, and immersed in soap and water, they will, after drooping for a few days, shed their leaves, put forth fresh ones, and continue in the finest vigor all winter. By placing a number of bottles thus filled in flower baskets, with moss to conceal the bottles, a show of evergreens is easily insured for a whole season. They require no fresh water.—*Court Journal.*

Fencing.

An ordinary sized farm, of one hundred acres, divided into ten acre fields, as many have them, would take two hundred and seventy-five pannels to enclose ten acres; this at eighty cents per pannel, (and many calculate it one dollar,) would cost the sum of two hundred and nineteen dollars, and the yearly interest at six per cent. would be thirteen dollars and fourteen cents on ten acres —the sum of one dollar and thirty cents per acre, or the enormous sum of two thousand one hundred and ninety dollars (the interest of which would be one hundred and thirty-one dollars and forty cents) on the farm. The fence, it is believed, would decay entirely in thirty years, which would be a total loss of capital to the country, amounting to two thousand one hundred and ninety dollars; besides, it must be repaired once during the above period with new posts, at a cost of posts and labour to the amount of six hundred and eighty-seven dollars and fifty cents; which would make twenty-eight hundred and seventy-seven dollars and fifty cents, or an annual loss, for thirty years, of ninety-five dollars and seventeen cents.

I once heard Nicholas Biddle say, the cost of fencing alone in the State of Pennsylvania would pay the State debt—which is about forty millions. Need any State or community be long in debt, when it is in the power of the farmers alone to liquidate it? You will ask, how is the farmer to pay? he is already taxed to the limit of his means. I will inform you—revive an old law that has lain a dead letter on your statute book for a century. Our forefathers in that respect were wiser than their children of this generation —they foresaw the expense and difficulty of fencing, or brought the knowledge of it with them from Europe. They thought it unnecessary to fence the highways, and for line fence they made provision by enactments. But we might go one step farther, and do without line fences, and inside as well as fences on the highways. In England they make out with much less fence than in this country. On the Continent there is very little fence. There are in New England large agricultural districts without any fence. In China, where agriculture is understood better perhaps than in any other country, there are no fences. In Peru, before the conquest, the cultivation of the land was an object of the highest consideration—few nations understood it better—but there were no fences. What a beautiful landscape our country would present, were it not for the immense amount of old rotten rails and posts, which now meet the view. We should see the country thick set with beautiful cottages, with green lawns between each one's portion, and the land teeming with a population of health and happiness. Our sons and daughters would not for a long time have to seek homes in the far west. The resources of our land are not more than half developed, and under this change the population could be doubled in our most populous districts. The agricultural products can be vastly increased on our most productive lands. Instead of keeping a race of animals to make fences for, which will not pay a tithe of the interest the fence costs, we should have none but such as we really need, and they should be kept in barns and enclosures to suit the owner. Besides, if we continue this system of fencing, I want to know by what means we are to be furnished with the material? Our timber is already exhausted; we have not enough in the country to reset the fences, and it is fast disappearing from other parts. We must resort to hedges, ditches, iron or stone fences. These have all been proposed, are all expensive, and all have their objections. Then why not do without them? By the time the fences must be reset, turn your stock into such animals as are worth their keep; improve your land, and manure with concentrated manures, and my word for it, your profits will be greater than they ever have been. This, together with the use of lime, will insure success.—*Salem (N. J.) National Standard.*

Plank Roads.

The Racine papers contain a report on the subject of Plank Roads, made by Philo White, Esq., chairman of a committee appointed at a meeting of the citizens of that town, to investigate the subject. The report is more complete than any thing we have before seen relating to the matter.

Our neighbours above are fully awake to the importance of the matter, and are determined to secure for themselves passable roads. There are several towns in our own State which would be vastly helped by such roads in and about them. We have hitherto not seen mention made of plank roads in and about Alton, Springfield, Jacksonville, Quincy, Peoria, and other Illinois towns, and perhaps the price of lumber at present would render their construction expensive; but we expect to see and hear these places in motion about it within two or three years.

"*Macadam* roads have been in use for more than a third of a century, while the adoption of *plank* roads, in the United States at least, dates back scarcely half a dozen years; and yet the latter seem in a fair way

almost to supersede the use of the former. Macadam roads are made of hard stone, broken up with hammers into pieces about an inch in diameter, and this 'metal' is spread on the bed of the road to the depth of six or ten inches. At first these roads are heavy to travel on, exceedingly annoying to tender footed animals, and laborious for a team to haul a loaded vehicle over; but in time the broken stone becomes partially pulverized, and forms a mass of comparative smoothness and solidity. Yet this solidity is not permanent; J. W. Brooks, Esq., Civil Engineer, writes us from Detroit, that 'a Macadam road, built with a sufficient quantity of stones [say *ten* inches in depth of the 'metal,'] to be durable, will be expensive in *any* locality; and built otherwise, it will be destroyed at the breaking up of the ground in the spring, or so injured as to require extensive repairs.'

In Canada, public roads, &c., are under the control of a 'Board of Public Works,' and from the report made by commissioners appointed to examine the state of the roads, we learn that a computation, based upon actual expenditures for construction and repairs, shows that more than three miles of plank road can be made and maintained, for one of stone (Macadamized).

On the line of roads running eastwardly out of the city of Toronto, a Macadam road was first made, under the impression that the immense travel over it would wear away a plank road so rapidly as to render its frequent removal very expensive. But the result of the experiment was, that within a very few years a plank road was laid down alongside of the Macadam, and the latter used as a turn-out path! And the report to the New York Senate on the subject of plank roads, declares that 'experience has proven, that a plank road over the same line with a Macadam one, can be built and maintained for less than the interest on the cost of the latter, added to its yearly required repairs.'

Hon. George Geddes, member of the New York Senate, and who superintended in part the Salina plank road, in speaking of the comparative value of Macadam and plank roads, considers the plank vastly superior to the stone structure; he says: 'I have seen a Macadam road taken up, eight feet in width, to make room for plank track;' and that men who have travelled over the best roads in England say, 'there is not in Great Britain as good a road as the Salina plank road.'

It seems that all experience goes to show, that a horse will travel in any kind of wheeled vehicle at an average of one fifth faster on a plank than a Macadam road, and draw at least one fifth more freight with the same ease.

An intelligent correspondent of the Detroit Free Press says: 'A plank road near Toronto, parts of which are entirely worn through, and whose sides touch a Macadam road, is now in use, and is constantly occupied by vehicles, with and without loads, in preference to the stone (or Macadam) road. On this road, the very beasts of burden instinctively prefer the plank to the Macadam path; and when reined from the former to the latter, if left to themselves, will immediately run back upon the plank.'

But the following facts, related by Henry Ledyard, Esq., of Detroit, go far to show that plank roads are preferable to Macadam *under all circumstances.* At a town in New York a plank road is about to be constructed, where, for a reach of thirteen miles, the line of road runs along a ledge of exposed *rock, proper for Macadamizing*, which only needs to be tumbled into the road-way,' ready for use! Here, *if anywhere*, it might be supposed a Macadam road could be profitably made. In another town of the same State, 'movements are making to take up the cobble stone pavement of a street, for a distance of two miles, and lay down a plank road in its stead.'

It has already been remarked, that plank roads are peculiarly adapted to low, flat, or wet regions; and in such localities, practical business men can construct them without the expense of employing an engineer. But their adaptation to a rolling and even hilly country, has been fully and favorably tested. As their smooth and even surface opposes no resistance to the wheel of a road vehicle, the draught on them up an inclination is much easier than on an ordinary road, demonstrating their ability to overcome considerable elevations; the exposure of the horses to slipping on such ascents, being almost entirely obviated by a slight covering of earth or sand upon the planks. On the alternate plank and Macadam road at Toronto, the plank portion of the road follows the same inequalities of surface of the ground, that existed before the Macadam road was superseded by it; and the writer in the Detroit Free Press says it rises and descends hills of much sharper grade than the foot of Woodward Avenue in the city of Detroit. Thomas G. Alvord, Esq., member of the Legislature, and superintendent of the Salina road, writes us, 'We pass over rises in our road (short, it is true,) of one foot in ten;' and further, 'that it is far easier to go over the same elevation on a plank road than on a common dirt road.'

Lord Sydenham having become impressed with the great utility of plank roads during his residence in Russia, (which country we

believe led the way in their adoption,) introduced them into Canada on his accession to the Governor Generalship of those provinces; and it is now about nine years since the first plank road was constructed there under the supervision of the Government; although a short experimental road was tried at Toronto two years previously, and a short piece of rude structure of the kind was laid at Quebec some thirty years ago. So perfectly satisfied have the Canadians now become of the immense advantages resulting to their farming and commercial interests from the introduction of plank roads, that they have gone more extensively into these splendid road improvements, than any kingdom or republic on the globe. These Canadian plank roads are principally located in the London district, Canada West. There is one from Port Stanley to London, 26 miles; 2d, from Hamilton to Port Dover, 36 miles; 3d, London to Brantford, 57½ miles; 4th, London to Chatham, 67½ miles; 5th, Chatham to Sandwich, 60 miles; 6th, Chatham to Amherstburg, 18 miles; 7th, London to Port Sarnia, 62 miles; one in progress from London to Port Goderich, 75 miles; two or three radiating from Toronto, one or more at Montreal and Chambly, one at Quebec, and several others of less note in other parts of the provinces. Of the precise number of these roads in Canada, we are not advised; but we learn that their aggregate length is between 400 and 500 miles.

We learn from Mr. Alvord, that the Salina road has divided 12½ per cent. profits the last year, with a reserve of surplus profits of over $3000. The Salina was the first plank road finished in the United States. Of the Rome and Oswego road, 56 miles are finished and in use. Besides these there are some twenty other plank roads in the State of New York, of the aggregate length of 336 miles, the stock of which is taken and they are to be built in the spring. And there are half a dozen others projected there, and will probably be made, of some 144 miles in length. In Ohio there is a plank road in progress from Milan south, 45 miles.

A gentleman (quoted in Ellsworth's Patent Office Report) says that on the Toronto plank roads, after seven years' use, 'the top surface of the plank was found to be worn in the centre for the breadth of seven feet only, and to the depth of ⅝ of an inch;' the rest of the surface, say four feet, (the entire track being twelve feet,) was almost as untouched as when the planks came from the saw; of course one third of this planking was useless, and one third the expenditure on account of it a dead loss! It has become a settled principle, that travel on all roads will concentrate within a narrow range—say within a width of seven or eight feet near the centre of a plank road; it follows then, that all over three feet for a single track is, for all practical purposes, labor and material thrown away."—*Prairie Farmer.*

From the Southern Cultivator.

Loss of Pork in Making Bacon—Fattening Hogs.

Mr. Editor:—Persons, at times, are desirous of knowing how much bacon a given amount of pork will make. I have often asked the question, but could get no satisfactory answer. This winter I ascertained the facts for myself, and now send them to you, for the information of others.

I killed six hogs, well fattened, ranging from ten to eighteen months old, weighing 877 pounds. They were truly *Georgia hogs*, raised upon pine roots and *broom sedge* grass. I found the sides were 24 per cent. of the whole amount of the hog; shoulders, 22 per cent.; hams, 21½ per cent.; ribs and backbones, 11½ per cent.; heads, 9 per cent.; lard (leaf), 9, and lard (gut), 4 per cent.; loss in weighing, 4 per cent.

The quantity of lard will be increased, from the fat taken from the backbone, and the trimmings from the hams, shoulders and middlings. The entire spare-rib was taken out—and from the various parts the sausage meat was taken, after they had been weighed.

So that the rate per cent. of each part, would be diminished according to the extent of trimming. And though the exact proportion is not given, yet the facts I have stated are sufficiently accurate for general purposes. The quantity of lard will always be increased, and the trimmings for sausage meat are taken from those portions of the hog never consumed in the family, after it has been turned into bacon.

It is said by Solon Robinson, that meat loses ten per cent. in smoking. The facts I have furnished show that the hams, sides and shoulders of a hog are two-thirds of his whole net weight.

An experiment made by me with my hogs, satisfied me that boiled food was far cheaper to fatten upon than raw food. I took two hogs of the same litter, equally thrifty, and put them in separate pens. I fed one on raw corn, the other on boiled meal. Both had as much as they could eat. The one fed on boiled meal, well cooked, and made into a mush, was somewhat the fattest, but it did not consume one-fourth as much corn as the other. It commenced fattening earlier, and eat up clean all that was given it, while

the other, after becoming fat, would crack out the kernel or heart, and throw away the balance of the grain. I pretend not to give the reason for this; that I leave to you, but I know the practical fact well enough to determine me hereafter always to grind my corn, and boil the meal with which to fatten my hogs. M.

Eatonton, Ga., January, 1848.

The Locust.

THE common locust naturally abounds in the country west of the Alleghanies, as far as Arkansas. It is also plentiful in the Canadas, but is not found indigenous in the United States east of the river Delaware, nor does it grow spontaneously in the maritime parts of the middle and southern States, within the distance of fifty to one hundred miles from the sea. It is planted, however, for purposes of utility and ornament, from Maine to Georgia. It was observed by Michaux, that "the locust forms a much smaller portion of the American forests than the oaks and walnuts, and that it is nowhere found occupying tracts, even of a few acres exclusively." Hence the tree, where it is met with, is often spared by settlers, as being ornamental, and comparatively rare, and old specimens, which formerly belonged to the aboriginal forests, are frequently seen growing in the midst of cultivated fields.

Of all American trees that have been cultivated in Europe, there is no one, of which so much has been said and done, as the locust. It was among the first plants that were carried to that country, and it has been more extensively propagated than any other, both in Britain and in France, where it has been alternately extolled and neglected; and even at the present day, though the beauty of its foliage and flowers is universally admired, and the valuable properties of its wood have enthusiastically been praised and acknowledged, it is not considered as holding a high rank as a timber-tree, or as being generally planted with a view to profit.

In Dr. Hunter's edition of Evelyn's "Sylva," published in 1786, we have a history of the employment of the locust in ship-building, communicated by Mr. Joseph Harrison. This gentleman, who had resided some time in Virginia, states that in "about the year 1733, the first experiment was made respecting the application of the locust tree to any purpose in ship-building, by an ingenious shipwright, sent over to America by some Liverpool merchants, to build two ships there. The shipwright thought that the oaks, elms, ashes, and many other timber-trees common to both countries, were much inferior to the same sorts in England; but frequently spoke of the locust-tree as being of extraordinary qualities, both in strength and duration. He had observed some very old timber in houses in New England, that had been built of the wood of this tree, when the country was first settled, perfectly firm and sound; and, after having completed his engagement for his employers, he began to build a small vessel for himself; when, being at a loss for a sufficient quantity of iron, and having observed the extraordinary strength and firmness of the locust tree, he took it into his head that trenails, or tree-nails, that is, wooden pins, of that timber, might be substituted for iron bolts in many places where they would be least liable to wrench or twist, (as in fastening the floor timbers to the keel, and the knees to the ends of the beams, which two articles take up a large proportion of the iron used in a ship,) purposing, when he arrived in England, to bore out the locust trenails, and drive in iron bolts in their stead. The ship, being finished and loaded, sailed for Liverpool, and returned back to Virginia the next year; the builder himself being the captain of her, paid particular attention to see the effect of the locust trenails. After the strictest examination, he found that they effectually answered the purpose intended. It was, however, thought prudent to take several of them out, and to put in iron bolts in their room; and this operation afforded another proof of their extraordinary strength and firmness, as they required to be driven out with what is technically called, a set bolt, (an iron punch,) just as if they had been made of iron; whereas oak trenails are usually bored out with an auger." The use of the locust for trenails was neglected for some years, till it was revived at the instance of Mr. Harrison, by a ship-builder of eminence, at New York, where, as in other parts of the United States, as well as in Great Britain, it has been in general use ever since.

In the year 1823, an extraordinary excitement was produced in England concerning this tree, by William Cobbett, who resided in America from 1817 to 1819, and chiefly occupied himself in farming and gardening, on Long Island, near New York; and during that period, as he tells us in his "Woodlands," published in 1825 to 1828, that he was convinced that nothing in the timber way could be of so great a benefit as the general cultivation of this tree. "Thus thinking," continues he, "I brought home a parcel of the seeds with me in 1819, but I had no means of sowing it till 1823. I then began sowing it, but upon a very small scale. I sold the plants; and since that time I have

sold altogether more than a million of them!" Elsewhere, in the same work, he more especially directed attention to this subject, urging, in his clear and forcible manner, the immense importance of this tree in shipbuilding; and he was the means of thousands of it being planted in various parts of Britain. The name of *locust*, as applied to this tree, before Cobbett's time, was but little known in England, and many persons, in consequence, thought it was a new tree. Cobbett had a large kitchen-garden behind his house at Kensington, which he converted into a nursery; and he also grew trees extensively on his farm at Barnes, in Surry. Although hundreds of the Robinia pseudacacia stood unasked for in the British nurseries, the "locust plants," which every one believed could only be had genuine from Mr. Cobbett, could not be grown by him in sufficient quantities to supply the demand. He imported the seeds in tons; but when he fell short of the real American ones, he procured others, as well as young plants, from the London nurseries, and passed them off as his own raising or importation. Had the people of England known that locust seeds and locust plants were so easily to be obtained, it is probable that the locust mania would never have attained the height it did. To show the folly or the knavery of this extraordinary individual, we quote the following from Loudon's "Arboretum Britannicum," which should be preserved more as a literary curiosity rather than a historical record. "It is worthy of notice," says Loudon, "that Cobbett, apparently without ever having seen a hop-pole made of locust, boldly affirms that the tree is admirably adapted for that purpose; that trees from his nursery, after being four years planted on Lord Radnor's estate, at Coleshill, were 'fit for hop-poles, that will last in that capacity for twenty or thirty years at least;' that 'such poles are worth a shilling each' (that is, nearly double what was at that time the price of good ash hop-poles); that 'five acres would thus, in five years, produce £529;' and that 'each stump, left after the pole was cut down, would send up two or three poles for the next crop, which, being cut down in their turn, at the end of another five years, would, of course, produce two or three times the above sum!' that locust wood is 'absolutely indestructible by the powers of earth, air, and water;' and that 'no man in America will pretend to say that he ever saw a bit of it in a decayed state.' After this, it will not be wondered at, that Cobbett should call the locust 'the tree of trees,' and that he should eulogize it in the following passage, which is so characteristic of the man, and so well exemplifies the kind of quackery in which he dealt, that we quote it entire:—'The time will come,' he observes, 'and it will not be very distant, when the locust tree will be more common in England than the oak; when a man would be thought mad if he used anything but locust in the making of sills, posts, gates, joists, feet for rick-stands, stocks and axletrees for wheels, hop-poles, pales, or for anything where there is liability to rot. This time will not be distant, seeing that the locust grows so fast. The next race of children but one, that is to say, those who will be born sixty years hence, will think that the locust trees have always been the most numerous trees in England; and some curious writer of a century or two hence, will tell his readers that, wonderful as it may seem, 'the locust was introduced to a knowledge of it by William Cobbett.' 'What he will say of me besides, I do not know; but I know that he will say this of me. I enter upon this account, therefore, knowing that I am writing for centuries and centuries to come.' The absurdity of the above passage renders it almost unworthy of comment; but we may remark that, even supposing all that Cobbett says in it of the application of the locust were true, the uses which he has enumerated do not amount to a hundredth part of those to which timber is applied in this country. Hence, were his predictions to be verified, and were the locust to become more prevalent than the oak, we should find its wood a miserable substitute, in the construction of ships and houses, for that of our ordinary timber trees. Every experienced planter or timber owner, both in Europe and America, has felt this; and this is the true reason why the tree never has been, and never will be, extensively planted."

The largest tree of this species recorded in England, is at Syon, near London, which in 1836 had attained the height of eighty-one feet, with a trunk three feet four inches in diameter at one foot above the ground, and an ambitus, or spread of branches, of fifty-seven feet.

In Scotland, at Airthrey Castle, in Stirlingshire, there is a locust tree, which attained the height of sixty-two feet in forty-three years after planting, with a trunk of two feet in diameter, and an ambitus of thirty feet. It grows in light loam or gravel, and in a sheltered situation.

In Ireland, at Shelton Abbey, in Wicklow, there is a locust which attained the height of sixty-five feet in fifty years after planting, with a trunk twenty-five inches in diameter.

In America the locust has been planted for ornament in great abundance about farm-houses, and along fences and avenues, for

more than fifty years; and since the forests were in a measure destroyed by the axe or fire, by the European settlers along the seaboard and navigable waters inland, many persons in the middle and eastern States have cultivated this tree with a view to profit, and have not only supplied timber and trenails to the shipwrights of the cities or commercial towns, but have exported large quantities to England and elsewhere. These plantations seldom exceed an area of thirty acres, notwithstanding the agricultural societies of several States have offered premiums for their encouragement. Though the Robinia had never been known to be injured by any insect, towards the end of the last century, in Massachusetts, it was generally attacked by the larvæ of the Cossus robiniæ, which gradually extended their ravages to the southernmost points where this tree has been propagated. In consequence of this discouragement, the locust has been but little cultivated for the last twenty years in any part of the United States or in Canada, except for the purposes of ornament or shade. In a communication from Mr. Stephen H. Smith, of Smithfield, in Rhode Island, dated on the 22d of November, 1844, he states that in the winter of 1817, he cut from a lot a heavy growth of timber, principally chesnut. The soil on which it grew is a rich loam, or a slightly tenacious subsoil. In the following spring he set out, in the same ground, at equal distance, about one hundred good-sized yellow locust trees to the acre. They kept pace with the natural growth of the forest that sprang up about them. In 1837, twenty years after, all the wood was again cut off the same lot, producing twenty cords to the acre, the locusts measuring at the stump from nine to twelve inches in diameter, each tree making three posts, seven feet long. The sprouts and offsets now occupy one half the ground, to the exclusion of a portion of the native timber. The borers have not assailed these trees at any time. It may be reasonable to conclude that the thick underwood has protected them from this enemy; as those standing near, in open, cultivated ground, of like quality, have not escaped.

The soil in which the locust appears to grow best is a light and somewhat sandy loam, rich rather than poor; and to attain any considerable size, it requires much room, and an airy, but at the same time a sheltered situation, free from the fury of the winds. It has the quality of thriving for a time on poor, shallow soils, which no doubt is owing to its power of rapidly abstracting whatever nourishment such soils may contain, by its large, succulent roots, that run near the surface; but after a few years it becomes stunted and unhealthy, decays at the heart, and never attains a size sufficient for any useful purpose, except for fuel. The only trees that will prosper on such soils and ultimately become timber, are the resiniferous, needle-leaved kinds, as the pine, the fir, the cedar, and the larch. When cultivated for ornament, this tree generally looks best planted separately on a lawn, or in small groups in a shrubbery, or along the confines of avenues and plantations, where it is allowed to extend "its branches freely on every side, and to assume its own peculiar shape, feathering," as Gilpin says, "to the ground."—*Brown's Trees of America.*

From the American Agriculturist.

American Agriculture.

Value of Hen Manure.—The complaint of the fly on turnips and bugs on cucumbers and other similar vines, is one of yearly and sometimes of long occurrence. The mischief done by these little pests is very provoking, and frequently results in losses of labour and good crops, which are very discouraging to cultivators. I have lately been informed by an intelligent and skilful cultivator, that the following preparation affords an ample and complete remedy. Take hen manure one part, reduce it as well as you can to powder; then with an equal part of plaster of Paris, incorporate well together, and sprinkle the mixture over the vines or sow it over the drills of your turnips.

Hen manure is free from the seeds of foul weeds, and in consequence of the great abundance of ammonia it contains, it possesses a great effect in pushing plants forward. Hence for tomatoes, peppers and similar plants, in our northern climate, it possesses high value. It is well worth being saved with care by farmers and gardeners for every purpose of cultivation. Care should be used, however, in its application, for if given in too large quantities and placed in too close proximity to the roots of the plant, its effects are fatal. Its value for all purposes is greatly increased by being mixed with charcoal, or when this is not at hand, with plaster. Every man who keeps hens should have his hen-house so constructed as to save all the manure, and save it dry as may be, and he will find it no inconsiderable item in his matters of rural economy.

W. Bacon.

Let every farmer at this season of the year, look well to his kitchen garden. No labour is more advantageously expended than in providing for a good supply of vegetables.

Use of Oxen.

So deep is the conviction of the great saving which would be accomplished by individuals, adding immensely, in the aggregate, to our national wealth, by *a more extended use of oxen* in lieu of *horses* in the general labours of husbandry, that the occasion is here embraced to present the views by which that conviction has been established, and the editor feels persuaded that he might venture to introduce these views, on the score of their intrinsic importance, even though the subject to which they relate were not so naturally associated, as it seems to be, with a work on the *diseases of cattle.*

That "a farming district may be judged of by its *working oxen*, as safely as by its barns or its corn-fields," has been laid down as an axiom by a Committee of Farmers,—working men in the true sense of the word,—of Massachusetts, at an exhibition where no premium was offered for *horses*, expressly on the ground that "it was believed that the interest of the farmer is promoted by substituting the ox for the horse, *for most purposes*, as he is fed with less expense, is more patient of labour, and is more valuable when his service is ended." This declaration in favour of the ox for "*most purposes*," is at once explicit and broad, and might seem to settle the question; but there are considerations arising out of difference of soil and climate, which obviously demand a comparison of circumstances to see how far that system admits of general application, which is here proclaimed on the best authority to be expedient throughout New England: and this brings us at once to the most formidable objections to the use of oxen—their *alleged incapacity to withstand, when labouring, the heat of more southern latitudes*, and their *slowness of motion.*

As to New England, in addition to the evidence already quoted, we may give here the answer of the venerable Josiah Quincy, now President of the time-honoured Harvard University, to a letter once addressed to him by the writer of this: "Oxen," said he, "are used almost wholly for plough and team work in this quarter of the country. A *single* horse is usually kept by our farmers to go to mill and to church, and for the convenience of the family. This is so universal as to be almost without exception among mere farmers. They certainly answer all purposes except perhaps speed, and in this, on a *long journey*, they are considered as *quite equal to horses.* Our farmers are so satisfied with their utility and economy, that no argument would induce them to change."

Hence it is seen that no reasoning is necessary to recommend the ox to general use in all that portion of America, and this evidence has been adduced to prevail upon southern readers to *reflect* on the subject, by showing, what many of them do not know, that already, in *many* of our States where the folks are nice judges of economical and labour-saving machines, animate and inanimate, oxen are actually substituted, and horses altogether banished for all farming purposes, and that their speed on long journeys is quite equal to that of horses. On the point of *speed* we shall speak again and conclusively, when we shall have dismissed the one in hand, to wit:—*capacity to bear heat!*

It was for a long time believed that the ox was a native of Europe, and that in the Aurock, running wild in the forests of Poland, his original type was to be found; but Cuvier's researches in comparative anatomy have established the belief that the cow is a native of Southern Asia, and thence may be deduced an argument that there is nothing in the natural constitution of the ox which forbids his manifesting his entire capabilities in southern climates. If there were, how is it that in South America he reaches his highest developements of size and power? As one of the Commissioners to South America, Chancellor Bland, in a report which Mr. Adams pronounced to be one of the ablest papers ever presented to the government, thus describes the ox-carts employed, and the wonderful powers of endurance of this patient animal in crossing the pampas of Buenos Ayres. It speaks conclusively to both the objections—want of speed and power to bear heat.

"The Tecuman and Mendoza carts, at a little distance, looked like thatched cabins slowly moving over the plain—the whole machine is destitute of a nail or a bit of iron; its great coarse wheels are not less than eight feet in diameter; six oxen, in general noble strong animals, move it; the two front pair have a great length of cord by which they draw; and the load of the cart, which, on an average, is not less than four thousand weight, is pretty nearly balanced on the axle-tree; the body of the cart is either covered with raw hide or thatch, made of reeds or straw; and with a collection of brushwood, as fuel, tied on the top, and brought from the westward of the pampas, these carts are seen crossing the plains in caravans of from thirty to forty together. On the journey the oxen are unyoked occasionally through the day and night, and permitted to seek their food round about. Thus without any other provision than what is necessary for himself, the carrier pursues his way over a waste of

thirty days or six weeks passage. From Buenos Ayres to Mendoza, the distance is nine hundred miles, and the journey is performed in about thirty days."

In some parts of England they formerly had *ox races*, and it is said that some years ago an ox ran four miles, over the course at Lewis, for one hundred guineas, at the rate of fifteen miles the hour.

We are told that in India bullocks are used for the saddle and coach, and that there travelling oxen are curried, clothed and attended, with as much solicitude, and much greater kindness, than we bestow on our best horses. The Indian cattle are extremely docile, and quick of perception, patient and kind; like the horses, their chief travelling pace is the trot; and they are reported by those who have ridden them often, to perform journeys of sixty successive days at the rate of thirty to forty-five miles a day.

To come back to our own country on this point, it is worthy of being here added that in an address delivered before the Barnwell Agricultural Society of South Carolina in 1821, Dr. J. S. Bellinger remarked, that "in the lower districts of our State they appear fully to appreciate the value of their labour in heavy drafts. With those of us who have attempted the use of them, oxen appear fully calculated to answer the many purposes upon our farms to which we almost exclusively apply the more expensive, though nobler animal, the horse."

Time was when the horse was not considered "the nobler" of the two; else why the many cautions in Scripture in favour and in honour of the *ox*—thou shalt not muzzle the *ox*—thy *ox* shall not labour on the sabbath-day—thou shalt not covet thy neighbour's wife nor his maid—nor his *ox!*

The late James M. Garnett, of Virginia, honoured be his name by all friends of American agriculture, stated in one of his addresses—"A gentleman of my acquaintance had a mixed team of horses, mules and oxen—in each season his horses failed first, the mules next, although both were fed upon grain and hay; and the oxen, fed exclusively on hay and grass, *finished the crop.* But to come down to the present time and nearer home, in Maryland, at the hottest season of the year and the most busy one with the planter, the same teams of oxen are worked, during the whole day, hauling very heavy loads of green tobacco for weeks together, and do well without any food but the grass of common pasturage on being turned out at night—whereas horses, working steadily in the same way, on the national road in wagons, consume twenty-five pounds of hay, and grain at the rate of four bushels of oats per day for the five horses, or four-fifths of a bushel for each horse—or, what is considered equivalent, four bushels of corn in the *ear*—making of oats at the rate of two hundred and thirty-two bushels for each horse for a year!

As to *horse* power on the national road, the following is the answer from Major Thruston:

"Cumberland, Maryland, Nov. 17, 1843: The general result,—for they differ widely in their opinions,—obtained by conversation with the oldest *teamsters* on the national road, is this—A five-horse team with a load of sixty cwt.—the average—will make daily, throughout the year, *fifteen miles per day;* the weight of the empty wagon between one and a half and two tons. At this work horses will not last as long as at farm-work by one-third, certainly. They average one set of shoes monthly, each horse; cost of shoes, one dollar each per month; feed, four bushels of oats per day, or four-fifths of a bushel per day to each horse; the same of corn in the *ear;* hay, twenty-five pounds. On this subject they are uniform in their statements. This amount of food is enough, and not more than will be consumed."

In answer to the argument against oxen now under consideration, and the one which has had most influence in restricting the use of them, we now offer the views urged by the illustrious Madison, whose pen simplified and enlightened every subject it touched, as could not but happen with a mind so pure and so bright.

The objections generally made to the ox are—1st, that he is less tractable than the horse; 2nd, that he does not bear heat as well; 3rd, that he does not answer for the single plough used in our corn-fields; 4th, that he is slower in his movements; 5th, that he is less fit for carrying the produce of the farm to market.

The first objection is certainly founded in mistake. Of the two animals the ox is the most docile. In all countries where the ox is the ordinary draught animal, his docility is proverbial. His intractability, where it exists, has arisen from an occasional use of him only, with long and irregular intervals; during which, the habit of discipline being broken, a new one is to be formed.

The second objection has as little foundation. The constitution of the ox accommodates itself as readily as that of the horse to different climates. Not only in ancient Greece and Italy, but throughout Asia, as presented to us in ancient history, the ox and the plough are associated. At this day, in the warm parts of India and China, the ox, not the horse, is in the draught service.

In every part of India the ox always appears, even in the train of her armies. And in the hottest parts of the West Indies, the ox is employed in hauling the weighty produce to the seaports. The mistake here, as in the former case, has arisen from the effect of an occasional employment only, with no other than green food. The fermentation of this in the animal, heated by the weather, and fretted by the discipline, will readily account for his sinking under his exertions; when green food even, much less dry, with a sober habit of labour, would have no such tendency.

The third objection also is not a solid one. The ox can, by a proper harness, be used singly, as well as the horse, between the rows of Indian corn; and equally so used for other purposes. Experience may be safely appealed to on this point.

In the fourth place, it is alleged that he is slower in his movements. This is true, but in a less degree than is often taken for granted. Oxen that are well chosen for their form are not worked after the age of about eight years—the age at which they are best fitted for beef,—are not worked too many together, and are suitably matched, may be kept at nearly as quick a step as that of the horse, might I not say quicker than that of many of the horses we see at work, who, on account of their age, or the leanness occasioned by the costliness of the food they require, lose the advantage where they might have once had it?

The last objection has most weight. The ox is not as well adapted as the horse to the road service, especially for long trips. In common roads, which are often soft, and sometimes suddenly become so, the form of his foot and the shortness of his leg are disadvantages; and, on roads frozen or turnpiked, the roughness of the surface in the former case, and its hardness in both cases, are inconvenient to his cloven foot. But where the distance to market is not great, where the varying state of the roads and of the weather can be consulted, and where the road service is less in proportion to the farm service, the objection is almost deprived of its weight.

In cases where it most applies, its weight is diminished by the consideration that a much greater proportion of service on the farm may be done by oxen than is now commonly done; and that the expense of shoeing them is little different from that of keeping horses shod. It is observable that when oxen are worked on the farm over rough frozen ground, they suffer so much from the want of shoes, however well fed they may be, that it is a proper subject for calculation whether true economy does not require for them that accommodation, even on the farm, as well as for the horses.—*Skinner's Cattle Doctor.*

Inspections at Philadelphia.

A correspondent of the Bulletin gives the following as the total inspection of certain articles in the District of Philadelphia, during the year 1847.

Flour.

671,359	barrels	superfine flour,	
6,471	do.	do.	do.
20,408	do.	fine	do.
109	half barrels	fine	do.
11,320	barrels	condemned flour.	
64	half barrels	condemned flour.	
2,612	barrels	middlings flour.	
26,971	do.	rye	do.
937	do.	condemned flour	
292,347	do.	kiln dried corn meal.	
1,777	do.	condemned	do.
168	half barrels	corn meal.	
1,475	hogsheads	do.	

Estimated value of the above, $6,015,449 50

Butter and Lard.

29,052	pack.	ex. butter,	No. 1,	696,490 lbs.
130	do.	do.	do.	3,044
1,024	do.	ex. lard,	do.	62,819
30,206				762,353
		Valued at		$97,175 66

A Few Words for Children.

You were made to be kind, says Horace Mann, generous and magnanimous. If there is a boy in the school who has a club foot, don't let him know that you ever saw it. If there is a poor boy with ragged clothes, don't talk about rags when he is in hearing. If there is a lame boy assign him some part of the game which does not require running. If there is a hungry one give him part of your dinner. If there is a dull one help him to get his lesson. If there is a bright one be not envious of him; for if one boy is proud of his talents, and another is envious of them, there are two great wrongs and no more talents than before. If a larger or stronger boy has injured you, and is sorry for it, forgive him, and request the teacher not to punish him. All the school will show by their countenance how much better it is to have a great soul than a great fist.

Rearing Lambs for Market.

At our request, Mr. George Edwards, of Mechanicsville, Saratoga county, has furnished us the following account of his mode of managing sheep and rearing lambs for market:

"As my farm is near our large markets, and well adapted to what I call *mixed husbandry*—that is sheep, grain and grass—the soil a loam, high and dry—I find the rearing of fat lambs the most profitable branch of farming. The ewes have generally been bought in September—always selecting those of rather coarse wool, they be ng larger and generally the best nurses. The rams (pure South Downs) are put to them early in November, and the lambs are dropped about the first of April. The ewes are fed during the winter with cornstalks and straw, and about one month before lambing, and from thence till they go to pasture, they are each fed with three quarts of brewer's grains per day.

"Last year 100 ewes raised 100 lambs. The wool, which was sold at Troy at 32 cents per lb., brought $104 75. Twenty-five lambs sold at $2 each, one ram lamb $5, one do. $3, and the remaining seventy-three at $1 75 each. They were all taken away by the last of July. The ewes were sold to the butcher at $2 each in October—so that the hundred ewes realized $490 50.

"It is desirable to get rid of the lambs early, that the ewes may have time to fatten, so that they may be sold to the butcher in the fall—giving room for a new flock which should be brought in for the next season.

"It is a good mode, and one which we have frequently adopted, if we have a piece of rye which had been sown on a clover sod, (or where the land was otherwise in good order,) to plough the stubble the very moment the rye is off the field, and sow turnips. The furrows are first harrowed with a light harrow lengthwise and then crosswise—the seed sown broadcast, 2 lbs. per acre—ending with rolling the ground with a very light roller. The turnip called the stubble turnip is preferred. A larger quantity of seed is sown than some use, in order to get a good stand in spite of the ravages of the fly. I have now procured one of Emery's seed-planters and shall probably sow the turnips in drills henceforth—the rows two feet apart, to give space to work between them with a horse and small plough or cultivator. As soon as the turnips are up about two inches, we put on the light harrows, passing both ways, keeping a straight course. If the turnips are in drills, the drags are only run across the rows. About two days after the harrows are run over the turnips, they are gone over with hoes and thinned where they are in bunches.

"Ten acres of turnips, with a tolerable even plant, will supply and fatten 150 sheep, and will afford fine keep for them from the first of October to the end of November, (if there is not much snow,) at a time when pasture is generally short. About one acre should be fenced off to commence with, and after four or five days add about one-fourth of an acre every other day. At first the sheep will not appear to like the turnips, but after three or four days they will eat them rapidly. A boy should be placed with the sheep for two or three hours each day, to chop up the shells—the sheep will fall back and eat them up clean.

"While the sheep are on the turnips, it is an advantage to give them a little cut hay in troughs—say about three bushels per day for 150 sheep.

"Let any man try this plan, and if his land is in good heart, he will not only find his sheep get *really fat*, but they will leave the land in fine condition for a spring crop. It must be observed, the more attention that is paid to keeping down the weeds, the better will the crop pay cost."—*Cultivator.*

Summer Management of Sheep.

Let us imagine the time to have arrived when the duties of the flock-master relative to foddering his flocks are about to be suspended by turning them to pasture. This period, in the northern States, is from the 1st to the 20th of April. It is a critical time with sheep, owing to the rigor and vicissitudes of the climate, and their long confinement to dry food, especially so with the finer-wooled varieties, and therefore claiming more than ordinary care. But many of the duties involved require to be exercised a month or more antecedent to the time under consideration.

If sheep have been confined wholly within yards, and not permitted to taste the young grass until it is sufficiently advanced to satisfy their hunger without the aid of other food, there is great danger in turning them upon it too suddenly. This results from its flashy and stimulating properties, causing *scours* or *purging*, and unfortunately with that portion of the flock least able to endure the attack, namely, those in low flesh, and consequently feeble. In nearly all such cases death will often follow, unless a timely arrest of the disease is made by a return in part to dry food.

But it is better to attend to the prevention, which is, to allow the flock to graze an hour

or two each day for at least a week previous; and during this time let the best of hay, accompanied with grain, be provided. If sheep, however, have been trained to eat roots, and have partaken of them freely through the month of March, the danger accompanying the too sudden transition from hay or other dry food, will in a measure be avoided.

Notwithstanding the duty of the shepherd may have been faithfully discharged by taking out from time to time such as are failing in flesh during the winter season, and putting them to better keep, yet not a few in indifferent condition will be found in large flocks at this period, which had better be separated and treated accordingly. The two classes needing this attention perhaps the most, are generally ewes which have already or are about to yean, and yearlings. Whatever they are, let them be put upon the best pasture the farm will furnish, and a few only together.

The separation will be quickest performed by adopting the following method:—Let the flock be stationed one or two hundred yards distant from a gateway or bars, and then, if called by the shepherd, moving on a run, the weaker sheep will soon fall to the rear, and when these are about to pass the gateway, let them be cut off from the others by some one in the vicinity. This mode is sure, and is preferable to pounding the flock, as mistakes are unavoidably committed by so doing, especially with yearlings, owing to the unusual length of wool in individual cases, which frequently hides from the shepherd their impoverished condition.

An important duty devolves upon the flock-master to see that his sheep are regularly and plentifully salted from the time they are turned to pasture till the commencement of the foddering season.

Fortunately the question, whether salt contributes to the health and thrift of sheep, is, at the present day, no longer mooted, its salutary effects being universally admitted. It operates to stimulate the appetite, and essentially aids the digestive organs in extracting the nutriment of food; and within a few years it has been ascertained that its free use to sheep has mitigated, if not wholly prevented, in some localities, that terrible scourge to British flocks, the *liver-rot*. Its security against the attacks of other dangerous maladies, further time and observation will doubtless demonstrate.

In Mr. Youatt's work will be found the following remarks on the benefits of salting:—"Passing by the beautiful country of Montpelier and the mouths of the Rhone, the traveller can study the fine sheep and the sheep husbandry of Arles. The district of the Crau, in length nearly eighteen miles, and about half as much in breadth, extends from the mountains towards the sea-coast. It is one uniform gentle declivity: in no part of it is there the slightest portion of stagnant water, and not a tree or shrub is to be seen. The soil is dry and apparently barren enough, but produces a varied herbage well adapted to the sheep. Not less than one hundred and thirty thousand sheep graze on this declivity."

A writer in the Memoirs of the Royal Academy of Sciences at Paris attributes the thriving of the sheep on such a spot to the free use of salt, thereby enabling the digestive organs to extract every particle of nutriment which the food contains. He says, "On this spot, seemingly so sterile, by the free use of salt, more numerous flocks of sheep are bred and reared than upon any other common of equal extent throughout the whole kingdom; and, what is not less remarkable, the sheep are healthier, hardier, and endure the severity of the winter with less loss, though they have fewer sheep cots for covering, than those fed and bred on more copious pastures, and that have, besides, the advantage of more convenient shelter."

For a short time after sheep have been turned to pasture, precaution must be observed not to salt them too freely, as, in conjunction with the stimulating nature of young grass, scours or purging will follow; and its effects upon ewes shortly before parturition, if allowed access to it without limit, will tend to abortion, as will be found more fully noticed in another chapter.

If common fine salt (say Salina make) is used, two quarts to the hundred, given about once a week, is a prudent quantity at that time, and may be increased to four quarts after the first of May, for every fourth or fifth day, during the remainder of the pasture season. If coarse salt (St. Ubes) is used, a quarter to one-third less than of fine will be proper, it being of a much stronger quality.

Salting in troughs would be well enough, provided the sheep could be stationary in one enclosure; but the necessity of their removal frequently for change of pasture, requires the removal of the troughs also; and the flock-master with several hundred sheep will soon learn that that is quite too troublesome. Again, troughs are thought by many indispensable during the season when the *Estris Ovis*, or sheep gad-fly, is winging its tormenting career, for the reception of the tar (upon which salt is sprinkled) as a defence against its attacks. But this does not supersede their removal, and if time and their expense are considered, it will be found cheaper to pound the flocks several times during the

flight of the fly, and with a common paint brush or swab, tarring their noses can very quickly be performed, and far more effectually than it can be done by themselves in the troughs.

The writer salts his sheep upon the ground before the dew evaporates, selecting a place which is clean, and the grass short, and divides a handful into two or three parts, as a large quantity thrown upon one spot will not scatter sufficiently the quantity used for the flock, and thereby the sheep are afforded a more equal chance. Salt is a fertilizer of the soil, and should any be left uneaten, which is not very likely, of course its effects will not be lost.

Many suppose that sheep, late in the fall, require little or no salt. This is quite a mistake, it being the very period when it will prove most useful to them, by contributing to extract the little nutriment left in the decaying herbage, as well as causing its better relish.

Salt is quite as necessary in the foddering season, if not more so, than at any other time, for the reason that dry food being harder of digestion than green, the stimulating properties of salt is requisite to aid the process. It is not important that the hay, or whatever else may be fed, is salted, if the sheep have access to it in troughs or mangers. But if the hay is salted when it is secured, none else will be required. This is deemed by a large majority to be the better way, and coincides with the writer's views and practice.—*Morrell's American Shepherd.*

The Agriculture of Belgium.

No country in Europe of so limited a territory, presents a greater variety of aspect than Belgium. The natural landscape of the two Flanders and Antwerp is characterized by a gloominess and monotony which the variety of soil and production can scarcely compensate. Here and there are scattered plains, bounded only by the visible horizon, and intersected by sluggish streams and artificial communications, that serve to drain the country, and afford innumerable facilities for inland navigation. Flanders has a dense population, and her rural districts are delightfully diversified by woods and arable lands, and thickly studded with towns and villages. Towards the sea coast rise the gently undulating towns or *dunes*, composed of loose sand, often extending three miles in breadth, but of very moderate height. On the contrary, turn to the coast of Hainault, Brabant, and the Walloon provinces, and you will find charming and romantic situations. Here is a surface, broken by ravines or abrupt rocks, and there clothed with great masses of forest. Indeed, the whole of Belgium has a woody appearance. Trees are planted in the hedge enclosures of the fields, while the roads are lined with double rows of the majestic linden, and the canals shaded with poplars and willows.

The western part of Belgium was early known as the centre of European manufactures and commerce, and while the rest of the civilized world was merged in comparative barbarism, the mechanical arts were successfully cultivated in this region. At the period of the crusades her navigation was so generally developed, that when the kings of France and the emperors of Germany sent their mariners by land or in Venetian or in Genoese bottoms to Asia, the Flemish marine boldly coasted France and Spain, passed the Straits of Gibraltar, and disembarked her troops on the coast of the Levant.

There is Bruges, a few centuries ago the *entrepôt* of the whole commercial world; and during the palmy days of the Hanseatic League, she was a leading city, and grand compting house for that wonderful trading establishment. Her ancient and splendid edifices are monuments of her former opulence and grandeur; but this whole country, except the margin of streams, was either a *dry sand bank*, or an immense morass, on which grew the *heath* and *aquatic plants*. Even now, if left to nature, instead of increasing in fertility, it would return to its original *state*. And what proves beyond the shadow of doubt that it was formerly submerged, is the alternation of its layers of sand and clay, mingled with marine shells. Indeed, the Rhine has brought down from the Alpine regions and deposited its debris, in the shape of sands. The Meuse and Scheldt, in their advances to the ocean, have formed a fine argillaceous and calcareous soil, the remains of animal and vegetable substances, drawn from their basins or brought by the oceanic tides. The barren heath, by a happy combination of clay and vegetable and animal manure, has thus become a garden, and its rich, black, loamy mould indicates the fertilization of centuries. Those salt marshes, called in the language of the country, *schorres*, have been reclaimed from the inundation of tides by embankment and dykes, and are now proverbial for their fertility. In the vicinity of Ostend, the great Polden, for example, bearing the appellation of Snaerskinke, has been formed in this way, and exhibits a noble specimen of Flemish industry and perseverance. Travelling over Pays de Waes, a perfect garden, we should little suspect that the fine dark loamy soil

which on every side teems with the rankest vegetation, was formerly a dreary waste, on which a blade of grass scarcely grew.

The flourishing condition of agriculture in the low countries is unquestionably the mainspring of their prosperity in manufactures, which, in turn, by increasing the size of towns and the demand for the riches of the soil, give a stimulating activity to the interchange of the commodities. To what other cause can we attribute the extreme multiplication of the human species, but the development of these great sources of national prosperity?

Commerce and manufactures have multiplied objects of cultivation and increased the demand for them. The production of flax, hemp, oily and colouring plants, are thus made as profitable to the husbandman as the production of breadstuffs and animal food, and the field that grows the raw material of the white veil which throws such bewitching charms around Flemish beauty, raises the price of the cereal and culinary productions. The vascillating wants of trade may disturb for a season, however, the just equilibrium between production and consumption, but eventually all the fruits of agricultural industry become balanced. Thus the perfection of rural economy that arises from the necessity of providing for the subsistence and comfort of an increasing population, is the glory of the country. But a stranger, on crossing the Belgian frontier, would be greatly surprised to find her rural districts so strongly wedded to antiquated notions and modes of husbandry. Even the introduction of new plants, except the potatoe and some colouring vegetables, has been of rare occurrence. It is true that the genius of Napoleon called into cultivation the sugar beet, but it may be said the improvements in agricultural implements and seeds, for which other countries are so justly celebrated, have been slow to find their way into this region. What a striking contrast do the American and English farming utensils form, to the Hainault scythe and Flemish plow. The present King of Belgium has indeed introduced many modern improvements in the tillage of land and the breed of domestic animals, yet, strange to say, the characteristic tenacity with which the Belgians cling to old established notions have retarded the successful accomplishment of these governmental ameliorations.

But when we advert to the fact of the enormous increase of the value of land and buildings within the last ten years, the beneficent supervision of the government is every way worthy of praise and imitation. The great council employed to watch the agricultural interests, together with a veterinary and agricultural college, all stationed at the capital, have elevated the standard of education among the cultivators of the soil, and called into successful activity an immense amount of dormant wealth.

This college is liberally patronized by the State, and its chairs are filled by professors who are men of science and great experience; and under its auspices are delivered lectures on chemistry, botany, and agriculture. Societies have been formed in the various provinces for the promotion of rural industry; but what has contributed in an eminent degree to develope the capacities of the soil, is the abolition of the feudal tenures, game laws, and partial and onerous burdens on the industrial classes.

The law of equal succession, which has subdivided France into many small estates, owned by frugal and temperate, but poor proprietors, works admirably in Flanders. The prospect of a rural retreat gives a stimulus to the industry and economy of the peasant. For here the cultivators of the soil either hold it in fee, or are tenants on durable leases. What a contrast does it form to that miserable *métayer* system of tillage that blights the industry and enterprise of some of the finest territories on the continent. The operative classes are not content with the bare necessaries of life; their tidy wives and well clothed children show a vast superiority over the starving and haggard population of Ireland. Even a fondness for religious processions and superstitious pageantry that connects Roman Catholicism with filth and squalidness in Savoy and Italy, are not the accompaniments of the rural populace of the *low countries*.

On the contrary, what traveller is not delighted with a Flemish farmery, where order and neatness dwell? Even in the stalls in which the horse and ox are fed, you can be seated and regale yourself with a cup of coffee, or the smoke of the pipe, without offending the most sensitive nerves. Go and ascend the lofty belfry which surmounts the old Town-Hall at Bruges, and the panorama to the north will fill your eye with a beautiful succession of vividly verdant fields, varied by masses of wood, streams and picturesque villages. But this very soil, if cultivated like many parts of the world, would require a heavy importation of human food to supply the demand for the consumption of the people. But Belgium exports an immense quantity of her agricultural productions. Let us examine this matter for a moment, and see whether the true cause of this unsurpassed affluence of husbandry, may not be traced to the economy and industry of man. The

pervading principle of her tillage is to make a farm like a *garden*. Even the pasturages are so subdued and fertilized that they yield four-fold more than the same land in less cultivated countries. It is conceded that ten acres of the best vegetables would maintain a larger stock of grazing cattle, than forty acres of common farm or coarse grass. The lease of land on long terms, based on improvement, the payment of rent in money, or kind combined with money, the restraint not to sub-let, and the powerful motive to obtain profitable crops, joined with habits of sobriety, forethought, and a well balanced economy, have elevated the Belgian peasantry far above the like operatives on the continent.

Flemish farms vary very much in size in the northern parts of the country, but rarely exceed fifty acres. You often meet with farms of twenty acres, on which you will find a pair of fine horses, four to six milch cows, a farmery that contains a good and substantial dwelling house, out houses and stables, kept with wonderful neatness and economy. Within the area, and below the rural buildings, is placed the urine tank, that receives the liquid discharges from the domestic animals, and hard by is the compost bed, on which is deposited whatever can form *manure*.

Here permit me to say, that on a farm which I had the pleasure to examine, that contained but 45 acres, there were fed two horses, fifteen milch cows, and several heifers to supply stock, besides five cows and some calves fattened off yearly; some few miserable sheep and long-legged and slab-sided hogs, and the master and family, with six male and female domesties. The produce of the stock of live animals was not the moiety of the real income of the farm. The surface was teeming with artificial grasses, wheat, rye, rape, and flax, all richly remunerating the indomitable perseverance and unwearied industry of the cultivator. The cattle and horses were continually stalled; fed in summer on green clover, and in winter with esculent roots relieved by meal made from small grain. But what was an inexhaustible source of fertility to this productive spot, took its rise from the careful preservation of all vegetable and animal matter, together with the excrementitious *substances* of every thing living within his shed. And what in other countries is wasted, is here an article of commerce—I allude to *urine*, which in a single *cow* is worth ten dollars a year.

No wonder then, that the net returns to the cultivators of the soil will average more than a quarter of the value of the grass produce. The deduction consists in the charges of production, such as the price of seed, manure, labor, interest on capital, repairs to buildings and farming utensils, or a rent to the proprietor, the public burden of taxation, and the annual loss by the decay of strength and mortality of the domestic animals—nor is the cost of the food of men and beasts to be neglected—in this account.—*New York Agricultural Transactions.*

From Downing's Horticulturist.

The Vineyards of the Ohio.

In writing upon the *Vine*, it is impossible to forget the many associations of antiquity which are inseparably connected with it. In sacred history, these are especially interesting. In all time, has the vine, and the enjoyment of its fruit, been regarded as a blessing especially adapted to the health, comfort and luxury of man. "And Judah and Israel dwelt safely, every man under his own vine and under his own fig tree."

The vine seems to have been given to mon in a more perfect state than most other fruits; for though many of the fine varieties are the result of patient cultivation, the finest wild grapes of either Syria or America are truly delicious, when compared with wild crabs or wild peaches. Its culture and enjoyment, in the earliest ages of the world, were considered synonymous with the prosperity and happiness of man: "and they shall build houses and inhabit them, and they shall plant *vineyards* and eat the fruit of them."

Though the world has grown old, the paternal love of vineyards has not in the least diminished in the heart of man. We are just as busy, at least in this part of the new world, with planting vineyards as were Noah and his immediate descendants; and I may, therefore, I trust, be pardoned for giving some detail of the early history of this branch of agriculture in the valley of the Ohio.

If we take a retrospective glance of fifty or sixty years—a period the scenes of which are perfectly within the recollection of some yet on the active stage of life—when the unexplored wilds of the Ohio—the now *indeed* beautiful Ohio—were penetrated by a few hardy adventurers, seeking to better their condition, with but little to cheer them in their dreary course, but encountering, at every step, the shrieks of wild beasts, and their but little less ferocious companion, the Red Man, we shall have some data from which to start. The great abundance of the wild grape, found indigenous in the forest, and the luxuriancy of their growth,

towering and spreading over the tops of the tallest trees, abundantly loaded with fruit, justifies the idea, that the better and finer sorts would flourish here also. How or from whence these were to be obtained, or what sorts would prove adapted to the soil and climate, would remain a matter of slow inquiry and experiment. This must, of necessity, mainly depend on emigrants, in after time, from vine-growing districts, without a knowledge of the soil and climate, bringing with them old and valued sorts, and applying their old and accustomed modes of cultivation. These emigrants brought with them a strong natural prejudice against native sorts, and a different mode of treatment. Before success could attend them, old prejudices and predilections must be abandoned, and a new practice, and native sorts sought to occupy the place of old friends unsuited to their new locations. These were hard struggles, which required time to bring to a successful issue.

Early attention was drawn to the subject, and efforts were attended with more or less success. None of these were, however, of much importance, until about the year 1796 or 7, when John James Dufour, a zealous Swiss, came to Lexington, Ky. Having previously looked up all the vine cultivators east and west, the smallest of them not escaping his notice. He succeeded in forming a joint stock company, for the purpose of extensive operations. The first difficulty presenting itself, was a want of plants. These were at much cost, collected partly about Philadelphia, New York and Baltimore, with some he had brought from Switzerland, to the amount in all, of thirty-five sorts, *all foreign varieties.* Most of these were brought to fruiting, and some specimens of wine were produced. "This was drank by the stockholders," I presume with much satisfaction. Unfortunately, however, these vines soon after perished with the mildew and other diseases to which the European sorts were found subject, except a few stocks of two sorts, the Madeira and Cape. This was so discouraging, that after a few years efforts to increase the stock of these, the former, in the mean time, sharing the fate of the rest, the project was abandoned, and the little band dispersed. Afterwards joining themselves to a small colony of their countrymen, who had commenced a settlement on the banks of the Ohio, in the then territory of Indiana, some fifty miles below Cincinnati, where they had commenced the cultivation of the vine in 1802 This location was afterwards named Switzerland, and the town Vevay, in honour of their fatherland. Here, uniting their force, and adding their dear-bought experience, they commenced vigorous and successful operations with the Cape grape, [Alexander's or Schuylkill Muscadell.] As there is some doubt and dispute about the origin of this grape, I will here add Dufour's account of it. He says he procured it of one Legoux, residing at Spring Mill, near Philadelphia, who informed him that he imported it from the Cape of Good Hope. There, he supposes, it must have been carried by the Dutch settlers, and thinks it hence a European grape.* Be this, however, as it may, importance must always attach itself to it as the foundation of a successful effort to cultivate the grape in the valley of the Ohio, for the *manufacture* of *wine.* Time will show whether for good or evil, to the morals of our people.

Here these indefatigable strangers persevered in their efforts, and produced, for many years, a dark red wine, too harsh and astringent, however, to receive general favour, which confined its use mostly to the German and French population. Its harshness was probably owing to the age at which most of the cultivators found themselves obliged to sell their product. Bottled samples of it have been kept until it had attained an age of some years, which were pronounced, by good judges, to resemble and equal fine Burgundy, showing what it is capable of making, with care and age. The average yield, per acre, in their early operations, was 180 gallons, and the market price $2. This price, however, was greatly reduced by importation of French wines, so that they have been driven out of the market, and their operations abandoned. The fruit of their vineyards not possessing the rich and pleasant flavor to recommend it to public favour for the table.

Experience conclusively showed that it is the native sorts on which reliance must be placed; as the foreign sorts, with no exceptions, (unless the Cape be such,) have proved a failure, and disappointed all expectations. Although the culture of the vine was yet in its infancy, sufficient had been done to prove beyond dispute, that the soil and climate of this valley are well adapted to the grape; and all that was necessary to complete success, was some suitable native sort. This had not been lost sight of, while the suspension at Vevay tended to develop and to make room for a more varied and diffused system of cultivation, with different and better sorts. Of these, the Catawba has taken and maintained the lead. So successful and profitable has its culture proved, that I shall not be above the truth to set down the number

* It is unquestionably an American grape.

of *acres* now covered with it in this vicinity, at *four hundred.* Of course it will be understood that only a part of these have come into fruiting. With all this quantity under cultivation, such is the desire for wine making and its profits, that few markets where there is any pretension to cultivate the vine, are more deficient in the supply of the fruit than ours, at the high price of three to five dollars per bushel. The reasons assigned for this, are, that the bushel of good fruit will yield, on an average, four gallons of wine, and this readily commands from one to one dollar fifty cents per gallon from the press. It should be borne in mind, that the extension of the Ohio vineyards, thus far, has been limited only by the supply of plants. From this,—as the plants are now multiplied with great facility and at low prices,—should their product continue to meet a demand, its future extension may be inferred. However, I promised to confine my remarks to its infantile struggles into existence. My purpose in this article is answered, in having shown that every man may indeed set under his own vine, (if not his fig tree,) in our highly favoured valley, and enjoy the luxury not only of its shade, but the greater one of an abundance of fine rich fruit, with none to molest or make him afraid.

Very respectfully,

A. H. ERNST.

Spring Garden, Cincinnati, Feb. 1st, 1848.

Pork packing in New York.

AT the pork packing establishment of Messrs. George Leland & Co., 536 and 538 Washington Street, in this city, we observed a day or two since a sample of unusually large and superior dressed hogs, ready for barrelling—all the product of Dutches county, in this State, as follows:

Raised by,	Hogs,	Weight	Averaging.
Egbert Smith	11	3,835 lbs.	249 lbs.
B. Culver,	23	8,645	376
George Barlow,	9	3,235	359
David Hicks,	6	2,290	381
A. Hoffman,	22	10,759	490
A. Schryver,	10	4,370	437
Samuel Towner,	6	2,375	379
A. A. Schryver,	11	4,130	376
Philo Stukle,	3	1,170	390
D. Gifford,	9	3,426	381
	110	44,135 lbs.	401 lbs.

Of these, 110 hogs, the smallest weighed upward of 300 lbs. and the largest 760, the whole weighing 44,135 lbs., averaging 401 lbs. each; a pig seven months and 22 days old weighed 410 lbs. This, we understand, considerably exceeds the average weight of Ohio hogs. We learn from Mr. Leland that about 100,000 dressed hogs are received here annually, four-fifths of which are sold fresh for city consumption, this branch of trade having materially increased of late, while the packing, which ten or twelve years since reached 20 to 30,000 bbls. annually, has steadily decreased to about 1000 bbls. annually. Large quantities are now cured in dry salt and packed in bales for the English market. When the Erie and Albany railroads shall have been finished, it is believed that dressed hogs will be received here from the West, and that in this city—which furnishes so many facilities for the business—a great part of the pork packing of the country will be carried on.

Remarks.—some of our readers who have been taught to regard a pig of 200 pounds as a respectable porker, will hardly credit the statement, that one only seven months and 22 days old, ever weighed, when well dressed, 410 pounds. But be beg to assure our Southern friends that Dutchess county dairymen, while learning to make butter, which sells at thirty dollars per 100 pounds in this city, to butter the bread of exclusive planters, have found out a way to transform buttermilk, clover, corn meal, peas and barley into pork, in a speedier and more profitable way than most farmers are aware of. Suppose we were to ask every planter in Georgia how many pounds of sound corn nature requires to make one pound of good bacon, what number, think you, could answer correctly? If 200 days' keeping on sound principles will suffice to make a pig weigh 410 pounds, why keep him so badly till he is a year and a half old, that he will weigh only 200 pounds? The quantity of food consumed in the 300 extra days of his life and positively wasted, so far as making flesh is concerned, is prodigious. If it is your object to keep the animal, that he may grow to a fair size, why not make him do up his growing and fattening also, on the least quantity of food, and in the shortest time?

The *art* of transforming grass, peas, roots and corn into cheap pork, beef and mutton, needs to be carefully studied. If we mistake not the business of manufacturing the edible flesh of domestic animals can be rendered profitable at the South. The whole process must be conducted with perfect system. Corn should be ground into meal, and that boiled into pudding and mixed with cooked peas, potatoes, or some cheaper food.—*Southern Cultivator.*

Guano.

From Travels in Peru, by Dr. John J. Von Tschudi.

Opposite to Pisco and Chinca there is a group of small islands, of which the largest, Sangallan, is six English miles distant from Pisco. These islands have of late years become celebrated on account of the great quantity of Guano that has been exported from them.

Guano—(or according to the more correct orthography, Huanu, which is a term in the Quichua dialect, meaning "animal dung;" is found on these islands in enormous layers of from 35 to 40 feet thick. The upper strata are of a greyish-brown color, which lower down becomes darker. In the lower strata, the color is a rusty red, as if tinged with oxide of iron. The Guano becomes progressively more and more solid from the surface downwards, a circumstance naturally accounted for by the gradual deposite of the strata, and the evaporation of the fluid particles. Guano is found on all the islands, and on most of the uninhabited promontaries of the west coast of South America, especially in those parts within the tropics. I have often been assured that beds of guano, several feet high, covered with earth, are found in land at some distance from the sea; but I never met with any, and I have some doubt of the correctness of the statement. If, however, these inland strata exist, I am inclined to believe that they can only be found on hilly ground: and in that case, they afford strong evidence of a considerable elevation of the coast.

Guano is formed of the excrements of different kinds of marine birds, as mews, divers, shearbeaks, &c.

The immense flocks of these birds, as they fly along the coast, appear like clouds. When their vast numbers, their extraordinary voracity, and the facility with which they procure their food, are considered, one cannot be surprised at the magnitude of the beds of guano, which has resulted from uninterrupted accumulations during thousands of years. I kept for some days a living *Sula variegata*, which I fed abundantly with fish. The average weight of the excrement daily was from three and a half to five ounces. I have no doubt that when the bird is in a state of freedom, the weight must be much greater, for these birds are constantly ploughing into the sea, in order to devour the fishes which they find in extraordinary numbers around all the islands. When an island is inhabited by millions of sea birds, though two-thirds of the guano should be lost while flying, still a very considerable stratum would be accumulated in the course of a year.

The marine birds nestle on the uninhabited islands, or on rocks near the shore; but they never settle on the flat beach, or on any place distant from it inland. On this fact I ground my conjecture that those beds of guano in the interior, which may have been removed from the shore by important elevations of the coast, are to be found only on hills.

During the first year of the deposite, the strata are white, and the guano is then called *Guano Blanco*. In the opinion of the Peruvian cultivators, this is the most efficacious kind. It is found in the *Punta de Hormillos*, or the islands of Islay, Margarita, &c.

As soon as the dealers in guano begin to work one of the beds, the island on which it is formed is abandoned by the birds. It has also been remarked, that since the increase of the trade and navigation, they have withdrawn from the islands in the neighbourhood of the ports.

Much has been recently written on the employment and utility of guano; but the manner in which it is applied as manure in Peru, seems to be but little known. The Peruvians use it chiefly in the cultivation of maize and potatoes. A few weeks after the seeds begin to shoot, a little hollow is dug around each root and is filled up with guano, which is afterwards covered with a layer of earth. After the lapse of twelve or fifteen hours, the whole field is laid under water, and it is left in that state for some hours. Of the *Guano Blanco* a less quantity suffices, and the field must be more speedily and abundantly watered, otherwise, the roots will be destroyed. The effect of this manure is incredibly rapid. In a few days the growth of a plant is doubled. If the manure be repeated a second time, but in smaller quantity, a rich harvest is certain—at least, the produce will be three-fold that which has been obtained from the unmanured soil.

The haciendas of the Valley of Chancay have, during the last fifty years, consumed annually from 33,000 to 36,000 bushels of guano brought from the islands of Chancha and Pisco. The price of the bushel of coloured guano is one dollar and a quarter, and the price of the white from two to three dollars. The price has recently undergone many fluctuations, in consequence of the great exports to Europe.

The employment of this kind of manure is very ancient in Peru; and there is authentic evidence of its having been used in the time of the Incas. The white guano was then chiefly found on the islands opposite to

Chincha: so that for upwards of 600 years the deposite has been progressively removed from those islands without any apparent decrease of the accumulation. The uniformity of climate, on a coast where there is not much rain, would contribute to render the Peruvian guano a more active manure than the African, as fewer of the saline particles of the former being in solution, they are consequently less subject to evaporation.—*American Farmer.*

History of the Cotton Manufacture.

THE importance of the cotton trade to Great Britain, although generally admitted, is but seldom appreciated to the full extent of its value, even by those to whom its progress has supplied abundant labor, or those to whose wealth and affluence it has so materially contributed; I shall, therefore, endeavor to bring this subject before the commercial world as concisely as possible in the subjoined pages, in the hope that in presenting the details, and venturing upon a short outline of its general features, and a brief sketch of its progress in England, I may contribute to the information and pleasure of many in the commercial world.

To trace the manufacture of cotton from its very first stage, is a task which has never yet been fully accomplished, nor is it necessary for the objects sought to be achieved by these papers, to do so; suffice it, therefore, to give a few of the leading facts relative to its progression in other countries, and its introduction into Great Britain.

Most authors agree that cotton goods were successfully made in the East long before the Christian era, but to what extent it advanced amongst Eastern nations at that period, it is now impossible to discover; we learn, however, that the art of manufacture had found its way into Africa and China, a considerable time before mention is made of it in Europe. The earliest records of its introduction into Europe inform us, that it first made its appearance in Spain and Italy; but its progress in those countries was exceedingly limited, and it never appears to have attracted the serious attention of men of genius and perseverance, without whose aid and enterprise it would have failed even in England. As far back as 1298, raw cotton is recorded to have been imported into Great Britain, but it appears to have been exclusively used at that period for candle or lamp wick; and whether it was known as an article suited to the manufacture of clothing, is very uncertain. In the year 1560, there appears to have been a small importation of cotton from the Levant into England, but the quantity was very trifling, and it is not stated to what purpose it was applied; but there can be little doubt that it was spun into yarn, by hand or distaff. It was, however, on a very limited scale; as, in the year 1641, the principal part of the yarn in use here, was itself imported from the Levant, being used as weft only, and manufactured into what would now be called "Unions," the warp being of linen. This description of goods appears to have been made without intermission from that period until the year 1772, when Messrs. Arkwright and Strutts accomplished the art of making goods with a cotton warp.

It will also be seen that little progress was made in the manufacturing of cotton in England, until the year 1782, when the imports for the whole of that year were 33,225 bales; spinning machinery being at this period in its infancy. When we contemplate the present extent of the manufacture of cotton, the rapid stride it has made seems almost incredible. Not more than seventy years have elapsed since England's first profitable acquaintance with the cotton manufacture. In the year 1781, the quantity of cotton wool imported, was only 14,603 bales; but in 1845, it amounted to the enormous number of 1,855,660 bales, being 127 times as much as in the former year. In fact, our weekly consumption in 1846, was more than double the whole import of the year 1781. How deeply must the importance and magnitude of British enterprise and industry, and the power of man over the means of production, be impressed upon our minds, when we consider, that although so many centuries have passed since cotton was known in the East, and that within so short a period, (less than 100 years,) we were indebted to that distant country for both our goods and yarn. Yet have the exports in yarn and calicoes to India alone, during the last year, amounted to the enormous quantities of 20,500,000 lbs. of yarn, and to upwards of 196,000,000 yards of calicoes, and that it has been reserved to these times, to send out persons of firstrate ability, and at considerable expense, to induce the natives, (or, as may be said, the parents of the trade,) to increase and improve their cultivation; in order to aid in supplying that want of raw material, which the more modern gigantic efforts, and almost incredible progress of the United States of North America, do not satisfy.

It is an undeniable fact, that the cotton trade is much larger in amount than all the other descriptions of clothing. Notwithstanding its enormous extent, however, it has been, and will continue to be, more materially and suddenly affected by current

fluctuations than any other of our domestic fabrics. Some idea of the vast importance of this portion of British Commerce, may be formed from the following statement:

The value of the whole export of British and Irish produce and manufactures, for the last three years, has been as follows:

1844.	1845.	1846.
£50,648,306.	£53,298,026.	£51,279,735.

Of which cotton manufacture and cotton yarn formed—

1844.	1845.	1846.
£25,805,338.	£26,119,331.	£25,600,693.

So that one-half of the value of all our exports consists of cotton manufactures, and not more than one-third or one-fourth of this large amount arises from the cost of the raw material, which England pays to foreigners; so that the remainder is annually enriching the country, through the skill and labor of her manufacturers and factory operatives.

In reference to the embellishment of cotton goods, the principal features are printing and dyeing, the art of which had also been long known in the East, previous to its introduction into England, in 1675. In the year 1690, it was commenced on the banks of the Thames, near London, but the goods there printed were confined to muslins and calicoes imported from India. In 1700, an act was passed, (as an encouragement to the trade of Great Britain,) forbidding the sale or use of foreign printed goods, and this branch of her trade has also been further protected by several subsequent acts, as in 1782, prohibiting the exportation of any materials used in printing, &c.; and in 1783, giving bounties on the export of British printed goods; and several other acts were enacted on the same principle, until 1787, when an excise duty of 3½d. per square yard was imposed upon all printed cottons, but the same was allowed as a drawback when exported; this act was wholly repealed in the year 1831. Export of printed goods bear a very disproportionate amount to that of plain calicoes, as in 1846, the amount of the former was only 267,000,000 yards, while that of the latter was 619,000,000 yards.—*Hunt's Magazine.*

Mint of the United States.

ANNUAL REPORT FOR 1847

Of the Directors of the Mint at Philadelphia, showing the operation of the Mint and Branch Mints for the year 1847.

The letter of the Director of the Mint shows that during the past year the coinage was:

At Philadelphia—In Gold	$13,269,080
In Silver	990,450
In Copper	61,837
	$14,348,367
The number of pieces coined, 11,545,278.	
The deposits amounted to,	
In Gold	$13,670,896
In Silver	962,781
	$14,633,677
At New Orleans—In Gold	$6,085,000
In Silver	1,384,000
	$7,469,000
The number of pieces coined, 3,659,500.	
The deposits amounted to,	
In Gold	$6,252,228
In Silver	1,487,278
	$7,739,506
At Charlotte, N. C. it amounted to	$473,820
No. pieces—In ½ eagles, 84,151	
In ¼ eagles, 23,266	
The deposits (in gold) amounted to	$344,054
At Dahlonega, Geo. it amounted to	361,485
No. pieces—In ½ eagles, 64,405	
In ¼ eagles, 15,784	
The deposits (in gold) amounted to	$352,366
At the several Mints—In Gold	20,221,305
In Silver	2,374,450
In Copper	61,827
	$22,657,662
The deposits amounted to,	
In Gold	20,619,544
In Silver	2,450,059
	$23,069,603

THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

PHILADELPHIA, FOURTH MONTH, 1848.

The Editor of the Farmer's Cabinet will relinquish its publication at the close of the current volume in the seventh month next. He will dispose of the concern upon terms that may be advantageous to any one who may incline to continue it.

The New York State Agricultural Society, will hold its Exhibition in the coming autumn at Buffalo. The amount of the premium list is upwards of $6 000 Extensive preparations will be made by the citizens of Buffalo, to accommodate the vast crowds which attend these annual Exhibitions.

THE quantity of rain which fell in the 3rd month 1848, was ..... 2.75 in.

Penn. Hospital, 4th mo. 1st.

CONTENTS OF THIS NUMBER.

THE FARMERS' CABINET,

IS PUBLISHED MONTHLY BY

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By the decision of the Post Master General, the "Cabinet," is subject only to newspaper postage.

Joseph Rakestraw, Printer.

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AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—LIEBIG.

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Effects of Railways upon Agriculture.

THE following are extracts from the evidence of James Smith, Esq., of Deanston, given before the Select Committee of the House of Commons on Railway Acts Enactments—the minutes of the testimony adduced before which committee have just been issued, pursuant to an order of that House, dated the 25th of August last. The extracts in question relate to the effects of the facilities afforded by railway conveyance to agricultural improvement:—

Have you had occasion to consider the facilities afforded by railway conveyance to agricultural improvements?—Yes, I have.

Will you state generally what you consider has been the result?—I have observed upon those lines that have been in existence for some years, over which I have had occasion to travel, that a very great agricultural improvement of the lands in the neighbourhood has been the result, arising mainly from the cheapness and facility of transport; and I have drawn out some tables to illustrate that. I have one table taking a farm of 200 acres and a six-course shift; the committee are aware that there are different shifts of rotation, and that some lands suit best to be cultivated upon one, and some upon the other. I have taken this farm upon the six-course shift, which is most suitable for the bulk of the medium land of England and Scotland; I have supposed that farm to be in most full cultivation, thoroughly improved, and to be both arable and pasture. I have taken the quantities of green and dairy produce, and cattle, and everything which I can conceive will be exported from that farm, and it amounts to 148 tons. I have then taken the imports, consisting of store cattle to be fed, lime and other matters, such as guano, and the different chemical manures which are now being introduced; and also seed, because the shifting of seed in a good farm is always attended to: and I have supposed that this weight shall be transported upon an average fifteen miles, which I think is a very low estimate. The quantity imported will be 197 tons; making altogether, of imports and exports, 346 tons 14 cwt.

That is all for fifteen miles?—Yes. Then I have taken the expense of transport by railway at 1*d.* per ton per mile; on some railways it is considerably higher, and on some lower, but in the present advanced state of railways we may fairly assume that to be the general rate.

For the produce transported, and the manure brought to the land?—Yes; taking it

upon the average that I have taken, and also taking the number of persons that will travel to market, and in various ways, at 1*d.* per mile, the whole amount of charge of carriage for imports and exports is £40 8*s.* 9*d.* By the old mode of conveyance the expense would have been, assuming 6*d.* per ton per mile for the goods, which I find to be as low as you can carry it by the old mode, £142 16*s.* 3*d.*

That is for the same distance?—Yes.

On what principle do you assume 6*d.* to have been the charge by the ordinary roads? I speak from my own experience of thirty years. I have had a great deal to do with carting, both for agricultural produce and manufacturing produce, and I have found that I could never get it done under 6*d.* a ton in England; it costs rather more than that.

In giving an account of the produce of a farm, you deduct for home consumption?—Yes, I do.

Therefore, upon a farm such as you have stated, there would be a saving of £102 7*s.* *d*6.?—Yes. Then taking that at twenty years' purchase, it will give £2,047 10*s.*; if you take it at thirty years' purchase, it will amount to £3,071 5*s.*

Have you given the supposed rental of that farm?—No, I have not; the rental would be about £400.

This expense, then, would be in addition to the rent?—Yes.

And the same farm which without a railway would be only worth £400, would be worth £500 after a railway was established?—Yes; 10*s.* an acre more.

You have stated the advantages which a particular farm would have in being able to send its produce to market by railway, and bringing back manures; will you state what is the advantage in respect to stock in particular?—The advantage in respect to stock is very great indeed, both in bringing lean stock from the district in which it is reared to the richer district in which it is fed, and also for the transmission of the cattle, when fed, to the market for the consumer.

Are you able to show to what extent that works?—I have some statement here upon that subject: the rate hitherto charged by railways for the conveyance of stock is pretty nearly the same per mile as the expense of driving, and where the great saving occurs is in the condition of the animals, especially in fat stock; the loss from driving them being equal, in the case of fat bullocks on a drive of from 60 to 70 miles, to the whole expense of the transport; it is at least five per cent. upon the value of the bullock.

The advantage as regards the conveyance of the produce is an advantage of so much per ton?—Yes.

Was not the use of manures imported from abroad limited to certain distances from the ports?—Certainly; either from the ports or from canal communication.

The introduction of railways enables them to be sent to much greater distances at the same cost?—Decidedly.

In that way districts which were not able to profit by those manures are now able to do so?—They are.

In consequence of the introduction of railways, have not there been manufactories established in different parts of the country for the manufacture of sulphuric acid for the use of agriculture?—Yes; there has been a very extensive introduction of artificial chemical manures in consequence of the facility of transport, and I have no doubt that it will very greatly increase.

What manures do you principally allude to?—I allude to Liebig's chemical manures. I have not myself, in my experience, found any great efficacy in those manures, but there are other manures which have been found very efficacious; there are the urates, prepared from urine; there is bone-dust; there are rape-cake and nitrate of soda; and there are mixed manures, consisting of several ingredients chemically combined.

Is not the use of sulphuric acid for agricultural purposes considerably increasing?—I think it is: it is very much used for dissolving bones.

May not railroads be used to carry manures from towns to a much greater extent than was formerly the case?—Certainly.

And in that way the waste that now takes place will hereafter, it may be hoped, be prevented?—To a considerable extent.

Have you considered to what extent railways may be made useful for the purpose of mixing soils?—Yes, I have.

Will you state your opinion upon that subject?—The transport of earths for mixing soils, if the railroads could carry them to the immediate ground where they were to be applied, would be of very great advantage; but the difficulty of availing yourself of the benefit of railways for the transport of the soils is, that the soil must be refilled, in most cases, and carted to a considerable distance.

Railways would be useful only in cases where those earths could be easily obtained?—Exactly.

Take the transport of sea-sand?—Sea-sand in Ireland is carried thirty miles up the country in little carts, and is found to pay the farmer for the carriage when applied to clayey and mossy soils.

And therefore if the charge made for the conveyance of earths was very low, should you think that in that particular case the calcareous sand from the sea-shore might be carried profitably for considerable distances into the interior?—I think so; and in many instances where there are moors and waste land, it would be well worth the while of the proprietor, having a railway passing through that district, to construct a tram railway from the railway on to the moor or waste land.

Is not nitre also, and lime, in certain districts, used, which might be transported with advantage to great distances?—Yes.

You are aware of the improvements that have taken place in agriculture, by the introduction of those foreign chemical manures?—Yes.

Is not the utility of them as stimulants limited to a short period?—Bone-dust, which is brought very extensively from the continent of Europe to this country, is a very permanent manure. Guano is less permanent, but it has this advantage, that it enables the farmer to grow an extended breadth of green crop, for the feeding of cattle and sheep; and if the green crop is grazed, he is enabled to increase the produce of his farm.

But that requires to be renewed at short periods?—It requires to be renewed at shorter periods than bone-dust, but it has established extra stock manure upon the farm.

But altering the earths would be a permanent improvement of the soil?—It would; a great deal of mossy soil, if you lay on even half an inch, in some cases, of sand, or more especially alluvial soil, it will render that ground productive for many years.

It is necessary, in order that those manures may be made extensively useful, that the charges upon railroads should be very low?—It is.

You have given a calculation of the benefit to a farm on the supposition that the rate per ton shall be 1*d.* What would the advantages be, supposing the rates were to be reduced to one-half or one-quarter?—There can be no doubt that a low rate of charge would very greatly tend to the increased consumption of manures, and to the transport of earths for agricultural purposes; that would give a much increased produce to the land, which would enable the agriculturist to furnish his commodity at a lower rate; that again would increase the consumption in large towns; and in manufacturing populations it would also create a greater traffic upon the railways, and enable them still further to reduce their rates; and as the heavier articles are more consumed by the working classes, it would add very much to their comfort; and there are great tracts of country which would be cultivated to much advantage, if favoured with railway communication, which are now allowed to lie comparatively barren.

Looking, therefore, to those results, ought not railroads receiving high profits to be obliged to extend branches laterally to districts which want of communication has left in comparative unproductiveness?—I think so; it has occurred to me upon this point, that it would be a great advantage if, by some public authority, the country should be divided as regards railways, into sections, so that there might be systems of railways established for those different sections, according to their respective wants; a system so established would be enabled to provide branch railways into districts which could not of themselves afford to pay for a railway; they would be enabled to do that, because this branch, though it did not pay it itself, would pay as part of a general system, in consequence of the additional traffic that it would bring upon the line.

Referring again to the benefit to agriculture from the introduction of railways, and consequently of cheap conveyance, can you give the committee any particulars of the advantage of the transport of the carcasses of animals, as compared with the old system?—Without a railroad it is impossible to transport fat cattle any greater distance than from 50 to 70 miles, without very great deterioration; but railroads will afford the means of transporting those cattle 300 or 400 miles with great advantage, and in carcasses they may be transported 700 miles; and in that way meat may be brought from the most distant parts to populous districts at a very small additional expense, which, with the expense for transporting either beef or mutton in the carcass, does not amount to more than one-third of a penny for five hundred miles, so that you may have meat nearly as cheap in London as you have it in Inverness. There is another great advantage arising from this easy and cheap mode of transit; which is, that the little country butchers, who purchase lots of cattle and sheep for the consumption of the town or village in which they may live, always find among those lots a few that are of too good a quality for the consumption of their particular district; and if they are enabled to send them to a great distance to a more wealthy part of the country, they not only supply those rich communities with the superior article that they want, but they can supply it at a cheaper rate; and again, this enables them to sell the medium and inferior

animal at a lower rate to the consumer in the country; so that both the rich population of towns are benefited, and the poor of the districts where the animals are killed are very much benefited.

Is there not a demand in large towns for picked joints?—There frequently is; and I know, from the inquiries I made in Yorkshire for the Direct Northern Railway, that the butchers are contemplating, when that railroad communication shall be worked out, to send the surplus of their better joints to the London market, which will enable them to sell the inferior parts to the working classes at a lower price.

In short, quick conveyances enables them to dispose of the whole animal in the best market?—Yes.

By the former mode of conveyance there was no possibility of carrying killed meat any great distance?—It was quite impossible. There is another great advantage in killing the animal in the country districts; the offal or inward parts of the animal are available to the working classes of the district, and there is an immense quantity available for manure, which when brought to those large towns is a nuisance, in the country it is of great value.

Have you anything to add in explanation upon the points upon which you have now been examined?—I have several tables to give in illustrating the different points upon which I have been examined. I have no doubt that railroads will do more for communicating intelligence amongst the general community than even the press has done, inasmuch as seeing a thing is much more than hearing of a thing, and there will be much greater progress made in the diffusion of improvement by railroads than by any other means.—*British Farmers' Magazine.*

Newbold's Plough—The Farmers' Club, N. Y., Fourth mo. 18th, 1848.

Mr. Meigs introduced to the Club Nathaniel Sands, an aged gentleman, who desired to speak of the first cast-iron plough and Charles Newbold, its inventor. Mr. Sands said that he and many other citizens, who are now seventy and eighty years of age, remembered Charles Newbold, a man of excellent character, who some fifty years ago became enthusiastically devoted to the project of an iron plough. He had contrived to cast the plough with such a form as then was unknown for excellence. He obtained a patent which was exhibited to the Club, dated June 26th, 1797; but he had invented it as far back as 1790. Newbold spent several years and an estate of about $20,000, in the attempt to introduce his cast-iron plough. Mr. Sands had never heard it doubted that Newbold was the first man who invented the cast-iron plough. Before his time, the hog plough was used—so called because of its very irregular movement in and out of the ground, like the rooting of a hog.

Newbold's plough was at first liable to break, and the blacksmiths were loath to mend it. The mould board and land slide were cast whole. Mr. Sands paid $10 a piece for two of Newbold's ploughs, and used them in Orange county, and then considered them to be the very best plough he had ever handled. Mr. Sands said that this cast-iron Newbold plough was the very basis of all the cast-iron ploughs since made; that it was an excellent model, and all the improvements since made were based upon it; that Wood's patent was for an improvement in the plan of attaching the share. Newbold at last added a steel edged share to his cast-iron mould board and land side. Thomas Jefferson tried Newbold's plough at Washington—approved of it and set himself to inventing a scientific mould board.

Mr. Meigs thought that, although the nation might object to the long continued monopolies of patents, yet that in every case of distinguished benefit conferred by any ingenious citizen upon his country, it was a duty, and one which would prove to be profitable to the nation, to mark that worthy citizen by a suitable present.

Mr. Wakeman moved that a committee of three be appointed to examine the claim of Mr. Newbold.

The Chairman appointed Charles Henry Hall, Judge Van Wyck, and Josiah Dutcher.

Dr. Underhill asked as to the model of Jethro Wood—how far it approached the Newbold plough?

Mr. Sands—After many trials, Mr. Wood had to return nearly to Newbold's model.

Dr. Underhill—It seems to me that something ought to be done for the widow and daughter of the unfortunate, but ingenious Newbold. Certain it is, that there has never been produced in the world so important an instrument as the plough of iron. The saving of labour and the amount of produce from the iron plough, are beyond all calculation in dollars, for the last thirty years.—*Farmer and Mechanic.*

The Southern Planter gives the following simple remedy for destroying lice upon cabbages:

"Cover the leaves infested with the lice with a handful of dry earth."

The Extended Field Cultivation of Vegetables.

BY CUTHBERT W. JOHNSON, ESQ., F.R.S.

It is certain that within the present century the farmer has very materially increased the list of his cultivated crops; and that this variety in his rotations will be yet more extended, there is, I think, little reason to doubt. This extension, too, will perhaps not be entirely confined to the cultivation of green crops raised for the consumption of live stock, or of the cereal grasses, but may, in favourable situations, include with advantage, the more valuable varieties of fruit and vegetables.

We are all aware to what a profitable extent, in particular districts, such cultivation has long since extended. The immense and valuable apple and pear orchards of Herefordshire and Devonshire, the cherry orchards of Kent, the plums of the latter county and of Surrey, are well known instances of the profitable and extensive cultivation of common fruit. And to a considerable, although a minor extent, is the cultivation of even the pine-apple carried on in the south of Sussex and other places. Of culinary vegetables, the cultivation of the superior varieties has not only arrived at a very large amount, but I cannot but feel that this might be still more advantageously extended in many localities by the farmer. Few persons, in fact, are aware of the extent to which the demand for many vegetables extends. Take, for instance, the asparagus: "This," remarks Mr. George Johnson, "is especially cultivated extensively for the London market; and it is estimated that in the Surrey parish of Mortlake alone, there are generally about 80 acres under this crop. One grower there (Mr. Biggs) has sometimes had 40 acres under asparagus at one time. A great deal is also grown near Deptford: one grower there (Mr. Edmonds) has had 80 acres entirely under this crop—a statement which must appear almost incredible to those who have not witnessed the loads of this article daily heaped on the green stalls of the metropolis for the space of nearly three months." This root delights in those soils which contain common salt. It is, in fact, a marine plant, and is found wild on our coasts about Harwich, Weymouth, &c., and always grows with increased luxuriance in our gardens, in soils dressed with salt. These facts explain the subsequent observations of the author of the Monthly Volume, when he remarks: "In a garden formed at Dunbar, in the very beginning of the 18th century, by Provost Fall—a name well known in the mercantile world—asparagus was for many years cultivated with uncommon success. The variety used was the red-topped, brought from Holland. The soil of the garden is little better than seasand. This was trenched two feet deep, and a thick layer of sea-weed was put in the bottom of the trench, well pressed together and beaten down. This was the only manure used, either at the first planting, or at subsequent dressings. There was, in this instance, an inexhaustible supply of the article generally at hand, as the back door of the garden opened to the sea-shore."

I think it not improbable, that in many of the warm valleys of the south of England, in sites where the beds could be occasionally irrigated, and the crop not annually cut so close as at present, this root might be cultivated to a much larger and more profitable extent than at present. Of the irrigation of this crop, Mr. G. Johnson remarks: "The cultivation of this vegetable is introduced by our countrymen even into the hottest latitudes of the tropics. Mr. J. Newman has published the successful mode he has adopted for obtaining it good, in the island of Mauritius, and we have eaten of it—excellent in quality, and nearly of an average size in Bengal. Daily irrigation is there the chief essential."

In the county of Kent, there are also, as Mr. Main remarks, extensive and profitable fields of filbert trees; and there the farm labourers are adepts at the proper method of rearing and pruning the trees. These plantations, in fact, extend to an extent of several hundred acres, and I have little doubt but that their cultivation might be very profitably extended in other portions of the kingdom with equal success. We find also that in many districts the cultivation of certain fragrant plants is carried to a remarkable extent. Thus, in the county of Surrey are found many considerable fields devoted to the growth of lavender, peppermint, &c. The parish of Mitcham has a good many of such plantations; and it is remarkable, in the case of some of these, such as lavender for instance, that a very poor and light gravelly soil is best suited to this plant; being, when grown on such lands, more fragrant, longer lived, and more capable of enduring severe weather, than in a rich soil. In rich or moist soils, it grows, it is true, luxuriantly; but then it is commonly destroyed in the winter. As this plant delights in a dry, open situation, the cultivation of it on many soils might surely be extended; for there is always a considerable demand, not only for the green lavender flowers, but for the high priced oil extracted from it by a very easy distillatory process.

It is hardly necessary to enlarge this list of readily produced vegetables, fruits and flowers, whose cultivation might, in so many favourable districts, add to the farmer's profits. There is hardly a locality in which one or other of the class of those to which I have alluded may not be occasionally introduced with advantage; and in the consideration of such partial variations in the ordinary crops of the farm, the young agriculturist will not forget that such modes of cultivation, by lengthening the usual rotation in any degree, is accompanied with considerable indirect advantages. The land becomes more productive by such changes; and in the case of some of them, they certainly prevent the increase, if they do not destroy some of the destructive insects which prey upon the ordinary crops of the cultivator. Thus, white mustard, woad, peas, beans, &c., are secure from the attack of the wire-worm, perhaps the most powerful and the most tenacious of life of all the insect enemies which the ordinary crops of the farmer have to encounter. The Lincolnshire farmers find that a broken-up pasture sown with woad, is quite free from the wire-worm during the following crop of wheat. And when speaking of a similar result after a crop of white mustard, Mr. Tallent remarks: "This fact I have demonstrated perfectly to my own conviction. I first tried the experiment on half an acre of fallow field, of 50 acres, which was much subject to wire-worm. The whole field was fallowed and sown with wheat; the half acre, which was previously cropped with mustard, was wholly exempt from the wire-worm—the remainder of the field was much injured. Encouraged by these results, I sowed the next year, a whole field of 42 acres, which had never repaid me for nineteen years, in consequence of nearly every crop being destroyed by the wire-worm. I am warranted in saying that not a single wire-worm could be found the following year. I am therefore (he concludes) under a strong persuasion that the wire-worm may be successfully repelled and eradicated, by carefully destroying all weeds and roots, and drilling white mustard seed, and keeping the ground clear fly hoeing." The mustard is not only excellent to plough in as a preparation for a wheat crop, in the way alluded to by Mr. Jesty, but as green food for sheep, as described by Mr. T. C. Burroughes, of Gazely. The increased number, or the extended rotation of the farmer's remunerative crops, then, even in but a minor and only locally applicable degree, is an object too important and too self-evidently so, to need any illustration. For such enlarged rotations not only add to the bulk of his corn, and improves both the quantity and the quality of the flour which it produces, but it renders it less liable to disease, or to the attacks of the insect vermin, which are in too many instances the agriculturist's greatest pest.—*British Farmers' Magazine.*

Wool Trade of the United States.

This article promises, at no distant date, to become of first-rate importance. The present growth is much greater than we in this country have, generally, an idea of, being upwards of sixty millions of pounds weight at the lowest estimate, far exceeding their domestic requirements. It is important to notice the great weight of the fleece, which is nearly double that of any other country producing similar qualities; and when we consider the facilities for extending the production, there cannot be a doubt that, in a short time, the quantity available for export will be very considerable. Moreover, it appears that of late much attention has been directed to the subject in the Western States, with this view, as offering, to some extent, a more profitable return than the cultivation of cotton; and when it is stated that one pound of wool, nearly full blood, can be grown at the same cost as two pounds of cotton worth 6d., there is every reason to expect that the trade will eventually prove remunerating. The receipts last year were below the previous one, the consequence of former shipments generally not having been attended with advantage; but this is accounted for, to some extent, by the indirect channels through which many of the lots came, and their inferior condition in most cases. Until they are got up with more care, better washed, and more evenly graded, we see little prospect of a profitable result. The greater part hitherto received has been so deficient in these essential requisites that purchases have been attended with extreme hazard to the buyer, which has operated much against their sale.—*British Farmer's Magazine.*

Fine Hogs.—Burlington county, in New Jersey, has long been famous for its pork: and the poor-house there has of late years, been very successful in slaughtering large hogs. The *Enquirer* of this city remarks: "The Burlington county poor-house—said to be altogether the best managed county establishment in the State—has produced this season, amongst other things, 63 hogs, weighing 26,750 lbs. The heaviest weighed 556; the smallest 327. Two yearling hogs weighed over 400 each. The average weight was 424¾ lbs."

The Murrain among Cattle.

At the monthly meeting of the Highland and Agricultural Society of Scotland, held at Edinburg, on 12th of January last, the Secretary read a communication from the Board of Trade, to the effect that the epizootie, which was thought to be disappearing, had broken out with greater violence than ever among the horned cattle of Wallachia, and that three-fourths of those which had been spared from last year's visitation were falling victims to it. The Secretary said, that though the communication just read had reference to the state of the epidemic in a distant country, the directors conceived it to be their duty to submit to the public all information conveyed to them on so important a subject, in regard to which Professor Dick, who was present, had promised to give to the meeting the results of his experience. Professor Dick then rose and made the following statement, which we give as of great interest to the public at present:

Professor Dick stated that pleuro-pneumonia was still prevailing with great violence, and varied with the weather. It existed at present to a great extent in East Lothian, as well as in Aberdeenshire, and throughout the North. He was informed yesterday, by one of his pupils, who is in practice at Maybole, in Ayrshire, that there has only been occasionally a solitary case for fifteen miles round during the last twelve months. He considered its origin and propagation to be atmospherical, and attributable to influences to which man and the lower animals were equally exposed; in illustration of which the Professor referred to the existing epidemic in the form of influenza, under which he himself was evidently labouring, and in consequence of which the public schools have been partially closed. The disease consisted of active inflammation of the lungs, and in the pleura which covers them and lines the chest. It was attended with great danger, particularly when the pleura was principally affected; and such cases generally were fatal, unless the proper remedy was immediately applied; because, when that membrane is attacked by inflammation, being what is called a serious membrane, it very rapidly proceeds to pour out serum and lymph between the lungs and ribs; the chest fills with water, and the animal sinks and dies rapidly. Man, and all the domesticated animals, are liable to disease, although they may not be equally affected at the same time. Horses, as well as dogs, during the present epizootic, have been less affected than cattle.

The disease is not, generally speaking, so fatal in horses as in cattle, because horses, being under continual notice, were better attended to; the symptoms were at once noticed, and they were seldom lost. The same would be the case with cattle, if properly looked after; but too little attention is paid by the breeders and rearers of cattle to the health and comfort of their stocks and the symptoms of their diseases; they, at the same time, are not so much under the immediate observation of their owners. Indeed, the early symptoms very readily escape notice, because they are obscure.

To illustrate the treatment required, the Professor referred to a case in Lanarkshire, where he had been called on for advice; his instructions to the smith or farrier on the property were, that he should bleed whenever he observed any cough or alteration in the milk or feeding; clean out the bowels by laxative medicine, say one pound of epsom salts, nitre, tartarate of antimony in large and repeated doses; repetition of bleeding: blistering the sides, and even firing, if necessary. After the inflammatory action has been subdued, tonics should be administered. By following this course, the smith has acquired a local celebrity. It was sufficiently simple, if adopted at an early stage of the disease; but if the disease has made a certain progress, no reasonable hope of success can be entertained.—*London Farmers' Magazine.*

Preservation of Food.

The preservation of food has at most periods been an object; but the usual processes of man have been, for the most part, little in advance of the squirrels and other animals; less than those of the bees, which have an instinctive perception of the true principle, viz., the exclusion of air, which they accomplish by hermetically sealing up their honey cells. In some cases this principle is aimed at, but in a clumsy way. Preserved provisions, as meat, fish, soup, and milk, are enclosed in hermetically sealed tin cases, and rendered durable for years. The air in these cases is excluded by the agency of heat and a partial cooking. The expense of these methods prevents their being more than a luxury. Potted meats are prepared with antiseptics, and the air is excluded by a covering of melted fat. Green fruits and vegetables are enclosed in scaled bottles, from which the air has been driven out partially by heat. Meats, antiseptically treated, are also preserved from the air by enclosing in a bladder or gut, in the form of sausages. Salted meat in brine is preserved

partly antiseptically by the salt, and partly by immersion in the liquid brine. Smoked meats are preserved, partly antiseptically by the empyreumatic acid, and partly by the watery particles being driven off by heat, so that the meat becomes a kind of glue, and the air is excluded. Dry cakes of glue may be preserved any length of time; but if they be moistened to admit the air, they soon putrify. The charqui or jerked beef of Southern America is made into a glue by the heat of the sun, and thus assumes the character of cheese; decomposing by mites in the same manner. Dried flesh of this kind, mixed with butter or fat, is the pemican of North Western America, from which air is thus excluded. Egyptian mummies have the air excluded by bandages. There are various modes in which grain is preserved, some intentional, some accidental. What are called brewers' grains or spent malt, the cowkeepers in the neighbourhood of London seek to preserve by covering them over in pits. The air is not excluded, and therefore the method is inefficient. What is called mummy wheat, has been preserved by the effectual exclusion of the air. In Spain, wheat is preserved in what is called Silos, *i. e.*, underground pits of peculiar soil, covered in with earth. Wheat thus treated lasts many years. The French armies were accustomed to hunt for these deposits for subsistence. A flat stone usually covered the opening; and on its removal a quantity of deleterious gas generally rushed out, sometimes killing the opener with asphyxia. In Canada West, hunters and Indians make deposits of corn and other things in artificial caverns called Caches, chosen in dry spots, and covered over. In some of the internal parts of Spanish America, the common granary is the skin of an ox taken off entire, and the legs and neck being tied round it, is filled with tightly-rammed earth through a hole in the back, while suspended between posts. When dried to a state of parchment, the earth is taken out, and the bloated bag, resembling a huge hippopotamus, is filled with grain, which is thus kept air and vermin proof.

Three conditions are essential to the process of putrefaction; viz.: heat, moisture, and still air. With wind, moisture is carried off; with cold, the decomposing process is checked, as may be seen by the carcases of animals that lie through the winter in snowy mountains, and dry up to glue. Without air, everything is locked up and remains *in statu quo;* as reptiles have been buried for ages in blocks of stone or ancient trees, and then resumed their vital functions, unchanged by time.

In direct opposition to these principles are the granaries of Great Britain and other countries constructed. Their site is generally the bank of a river, or the sea-side. They are built of many floors at a vast expense. They are provided with many windows, each floor being the height of a man, yet not permitting more than twelve to fifteen inches depth of grain on each floor, for fear of heating, unless in the case of very old samples. Men are continually employed to turn the grain over, to ventilate it, and clear out the vermin; and the weevil is naturalized in every crevice, as surely as bugs in neglected London beds, or cockroaches in West Indian sugar ships. It is the admission of air that permits this evil, that promotes germination, that permits the existence of rats and mice. *In the exclusion of air is to be found the remedy.* The practicalization of this is neither difficult nor costly: on the contrary, close granaries might be constructed at far less proportional cost than the existing kind. They might be made under ground as well as above ground, in many cases better. They might be constructed of cast iron, like gasometer tanks; or of brick and cement; or of brick and asphalte, like underground water-tanks. It is only required that they should be air-tight, and consequently water-tight. A single man-hole at the top, similar to a steam boiler, is all the opening required, with an air-tight cover. The air-pump has long ceased to be a philosophic toy, and has taken its place in the arts as a manufacturer's tool; and no difficulty would exist as to that portion of the mechanism. Now, if we suppose a large cast-iron or brick cylinder sunk in the earth, the bottom being conical, and the top domed over; an air-pump adjusted for exhausting the air, and an Archimedean screw pump to discharge the grain, we have the whole apparatus complete. If we provide for *wet* grain, a water-pump may be added, as to a leaky ship. Suppose, now, a cargo of grain, partly germinating, and containing rats, mice, and weevils, to be shot into this reservoir, the cover put on and luted, and the air-pump at work, the germination would instantly cease, and the animal functions would be suspended. If it be objected that they would revive with the admission of the air, we answer, that the air need not be admitted, save to empty the reservoir. If it be contended that the reservoir may be leaky, we answer so may a ship; and if so, the air-pump must be set to work just as is the case with a water-pump in a leaky ship.

The cost of an underground reservoir would possibly be more than one above

ground, but it has the advantage of occupying space of otherwise little value. One obvious cheapness of this improved granary over those now existing is, that the whole cubic contents may be filled, whereas, in the existing mode, not above one-fourth of the cubic contents can be rendered available. But many existing structures might be rendered eligible. For example: the railway arches of the Eastern counties, the Blackwell, and the Greenwich. In such cases the grain would be discharged into them from wagons on the line, in the mode used with coals. Reservoirs might be erected in farm yards, and the grain threshed out and carried from the harvest field direct, with the absolute certainty of preserving it any length of time that might be desired. Or, inasmuch as it is a certain thing that all farms must ultimately communicate with railways, by means of cheap horse-trains, or steam-sidings, in order to work to profit, it would be desirable that the granary should be erected at some central railway station, where a steam mill would do the work of exhausting the air, discharging the grain by an Archimedean screw when required, and grinding it into meal.

The same arrangements that are good on land are also good at sea. Many cargoes of wheat have been abandoned owing to heat and germination on their passage. Rats, mice, and weevils, also, are very destructive. If the vessels were built of metal-lined, air-tight compartments, the air might be exhausted by the pump; occasionally trying the pump to ensure against leaking; and thus even now, undried grain might be carried and delivered across the sea undamaged; the vessel would be more safe by means of air-tight compartments, and also more buoyant. And the same arrangements would be equally available for various kinds of goods subject to damage in transit,—such as are hermetically sealed in tin cases; and thus the expense of packing would be saved.

In reservoirs on shore the air might not merely be pumped *out;* warm air might be pumped *in*, to dry damp grain. Water might also be pumped in and out to *cleanse* the grain.

Similar reservoirs or magazines on a smaller scale might be constructed for butchers, or other provision dealers, and meat might be preserved fresh for weeks in the heat of summer, preventing the necessity of waste, or of selling at ruinously low prices; and so with fish brought to Billingsgate or other markets. On the same principle, there is no doubt that fresh meat, as sea stock, might be carried instead of salt meat, and that fresh provisions might be transported from any part of the world to any other part. Pork, or beef, or mutton, or venison, might be killed in America, and transported into England. Weevily biscuit would be a traditional commodity only in the annals of sailor craft.

"Water-tight compartments" is at present the expression for a safe ship. "Air-tight compartments" would be a term expressive of equal safety and far more general utility. The expense of air-tight joints for the manholes or openings would be but trifling. By the application of *gutta percha*, a perfect fit might at all times be ensured with scarcely any expense.

There can be little doubt, that with such arrangements, the prices of food would be far less fluctuating, and that it would become a practicable thing to borrow money on food as on brandy or iron, or any other commodity, when once its durability and unchangeability were demonstrated.— *Westminster Review.*

From Hovey's Magazine.

On the Cultivation of the Mushroom.

By J. Kennedy, Gardener to S. T. Jones, Esq., Staten Island, N. Y.

Sir,—I have more than once been surprised, that, amongst the many valuable articles which appear monthly in the pages of your magazine, on the various branches of Floriculture and Horticulture, nothing, so far as I have seen, has been said on the cultivation of the mushroom; and, as it is an old acquaintance of mine, and one which I consider deserving a prominent place in the vegetable department, especially during the winter months, I shall take the liberty of throwing out a few hints on its culture, which may not be unacceptable to at least some of your readers. My mode of culture differs in some minor points from that in general practice, but as it possesses the advantages of being both cheap and simple, I hope it may lead to a more extensive culture of this delicious vegetable.

Early in the month of November last, I erected a shelf eighteen feet long by four wide, and one foot six inches deep, in a basement, underneath a row of lean-to buildings, on the north side of a vinery wall. The bottom of the shelf is elevated eighteen inches from the floor, and, in forming it, I left a cavity of one inch between each board, for the purpose of drainage, as well as to allow the heat from fermenting materials, placed underneath, to pass freely up into the bed: the shelf being completed, my bed was formed as follows: I first shook a light layer of litter from the barn-yard, over the bottom;

then four inches of horse-droppings free from the litter, and previously exposed in a dry airy place, in order that very little moisture may be in it at the time of using for forming the bed. I then put over this two inches of sandy loam, which I beat down firmly; and again put on four inches of horse-droppings and two of loam, which I also beat down; then four inches more of the horse-droppings, and two of loam, which, when thoroughly beat down, completes my bed.

Thus far completed, my next object was, to fill the vacancy underneath the shelf, with a mixture of hot stable manure, and leaves well moistened previous to their being put in, and, in the course of a week, I had a pretty lively heat in my bed; I think this was about the 18th of November. I then went to New York to procure the spawn, but, on making inquiries at the various seed stores, I found, to my regret, there was none to be had at the time. On my way home, however, I learned that a gentleman's gardener on the island had a mushroom bed the previous spring, where, on applying, I found the bed had been turned out some time previous; however, I obtained the liberty to examine the heap, and succeeded in finding sufficient to give me a start; this I put into my bed, and as soon as it began to work, I lost no chance of separating it, and distributing it as equally as possible over the bed. By using this precaution, and a judicious attention to my watering-pot, I soon had the satisfaction of seeing the prospect of a rich harvest; and, indeed, I was not disappointed; for the produce, I must confess, has rather out-weighed my expectations. The first mushroom I gathered, was on the 22nd of December, since which time, I have gathered, on an average, one peck per week. The bed is still improving, and I have no doubt but I shall be able to give a better supply for at least three months longer from the same bed, when I shall more than likely give it a month's rest, and then start it ahead again, when I shall furnish you with the results of my second progress.

It now remains to detail the mode of treatment since the bed was spawned, and, as the judicious applications of water are of the highest importance in the successful cultivation of the mushroom, I shall give the mode pursued by myself during the past winter, which I suppose will apply best for the system described above. I gave no water till the spawn began to run, which I was able to ascertain by thrusting my hand into the bed in various places, and when what I brought up had the appearance of net-work, and smelled like mushrooms, I gave the bed a liberal watering, which I repeated the two following days. I was then sure that I had given sufficient to moisten all the materials in the bed. This set the spawn actively to work, and I have only given a light sprinkling once a week since, which has kept the bed in a medium state, neither wet nor dry; but of the two I prefer the latter, as it is much easier at any time to wet the materials than to dry them; and too much water, in any stage of their growth, is certain destruction. With regard to temperature, I have seldom had it below 50°, and never above 60°, and between these two points, I am convinced, from a long course of experience, that mushrooms can be produced in the very highest state of perfection.

In gathering mushrooms, I always cut them; some twist them off, but I am not much in favour of this plan, as they are sure to disturb the young ones, which are always clustering and forming about the roots of those ready for gathering. I have often met with mushrooms formed and matured under the surface of the bed; but as they push up little hillocks, they are easily distinguished, and should be uncovered carefully, that the surrounding spawn may not be disturbed. It may be prudent to mention, that, when the weather was very cold, I covered the bed with litter to the depth of three or four inches.

I may also mention, as an additional encouragement to those who may be desirous of giving the above a trial, that they can force sea kale and rhubarb to a high state of perfection in the same cellar, and without any additional means: I have been supplying Mr. Jones's family with these vegetables from the same basement, since February.

Staten Island, March 29th, 1848.

Natural uses of Hair.

That hair effects an important purpose in the animal economy, we have evidence in its almost universal distribution among the mammiferous class of animals; and if we admit the analogy between the feather and the hair among all warm-blooded animals, additional evidence is obtained in the perfection of its structure, and again in its early appearance in the progress of development of the young. As a bad conductor of heat, it tends to preserve the warmth of the body; and in man it would have that effect upon the head, and serve to equalize the temperature of the brain. It is also a medium of defence against external irritants, as the heat of the sun's rays and the bites of insects, and against injuries inflicted with violence. Of special purposes fulfilled by the hairs, we have instances in the eyebrows and eyelids,

which are beautifully adapted for the defence of the organs of vision; in the small hairs which grow in the apertures of the nostrils, and serve as guardians to the delicate membrane of the nose; and in similar hairs in the ear-tubes, which defend those cavities from the intrusion of insects.—*Wilson on the Skin.*

Value of Sewer Water.

If we take the population of Liverpool at 300,000, their annual produce of sewer water would, according to Mr. Smith's (of Deanston,) data, be 7,140,485,676 gallons; and *if use could be found for all of it*, at the yearly rate of 17,920 gallons per acre, it would fertilise 398,460 acres. So that, allowing about one-half of the saving to go to the farmer, there would still, on Mr. Smith's data, be a revenue of above £270,000 a year to the town. And be it remembered that this estimate rests on the assumption of the *present sewer water* being used, without taking into account the improved drainage, by which the *whole soil* of the town—that to a very great extent is now otherwise disposed of—will be suspended in the water of the sewers, and increase vastly its value as a fertilizing agent.

By an experiment made lately in Lancashire, it was proved that eight tons of sewer water were superior in efficacy to fifteen of farm-yard manure, or three cwt. of guano.

We need hardly say, that if even a small part of this be true, the authorities of Liverpool may have at their command, whenever they choose, a fund amply sufficient to defray every necessary expense in improving the sanatory condition of the town. The Rev. Mr. Clay, in his report on Preston, has given a calculation in which he shows that, to place that town in as perfect a sanatory condition as external means well could, a sum of money would be required, the *annual interest* of which, to be raised by a rate, would be £8,959 9*s.* 8*d.* For this sum the whole town would be cleansed, every room in it ventilated, every house would have a water-closet and drain, the needful main and secondary sewers would be laid down, and half of the town supplied with water. To meet this expenditure, he estimates the annual value of sewer manure at £25,000, and the whole annual saving from improved sanatory condition, a lower rate of insurance, &c., at £22,815 more. In other words, the whole *weekly* expenditure per head of the population, for every improvement, would be about *three farthings*, while the whole weekly saving per head would be 4½d. This may be thought somewhat extravagant by those who have not paid attention to the subject; but let us see what the Towns' Improvement Company actually offers to do, and what it is about to do for Leicester, and, not improbably, for Manchester also. The proposal for Manchester is—to lay on pipes to every cottage, with a constant available supply of water to the extent of 100 gallons per diem to each house, for a penny a week for houses under £5 rent. To provide every cottage of the same class with a sink, washhand-basin, and self-acting water-closet, for another penny a week; and for an additional halfpenny a week, to keep the foot pavement and roadway clean by the sweeping-machine and washing with the jet. And lastly, "to effect street sewerage and pavement on terms of contract, and to seek its profit from an undeveloped source of revenue—the application of the refuse of the town for the purposes of agriculture." The company expects an income of twelve per cent. on the outlay from these sources, but offers to pay over one-half of all dividends above eight per cent. to the Town Council as an improvement fund. The Towns' Improvement Company has in connexion with it many individuals who are the most competent to form a judgment on the subject; and their proposals show the commercial value attached to sewer water as a source of revenue. Captain Vetch, R. E., one of their engineers, says in his evidence: "If the three objects of supplying water to the town, extinguishing fires, and of sewering and draining, were skilfully combined into one system, and if each town secured the benefits of such a combination to the inhabitants at large, their comforts and conveniences might be met either very cheaply, or even *be entirely defrayed* by a proper application of the manure."

The objection to the use of sewer water for agriculture, on the ground of malaria, is very simply answered by the fact stated by competent parties, that, while a top-dressing of stable dung gives off gases for six days, a dressing with sewer-water ceases to do so in *one day.—Liverpool Health of Towns' Advocate.*

Machine for Cutting Soles.

Machine for Cutting Soles.—The Boston Rambler says: "Mr. C. D. Bigelow, of Marlboro, Mass., has invented a machine for cutting out soles for boots and shoes of every size and shape. The soles are cut out with the holes for pegs all punched, so that the peg awl will be entirely dispensed with, if some arrangement can be made to punch the inner sole. This will be a machine of great benefit to boot and shoe manufacturers, and we believe it can be got up at but little expense, as it is very simple.

Butter for Exportation.

THE following are extracts from letters from Clonel and Cork, furnished by Brown, Shipley & Co. of of Liverpool, to B. P. Johnson, Secretary of N. Y. State Agricultural Society. To those who furnish our tub butter for winter use, every hint for its proper manufacture, is important. A great proportion of it brought to Philadelphia is really not such as this market should be supplied with. Our pound butter—we mean that which is brought by our market people from day to day,—is perhaps unsurpassed in its general character, by that which is found in any market in this country—but our winter, firkin butter needs improving.—ED.

LETTER received from Clonmel, dated 1st of July, 1847: "We are this morning in receipt of your favour of 29th ult., and in reply we will give you all the information we can, as to how butter is manufactured in this neighbourhood. Our best makers have large airy, cool dairies, and churn twice or three times a week, which depends on the heat of the weather. Caution must be used not to allow the cream to be too long in the tubs and pans, or until it gets sour, as the butter will then be inferior and what is termed *cheesy*. The butter-milk must be well washed out of the butter, and when salted to be packed *firm* into the firkin. These, with great cleanliness, are the principal things to be looked after in the manufacture, otherwise your butter will not keep its quality. The quantity of fine salt is 3 lbs. to the firkin, containing about 65 lbs. The butter in this district is made expressly for the London and north of England markets; in the former, at certain periods of the year it takes precedence of the Dutch. We never heard of *Rose butter*, but we know one of the Waterford houses brands the best quality he ships with a rose. The navy are supplied with butter exclusively from Cork, where a larger quantity of salt is used in the manufacture, and where it is made up expressly for foreign exportation."

Extract from a letter from Cork: "In reply to the query as to the best mode of preparing butter for hot climates, we believe more depends on the climate the cow is feeding in, than in the preparation; as we find that the Cork butter, which is drawn from the counties of Cork, Limerick and Kerry chiefly, has maintained a character in all foreign markets, when the trade for such has failed in all other Irish ports where it was attempted. The butter brought here is packed by the farmer in original packages, which should be good casks of about 66 to 70 lbs. nett each, capable of containing pickle; the pickling and cooperage—with some one or two lbs. of the salt on each package additional, to keep the pickle at full strength,—should be done at port of exportation, as it is here. The quantity of salt mixed in the making of the butter to be about one lb. of salt to 10 or 11 lbs. of butter, and the buttermilk to be well worked out of the butter, without using, however, the hand too much. In packing, care should be taken to pack it as closely as possible. This, we believe, is the only instruction that can be given. The term 'rose butter,' we know not the derivation of. There is only one description shipped here, and all is brought in for inspection to a public market in this city."

Gypsum, or Plaster of Paris.

To Chancellor Livingston is owing the introduction into New York, and the common use of *gypsum* or plaster of Paris, as a manure. About the year 1789, he began to make experiments on his own farm, and succeeding, he communicated his results to the farmers of the State. And in a few years he had the satisfaction of seeing it generally used. It is this chiefly which has given New York its present primary station among the United States. The lands upon our Hudson river were fast deteriorating, having been worn out by constant tillage. On this account, the inhabitants of this district of country were fast removing into the more unsettled parts of this State, or more generally into some of the new States. But the seasonable introduction and use of plaster of Paris renewed our worn-out lands, and brought them back to more than their original fertility. The depopulation of our State was prevented. Emigrations from other States were made into it; and New York, which in the year 1790 was only the fourth in population, and in 1800, only the third, at the last census in 1810, was the largest in population of any in the Union. But it not only made our inhabitants numerous, it made them industrious, prosperous and rich. The *gypsum* was the true philosopher's stone, which had been so long sought for. It turned everything it touched into gold.

To Chancellor Livingston this State is further indebted for the introduction of the Merino breed of sheep, and for the general emulation excited among our farmers, to rear and improve these valuable animals. The introduction of these was a consequence of the Chancellor's mission to France, and must be of the greatest and most decisive advantage to the United States. Already its effects upon our manufactures have been seen. The most affluent among us now feel proud to wear and to exhibit the fruit of our

infant manufactures. The American farmer feels a conscious greatness and independence, when he can appear clad in the vestments wrought by the hands of his sisters, or wife, or daughters. But above all, the real patriot sees and rejoices that our future dependence on foreign manufactures can be no longer asserted; and that our national wants can be supplied from our own internal resources, whenever the true policy of the government may require the measure. These are the consequences of the introduction of the Merino sheep. For ever honoured by his country be the man, who obtained the *golden fleece*, and returned with it to our shores; who has declared a second independence for our country.—*Eulogium by T. Clowes.*

From the American Farmer.

Sowing Wheat in July.

Wheatland, 8th March, 1848.

Mr. Editor,—In reply to the enquiry of "A Patuxent Farmer," in the March number of the Farmer, I will state, that I have made enquiries of several of the friends of early sowing, and have been informed by a neighbour of Mr. Hossenger, of Newark, Delaware—*who was the first to sow wheat in July* in this country—that his practice has been for five or six years, to sow wheat amongst his corn in July, and cultivate it in, from which practice he has obtained as high as 25 bushels per acre. I also understand, that during that time he has not failed to make a good crop but once. Mr. Hossenger continues that practice—many others in that neighbourhood have adopted the same plan; others have sown cornstalk fallow, and even clover-lay, with a like good result. Mr. Hossenger and most others, do not approve of pasturing down their wheat, either in fall or spring. But *Mr. Wm. Bowman*, one of the best and most successful farmers of St. George's Hundred, is in the habit of pasturing his July sown wheat with sheep. Possibly pasturing with sheep would be no disadvantage if fly was in the wheat. I should prefer to risk the fly, and not pasture. The July wheat sowers are generally our best farmers, and our best farmers generally at this day of agricultural improvement, put in all their fallow wheat with the *drill*. I have not sown any yet in standing corn, but I think I will put in in that way next July, and either cultivate or have a machine made with five drills, nine inches apart, to run between the rows of corn. I have been in the habit of planting with the drill in rows four feet six inches apart, and one stalk in the hill, one foot apart in the rows. Although I have seen others sowing wheat in July with great success, I have never yet sown any till near the last of August, and too often, late in September. I am so well satisfied with the practice of Mr. Hossenger, that I shall try to get in all my wheat this year, at least a month earlier than I have ever done before. I think Mr. Hossenger sowed once as early as 23rd of June.

It is gratifying to us on the eastern side of the Bay, to hear of, and occasionally see, the improvement going on on the western shore—for I too, had the pleasure of seeing those manure heaps on Col. Capron's field at or near *Laurel Station*, a few weeks since, and those drains and that white fence too, and I was equally well pleased to see about as good a dressing going on near home, on the farm of *Mr. Henry Kibler*, of Bohemia Manor, Cecil county, Md.,—but Mr. Kibler, like Col. Capron, is one of the very best farmers on this side of the Bay, as you may judge from the fact of his having taken twelve hundred and twenty bushels—or 24 bushels to the acre—of wheat the last year, from a field from which three hundred and twenty only was taken when last in wheat, and considered a good crop at that.

Mr. Kibler started, as most other good farmers start, by putting on *lime*, *which made clover*—not neglecting his farm-yard manure heap—which, together, has and always will, make the wheat and corn grow,—with this difference, many improvers had the *means*, as well as the *will*, to begin with,—will, by the by, is more than half the battle,—but Mr. Kibler had but little else than an honest face and hard hands, by which to obtain credit, wherewith to purchase lime, marl, &c. Mr. Kibler procured his lime on a credit, and in four years after he first determined to lime his farm, which consists of over 300 acres, he had the whole covered at the rate of 40 bushels to the acre, and paid for, by a portion of the crops grown; a kind of rent, in which the limeburner was amply paid for his lime, and Mr. Kibler was as well repaid for his labour—and the above is the result. He is now top-dressing all his land with marl, not neglecting his barn-yard at the same time.

Other valuable improvements have come under my notice, one of which I will mention. *Mr. G. G. Whitaker*, purchased an old field for ten dollars per acre, near Principio furnace, about five years ago, upon which he put on about 50 bushels of quick lime per acre at first, and subsequently gave it a further top-dressing of ashes, upon clover, of 200 bushels per acre, with perhaps a portion of barn-yard manure, but no other bought manures. Last fall I was invited

several times by his neighbour to go and see upwards of 100 bushels of corn grown, some said 110 bushels, by estimation. I did not go to see it, but a few weeks since, Mr. Whitaker told me, that he took between 2300 and 2500 bushels from 25 acres.

J. Jones.

For the Farmers' Cabinet.

Take care of your Implements.

Mr. Editor,—Nothing affords me greater pleasure, than the annual agricultural meetings which take place around us, "topped off, as they are,"—as my friend Tomlings says—"with an appropriate address, by some veteran in the cause." Many of these I make it my duty to attend; and perhaps one of the best speeches ever delivered on such an occasion, was that by Dr. Darlington, at the meeting of the Philadelphia Agricultural Society, at the Rising-Sun, four years ago. It may be found at page 124, of the ninth vol. of the Cabinet; and to it, I often turn for re-perusal, my establishment bearing witness, that such "labour is not in vain." It is concise and plain, and coming home, as it does, to every man's business, the lessons that it teaches are easily remembered, and as easily practiced; the leading feature being *the proper use and necessary care of our tools and implements.* For a considerable time after its delivery, I could perceive its beneficial effects, in the general management of my neighbours' establishments; and I would add, in my own, in particular, to the present hour. I well remember, the first thing I did after it, was to repair my outer gate, which, for years had been swinging in the blast, but never shutting; and the next, to build a shed, both wind and water-tight, for the bestowal of my implements, sufficiently large to afford "a place for every thing." Here, every tool is kept fit for use, out of the way of the droppings of the poultry-roost, by which so many of our implements, and even our carts and market wagons are disfigured; and especially our ploughs and harrows, which are generally left thus exposed for many months together, unless they are snugly packed away under the fence of the field last ploughed, and sheltered by a growth of weeds five feet in height! Now I calculate that my savings in the wear and tear of tools, since the delivery of that speech, have not been less than $50 per annum; while I put down the time gained by having "everything in its place" and fit for use, worth as much more—a very pleasant mode of adding $100 a year to one's income, on the faith of the old adage, "A penny saved is a penny got."

Travelling, some time since, through New Jersey, I noticed a large roller, on the frame of which had been erected a high roof, as a protection against injury from sun and rain; and seeing, the other day, a large and very expensively constructed double implement of this description, lying on Arch street wharf, with the name "Dr. Noble, Delaware City," on it, I would take the liberty of recommending the Dr. to follow the example, adding a seat for the driver; the oxen being easily guided, by a line from the tip of the left horn of the near ox, to that of the right horn of his companion. With this care, and housing it when out of use, such an implement would last a young man his life time.

T. C. S.

P. S. Since writing the above, I have had occasion to visit a friend, when, on enquiry for a sight of his plough, he reflected a moment, and said, "Let me see, where did we use it last? Oh, I remember, it was in the upper field, last wheat sowing;" and there we found it, *safe*, but not *sound*, and in a condition not easy to be imagined.

On the Principles of Vitality and Longevity in Fruit Trees.

BY PROFESSOR TURNER, ILLINOIS COLLEGE.

I have read with much interest, the various discussions on fruit trees and their diseases, in the several numbers of the Horticulturist. I have delayed the correspondence which I sometime since promised, partly for want of time, and partly in order to avail myself of the advantage of a tour through northern Illinois and Iowa, to examine nurseries and converse with practical nurserymen and fruit growers, so as either to confirm my theory by facts, or reject it. The result is, that my views, derived 1st, from the necessary laws of vegetable physiology, and 2nd, from the results of some ten years experimenting on those principles in my own garden and grounds, have been entirely confirmed, by the experience of intelligent practical observers with whom I have conversed, that I am willing to suggest them for the serious consideration of the editor and readers of the Horticulturist. I may, indeed, still be in the wrong; but if so, how shall I become right unless through the light illuminated by the editor and able correspondents of the Horticulturist. Meantime your readers will allow me to write with the the positiveness of one fully convinced in his own mind, even though those convictions may rest on a frail foundation.

My great object will be to prove that the jacknife and handsaw of the nurseryman,

are by far the greatest enemies of all fruit trees in this part of the west, and the producers of more hereditary and annual diseases among our fruit trees than all other causes combined. Their mischief is, of course, effected, first, by their use in grafting, and second, by their use in pruning.

In order to set this matter in its true light, it will be necessary to advert to the true *principle of vitality* and *longevity* in all trees, and to the effects of *soil* and *sun* on hereditary *diseases* and *diseased growth.*

1. *Principles of vitality and longevity.*—After all that has been said on the subject, I cannot resist the impression, that the essential elements of the highest degree of both vital power and of longevity, are placed by nature in the seed, and the seed alone. It alone of all other parts of the tree, contains within itself, in the highest degree of perfection, all parts of the embryo tree, trunk, roots and top; and these, when produced from a healthy seed, have both a vital power and a capacity for longevity which can never be produced from any other source. By vitality and vital power, I mean tendency to a vigorous and healthy growth, and by power or capacity of longevity, I mean tendency to a protracted continuance of that healthful growth through the longest series of years of which the tree is, in its own nature, capable of living.

The facts which might be adduced in proof of this position, are quite too numerous and too well known to need specification.

The highest power of vitality in a tree itself, produced from the seed, is, usually, at least, the neck of the tree, as some physiologists have called it, or precisely that point where the seed lies when it begins to throw its top upward and its root downward. At this point the tree manifests its vital power by throwing up vigorous suckers or shoots whenever its life is endangered above ground, and often from unknown causes. So much does the vital power of this part of the tree exceed all other parts, that it is a fact well known to root grafters in the west, that one inch of root near this point is as effective for their purpose, as twice that length of root remote from this vital point. Hence, too, suckers torn from old trees near this point, manifest a constant tendency to prolong a lacerated and diseased vitality by throwing out roots and throwing up suckers all around it. It is, in fact, an effort of nature to heal a mortal wound, analogous to the fabled story of the serpent's heads of old.

The vital power of the seedling tree diminishes as you recede from this point, both in distance and in growth—both upwards and downwards, and probably its power of longevity too. That is, one inch of root, or a single bud, taken from an old tree, in which the original vital force of the seed is expanded into long roots and thousands of buds, have each less vital power and less capacity of longevity, than the same length of root and the same kind of bud taken from a young tree, the original vital force of whose seed has been expanded only in a few buds and a few roots; and the more intimate their connection with this vital point, the neck of the tree, the greater the vital power, and vice versa. This, in case of the root, is determined mainly by simple distance, and in case of the top, by distance combined with vigor of yearly growth. That any other part of a tree could be forced to exhibit the same laws and the same power of vitality and longevity as the seed does, I cannot believe.

An eminent writer has recently attempted to prove, that the bud is as perfect an organ of reproduction as the seed, and that it has in itself all the appropriate elements and organic forces and powers of the seed itself—indeed that it is nothing but a seed "prepared for one set of circumstances," while the real seed differs from it only by being prepared for different circumstances. Now what proof is there of all this? Why, simply, that a bud can, by art, be made to grow and form a tree. But has it ever been proved that it can, under any circumstances, be made to exhibit the same power of either vitality or longevity as a seed from the same tree? By analogous principles of art, a slip from a man's forehead may be turned down and made to grow into a nose: and yet foreheads are not noses prepared for a "peculiar set of circumstances," nor yet nature's seed for noses; and if all noses were thus produced by art, it is probable that diseased noses would soon become as common as diseased trees now are. Facts are abundant to prove, that the proper natural vital force and power of longevity of a given tree is not found in any bud or scion, or in any other part of the tree, whatever, but that special part prepared by nature for the express purpose of continuing the vitality and longevity of the species. And there are, also, enough facts to suggest, at least, that this original vital force in the seed diffuses itself with the growth of the tree in the manner above indicated, and to render this view worthy of the careful observation and attention of all naturalists and practical fruit growers. For if these principles be correct, it follows, of course, that every time a seedling tree is divided or mutilated, either in top or root, its natural life is also, all other things being

equal, proportionally divided, mutilated or shortened. On these principles, if the top of a tree be wholly cut off, a sprout from the root or neck can possess only a part of the natural vital force or longevity appropriate to that tree: and although obvious considerations will make the new shoot grow more vigorously for a time, it will finally die sooner than the originally unharmed tree would have done in its place. But if we take nothing but a scion or a piece of root, or a single bud from a tree, we have only a small part of the original vital force of the seed; and this State is, at this moment, full of facts from one end to the other, to show that the actual longevity is, in all such cases, greatly diminished. The principle here maintained is, that *every time the seedling tree is divided, whether in root or top, its natural longevity and appropriate vital force, derived from the seed, is proportionally divided, abstracted and shortened;* and we fully believe that some of the worst forms of hereditary, and also of annual diseases, flow from a succession of such mutilations through a series of generations, or are produced by an effort of nature to resist and repair this interference with her natural processes, as we shall hereafter show.

In view of these positions, two things should be remembered: first, that there are trees, vines and shrubs, the natural vital force of whose roots, necks or trunks produced from seed, is so great, that they for ages continue to throw up shoots, and thus continue their natural life to so great a length of time, that even if the same general law holds in reference to them, it can never probably be ascertained, or if ascertained, would be of no practical importance. When a shrub, or vine, or tree, has the power of continuing its natural life, or of unfolding the vital force of the original seed by shoots, layers, or otherwise, through hundreds and thousands of years, two things are true: one generation of men do not live long enough to ascertain whether the seedlings of such plants will outlive the cuttings or layers taken from them, though in all probability they would; and second, the shortened and mutilated life is long enough for all practical purposes at least, whatever may be true in theory. It is not only difficult but useless to study the laws of longevity of such plants, as for example are the grape, currant, and many of our forest trees and shrubs. But when the natural life of a valuable seed does not exceed fifty or a hundred years, it becomes of the highest importance to the cultivator to ascertain the laws and principles upon which that life is necessarily diminished and shortened, especially if such shortening is liable to be great, and also attended by incurable hereditary and chronic diseases throughout the entire life of many of the thus mutilated trees.

Suppose, for example, the natural life of the apple seedling one hundred years. Suppose that the most careful grafting or budding into an entire seedling stock still diminishes the natural life to seventy-five years on an average: this, considering the importance of the supposed change, is tolerable. But suppose that by a further mutilation and division of a seedling root into some twenty pieces, the natural vital powers of the original seed is divided into as many parts, giving an average longevity of only twenty years, or even far less than that; this, surely, is intolerable; and yet this intolerable condition of things is the real condition of one half the best apples, and almost all the best pairs in this State. A good judge could tell how an orchard fifteen years old, in this State, was promulgated and grafted, simply by riding past it. Trees made from buds alone, will die out in large quantities the first five years—those made of slips of root two or three inches long, will be generally gone in fifteen or twenty years, while those put upon larger pieces, or upon the tap-root of a seedling, or upon a sprout from the neck of a vigorous tree, will rarely live over twenty-five years.

Multitudes of apple trees in this vicinity, which have been mutilated and grafted on sprouts and pieces of roots, through several generations of trees, have come into the same state that most of our pears, so treated, have already attained, viz: a condition of either hereditary or chronic disease, which exposes them to perish suddenly, just as the pear does, even when ten or twelve inches through, by what is called the "sun-blight," "frozen sap-blight," &c., &c, and if the same processes of grafting should be continued as long upon the apple as they have been upon the pear, I cannot doubt that it will become as difficult to make our grafted apples live to twenty years of age, as it is now to make our pears live that length of time.

So far as facts have been made public, I should suppose that the practical results of this mutilation in grafting, were developing their true nature more rapidly here than in any other part of the Union, or at least far more strikingly: and this, too, would be naturally expected; for in a soil so excessively rich as this, all trees come to maturity and decay more rapidly than on a poor soil. This is true of almost all our forest trees. Moreover a rich soil operates to hasten the development of chronic and hereditary diseases in trees, by the same law that high living tends

to the same result in the human family. It seems to be a law of universal nature, that plethora and surfeit tend sometimes to produce, that is, to originate disease, while it always tends to hasten the development of all diseased tendencies, while a barely sufficient diet often postpones the fatal hour both in the animal and vegetable world. Starvation also, doubtless, produces the same results as plethora. Hence wrong management and diseased tendencies may be expected to show their final result soonest on the richest and on the poorest soils—that is where there is the greatest and the smallest amount of the appropriate food for a given plant.

In addition to the above considerations respecting the vitality of seeds and the effect of soil, &c, it ought not to be forgotten that nature has appointed a certain equilibrium between the root and the top, and also between the length of the trunk and the top, which cannot be disturbed with impunity. There are certain laws, also, connecting the shape of the top with that of the root, of the greatest importance to the nurseryman—all of which are more or less disturbed and thwarted by the existing absurd modes of grafting and pruning. In my next paper I shall attempt to apply the above principles to the well known blight in the pear and the cherry, in the west, and the present wretched condition of many of our apple orchards. —*Horticulturist.*

Cheese Dairies.

THE following extracts are made from a Report to the New York State Agricultural Society, kindly forwarded by our friend B. P. Johnson, the Secretary.—ED.

THE manufacture of cheese both for the domestic and foreign markets, is increasing rapidly in this State, and is becoming a source of wealth to our farmers, and adds much to the income from our internal channels of communication. The importance then of securing the largest yield, and a superior article for market, is apparent. From all the means of information which has reached the committee, they are satisfied that an improvement is making in each of these particulars, though slowly.

First in importance in the management of a dairy, after the necessary buildings are prepared, which should be of such dimensions as to afford room for all the operations without inconvenience, is cleanliness in every thing connected with it. "Cleanliness may be said to be not only necessary in dairy husbandry, but to be the foundation of it, and the most indispensable part of good management. A farmer may be in possession of the most valuable breed of cows, and these may be fed on the richest pastures, but unless cleanliness prevail in the dairy, his butter or his cheese will never stand high in general estimation."

The increasing importance of the dairy interest demands from this Society all the encouragement they can give to this branch of agricultural industry. From our location, and the peculiar adaptation of most of our State to the raising of stock and for dairy purposes, it is becoming a question of deep interest to our farmers, in what manner their farms shall be cultivated. The great emporium of our own State, and the numerous towns in New England, studded with manufactories, are opening increasing markets for our beef, butter and cheese, and the experience of the last few years has abundantly proved, that the farms devoted to the dairy have yielded a larger return than any other, when they have been managed with care and economy. The competition from the western States in our grain markets, has tended to render the products of the grain farms somewhat less lucrative than formerly. Our soil and climate are well adapted to Indian corn, and there is no more valuable food for fattening animals, it is believed, than this, and its usefulness for soiling when sown broadcast or in drills, is unsurpassed. We would, therefore, call the attention of our farmers to the importance of directing their energies so as to secure the best returns from their investments. Our rail-roads, canals, and plank roads, are opening speedy and safe channels of communications to the seaboard; and when the rail-roads now in progress shall be completed, two unbroken channels of communication from Lakes Erie and Ontario to the ocean will be secured. The cattle and the products of the dairy will then find a ready, and it is hoped, eventually a cheap transit to the market at all seasons. How important, then, that in these departments, in which for a long time to come, there will a demand exist at home and abroad, for all our supply, vigorous efforts should be made to bring our land, especially in the eastern, central, and southern counties into a suitable condition for grazing.

The selection of cows best suited to the dairy must be attended to, if success is expected. Experience has proved that the milk of some cows has a much thicker consistence and richer quality than others, and he that would be successful in securing a large yield from his dairy, must give attention to this; and when he has succeeded in obtaining cows suited to his purpose, care should be taken to breed from these, so as to continue the same superiority in his stock.

In relation to the selection of cows for the dairy, the description given by Mr. Youatt, in his Treatise on Cattle, may be useful, and the same points substantially are given in various other treatises as regards cows suited to the dairy.

"The milch cow should have a long, thin head, with a brisk but placid eye, be thin and hollow in the neck, narrow in the breast and point of the shoulder, and altogether light in the fore quarter, but wide in the loins, with little dew lap, and neither too full fleshed along the chine, nor showing in any part an indication to put on much fat. The udder should especially be large, round and full, with the milk veins protruding, yet thin skinned, but not hanging loose or tending very far behind. The teats should also stand square, all pointing out at equal distances, and of the same size; and although neither very large nor thick towards the udder, yet long and tapering to a point. A cow with a large head, and high back bone, a small udder and teats, and drawn up in the belly, will, beyond all doubt, be found a bad milker.

"Besides these qualifications, a great point to be considered is the temper; for kindly cows will not only give far less trouble in their management than those of an unruly disposition, but are commonly observed to have a more copious flow of milk, as well as to part with it more readily."

Experiments should be made by those who are engaged in the dairy business, as to the value of their cows for dairy purposes. Let them be fed with the same food, measure its quantity, as well as that of the milk from each, and when used separately, it will be no difficult matter to determine which is the most profitable. This is all important to success in this business.

In regard to the management of cows, we select from British Husbandry, vol. 2nd, page 399, some suggestions that are worthy of consideration:

"Experience has very decidedly shown, that no food is comparable to that of good natural pasture for milch cows; for not only does it yield a greater quantity of milk, but the flavour of grass butter may always be distinguished by its superior richness and delicacy from that which has been made from milk produced from soiling in the house, and its quality may be injuriously effected even by the application of manure to the land. Common salt given in moderate quantities to cows, increases the quantity and improves the quality of the milk. Milch cows should at all times be maintained not only in good condition, but in what may be termed a "milky habit," and for this purpose during winter, roots or grain should be given, so as to prepare them well for the opening of the pastures."

"The *act of milking* is one that requires great caution; for if it be not carefully and properly done, the quantity will be considerably diminished, and the quality also will be inferior, as not only is the first of the milk the poorest, but it gradually becomes richer, until the last drainings of the udder, or what is commonly termed the 'strippings.' It should, therefore, be thoroughly drawn from the cow, both to secure this latter portion and to ensure the continuance of the usual supply; for if any be allowed to remain in the udder, she yields a less quantity at the next milking—a fact which has been accounted for by supposing that the portion left in the udder is absorbed into the system, and that nature generates no more than to supply the waste of what has been taken away. The greatest care therefore should be paid, to have them clean milked. They should also be treated with great gentleness, and soothed by mild usage, especially when young and ticklish, for they never let their milk down pleasantly to a person whom they dread or dislike. If the paps are sore or tender, they ought to be fomented with warm water before milking, and, indeed, if the operation of milking be nicely performed, they should each time be clean washed, but this, we are sorry to say, is too often neglected.

"The choice of those who perform the duties of the dairy should never be entrusted but to persons in whose unremitting care and gentleness the utmost confidence can be reposed. All its operations should be conducted with the most punctual regularity, and with such extreme cleanliness that no speck or taint shall be discoverable either about the interior of the house or the utensils. Throughout Ireland, Scotland, and the north of England, it is invariably left to women, and were men to be employed, they would consider themselves degraded; but in the southern counties, great hulking fellows may be seen seated at the udder, and handling the teats with their huge fists, as if they had the delicate fingers of a girl. Females are in every way competent to the work, to which they are better suited by their delicacy and tenderness than men; it is, indeed, a truly feminine employment, and to their hands it should be left.

"The nature of the land, the oldness of the pasture, the age of the stock, and the state of the season, have each a separate influence upon the quantity and quality of the milk; thus the milk given by cows in autumn and winter is decidedly richer than that produced in spring and summer, and

yields the greatest quantity of butter in those months, with the least cheese; and therefore, no general average can be made with such accuracy as to merit confidence. The same remark will apply with even greater force to the produce of butter and cheese; for, besides these circumstances, cows even of the same breed yield a different amount from equal quantities of milk. Generally speaking, a fair annual product of either from each cow in good condition, may be considered as about 160 to 180 lbs. of butter of superior quality, and 350 to 400 lbs. of whole milk cheese, with a small quantity of whey butter."

"On proper attention to the *construction of the dairy house*, materially depends the perfect manufacture of cheese and butter, and nothing should be spared in rendering it as complete in accommodation as the nature and size of the farm will admit. The apartments which are peculiarly appropriate to dairy husbandry are, one for milk, another for scalding, pressing and salting cheese, and a third for the implements, and a store room, in cheese dairies, which may be placed under the roof. The building should be apart, —though convenient to the farm-yard,—from any immediate contact with the odor of the farm-yard, or other impurity, as well as from any pond of stagnant water, as nothing more readily acquires an unpleasant taste or smell than milk or cream. The site should be such as to be as little as possible affected by extremes of heat or cold, as a uniform temperature is all-important. The floors should be raised a few inches above the level of the outer ground, with slanting gutters to carry off the water used in washing, which is frequently done, both for cleanliness and coolness. On this, it should be observed, that every particle of milk that happens to be spilled on the floor should be carefully washed off, or its sourness will impart an unpleasant odor, which will infect the entire house; and it is extremely material that the building should be kept as dry as possible, as damp is also highly prejudicial to the operations of the dairy.

"The utensils of the dairy are familiar to all engaged in the business. The form of these utensils is matter of secondary importance, in comparison with that of *extreme cleanliness*, which is the *chief requisite* in all the operations of the dairy; and those vessels which can be the most easily cleansed, are the best to be employed. The dairy maid should be a careful, cleanly person, and the floor of the dairy should be kept dry, for water thrown down in hot weather will assuredly rise again in steam, and affect the milk with its humidity. The vessels used for holding the milk, and all the dairy utensils, after being first washed thoroughly clean, should then be rinsed a first and second time with sweet milk: "a cruet, washed ever so clean with water, will cause vinegar to become dreggy, but if rinsed with a little of the same, will always appear limpid and clear."

"The main point is *the superintendence of the dairy;* for unless that can be confided to the mistress of the family, and she be in every respect competent to conduct it with judgment, regularity, and that persevering industry which is actuated by motives of self interest, it will be only rarely found to afford any material profit. The making of butter and of cheese are also essentially different; for although every dairywoman ought to be well acquainted with the former, yet, excepting in the United Kingdom and in Holland, no two districts in any other part of Europe manufacture cheese of a similar flavor. This extraordinary difference has been attributed to the nature of the pasture on which the cows are fed; and this, doubtless, must have some effect, for experiments have been made by experienced persons brought from places where they have regularly lived, and well acquainted with the mode of making the peculiar quality there known, and yet when moved to another spot, they have not succeeded."

Milk.—"The chief component parts of milk are those, which, when separated, are known as forming butter and cheese; the residue of which is called whey. These are distinguished by scientific persons as the *butyraceous*, or oily substance producing cream, of which butter is composed; the *caseous* matter of which cheese is formed, and *scrum* or whey:

Cream forming	4.5 parts,	of 100.
Cheese,	3.5 do.	
Wey,	92. do.	

This can only convey a general idea of the component parts, for they must necessarily vary according to the quality of the milk.

The analysis of skimmed cows' milk is stated by chemists to be:

Water,	918.75 parts,	of 1000
Cheese with a trace of butter,	38. do.	
Sugar of milk,	35. do.	
Muriate of potash,	1.70 do.	
Phosphate of potash,	0.25 do.	
Lactic acid with acetate of potash	6. do.	
Earthy phosphates,	0.30 do.	

"Instruments have been invented, called lactometers, for ascertaining the richness of

milk in nearly the same manner as that employed for trying the strength of spirits. The difference in the quality of milk between particular cows may thus be determined, but it does not show whether the caseous or butyraceous matter predominates."

"The making of butter appears to have been known from the earliest history of the island, for when invaded by Julius Cæsar it was a common food of the Islanders; but the art of making cheese they learned from their conquerors. It seems extraordinary, that a people in possession of large herds of kine, could be ignorant of the art of making some sort of cheese from the sour curd with which they must have been acquainted; it is indeed described in many ancient authors; yet no mention is there made of the rennet with which it is now formed, nor is it known when the use of that article was first discovered."

"The mode of making cheese, though in the main points apparently the same, yet is subject to more variety of minor details in the practice, than that of anything formed of one material; and thus many different qualities are brought to market, each bearing some distinct character of its own. That many of those kinds, which are by connoisseurs thought indifferent, might, by other management be more nearly assimilated to the superior sorts, there can be little doubt; these peculiarities have, in many districts, attached a certain degree of value to their flavor, while in others it would seem to be imparted by the natural grasses on the soil. This applies more especially to Cheshire than to any other county; for although imitations of different districts have been, in some cases, successfully made in others, yet in no trial has cheese of true Cheshire flavor been produced when made from cows fed on other soils. Whether justly or not, it has been attributed to the abundance of saline particles in the earth, as evinced by the numerous salt springs which abound throughout a large portion of that county, and is so old a remark, that Fuller, in his 'Worthies,' when speaking of the county, says: 'It doth afforde the best cheese for quantitie and qualitie, and yet the cows are not, as in other countries, housed in the winter. Some essaied in vain to make the like in other places, thoughe from thence they fetched their kine, and dairie maids; it seems they should have fetched their ground too, wherein is surelie some occult excellence in this kind, or else so good cheese will not be made.' There must indeed be some truth in the observation, for it is well known that where brine springs most abound, the cheese is ever esteemed to be of superior quality. Whatever may be the foundation of the fact, the quality is, however, always better when the cows are pastured during the summer months.

"Although cheese may be made from the curd, which has been formed by the coagulation of the milk when it turns sour, yet when thus obtained it is hard and ill flavoured; many have therefore been found to curdle it with 'rennet,' which is made from the gastric juice of animals, but more especially from that found in the maws or stomachs of sucking calves, that have been fed entirely on milk."

Niagara Falls Suspension Bridge.

It is probably known to most of our readers who take an interest in such matters, that the Canada people have under contract and now in the course of construction, a railway, which is intended for high speed and heavy freight, from Windsor on the East shore of Detroit river, about a mile below the Falls. The distance is 228 miles.

From the eastern shore of Niagara, opposite the terminus of the Canada railway, a railway through Lockport along the Erie Canal to Rochester, is in the course of construction. Both of these roads, it is said, will soon be finished. They are, however, separated by the mighty Niagara, which runs between them in a gorge more than two hundred feet deep, with nearly perpendicular banks, and its waters are entirely impassable, owing to rapids tumbling over a rocky bottom on a great descent through which no water-craft ever attempted to cross.

To remedy this difficulty, some enterprising gentlemen of Western New York and Canada, have set themselves about spanning the river from rail-road to rail-road with a bridge, to be suspended on wire cables, of sufficient strength to cross rail-road trains, as well as carriages and horses, and the work is already under way, under the superintendence of Charles Ellet, Jr., engineer. To effect this, they are erecting two towers on each side of the river, built of substantial masonry, about sixty feet high above the rocky banks. Over the tops of these towers sixteen wire cables, four inches in diameter each, are to be stretched and anchored into the rock and fastened in the rear of the towers. These cables will weigh twenty-seven tons each, and will possess a strength equal to the support of six thousand five hundred tons weight.

From these cables thus extending across the river, the floor of the bridge is to be suspended on a level with the brow of the banks; and cars, carriages and passengers will enter upon the floor of the bridge between the tow-

ers. There will be two footways on the bridge, of four feet width each; two carriageways of seven and a half feet each, and a rail-road track.

The floor of the bridge will be two hundred and thirty feet above the water, and in full view of the Falls above and the whirlpool below, and the bed of the river between; thus adding artificial sublimity to nature's grandeur, and making each contribute to the other. The expense of this bridge will be about two hundred thousand dollars, and the grandeur of the work, and the attractions it will present at this great resort of the curious and the fashionable, would seem to form sufficient inducement for the outlay.

But such was not the inducement. The gentlemen who have undertaken it—like most of our enterprising countrymen—are practical and utilitarian. Lakes Erie and Ontario are about thirty-six miles apart—joined by the noble Niagara, passable any time at only a few points, and sometimes passable nowhere between the two lakes on account of floating ice. On both sides of the river is a thick population of Anglo-Saxons, carrying on constant intercourse. To facilitate this, and annex the two countries, and join their railways, they have set themselves to erecting this stupendous and seemingly impracticable structure. Western New York desires to avail herself of the transit of the Canada trade through the State and take its advantages. Canada is desirous of giving the Western States a passage through her dominions and to avail herself of whatever advantages may be gained by it.

Michigan, Illinois and Wisconsin, desire a winter trade, and are restless at being locked up so many months in the year by ice from the Atlantic; and they desire also to have a shorter, quicker, and safer passage to the East than round through Lake Erie. And the farmers in Canada and the interior of the upper States are anxious to send down their produce, and would not like to be stopped by this impassable gorge in the river. Our readers will therefore see that the public interest of vast multitudes is very deeply concerned in this enterprise, and though presenting great inducements to the curious and fanciful, it is, nevertheless, a work of vast utility, in which the benefit of millions is concerned.

The prime mover of this magnificent display of civil engineering and combination of mechanical powers, is our worthy fellow-citizen Lot Clark, Esq., heretofore distinguished in the public annals of his country; but certain now to be more widely and longer known by this momentous enterprise.

This suspension bridge seems worthy to stand in view of that stupendous display of the grandeur of nature, the Falls of Niagara; the sight of which so well rewards the pilgrims who come annually from all quarters of the world to contemplate and admire it.

No reader will need to be reminded of the inseparable connection which every where exists between the *Agriculture* of a country, and its *roads and bridges*, which serve—according as they are more or less perfect—to facilitate and cheapen transportation and exchanges between rural and manufacturing industry.—*Skinner's Farmers' Library.*

From the American Agriculturist.

Cultivation of Potatoes.

The cultivation of potatoes has become so precarious for the last four or five years, that it may be of service to publish an account of experiments, even if they have proved unsuccessful. I will therefore state my experience, such as it is, with a hope that it will be of more or less benefit to those engaged in the same calling as myself.

I have planted on a variety of soils, including a heavy clayey loam, gravel, black vegetable earth, loam, rich in animal and vegetable matter, and on a light, sandy loam. In the latter, I have always succeeded in raising sound potatoes, and I consider such a soil the most certain of producing a sound healthy crop.

In 1845, I planted my potatoes in April, May, June and July. Those planted in May, I found succeeded best; and the vines of those planted late, decayed early in September, soon after the young tubers began to form.

On the 15th of May, 1846, I planted an acre of potatoes, on a moist loam, suitable for growing Indian corn. One part of the field I manured with newly slacked lime; one with wood ashes; one with charcoal; one with bone-dust; one with poudrette; and another part with plaster, lime, ashes, and salt, mixed. The result was, that the largest yield and the least rot, occurred where lime only was applied, at the time of planting, in the hill.

Observing that the two rows of potatoes next to the corn, which occupied a part of the last named field, were entirely free from disease, and produced well, last season, (1847) I planted a lot, alternately, with two rows of corn, and two rows of potatoes; also, a small patch exclusively with potatoes, in the same field, manuring the whole with lime in the

hill. Those produced between the corn were all sound, and continue so to the present time, and were abundant in their yield; whereas, the others, planted by themselves, were more or less affected with disease. A portion of the ground was subsoiled to the depth of 16 inches. On this part, the produce was one-third greater.

From my experience, as above, I would recommend potatoes to be planted among Indian corn, before the 15th of May, in a light, sandy loam, or some other dry soil, subsoiled sixteen inches deep, with a gill of newly slacked lime, applied to each hill.

D.

Orange co., N. Y., March 27th, 1848.

For the Farmers' Cabinet.

Osage Orange.

Mr. Editor,—By inserting answers to the following queries you will oblige some of your subscribers.

1st. Is the Osage orange preferable to the common thorn for hedges? And if so, why?

2nd. How many years must elapse from the time of planting the seed, before it will make a sufficient fence?

3rd. Is it liable to be attacked by insects?

4th. Does it impoverish the soil any more than the thorn?

5th. Does its roots extend so as to offer an impediment to the plough?

6th. Do suckers arise from the roots, or does the seed germinate and grow where it falls?

7th. What is the process employed in raising it from the seed?

8th. Where can the seed or plants be procured, and at what price? And lastly,—where is there a *complete* hedge of the kind to be seen?

W. D. S.

To the above queries we have been kindly furnished with the following replies, from a friend who is familiar with the subject.—Ed.

1st. The Osage orange is held to be preferable to the common Hawthorn for hedge, on account of its being better adapted to our climate, and because the spines or thorns are more formidable.

2nd. Under proper management a pretty good hedge of the Osage orange might be produced from seed or cuttings, in eight years.

3rd. It has not been known to be obnoxious to insects.

4th. From its proneness to running, it might be inferred that it was a considerable consumer of soil, but have heard no complaints against it on this score.

5th. The roots extend considerably from the line of the hedge through the adjacent ground, and of course, will, to a certain degree, impede the plough or spade when coming in contact with them.

6th. Suckers will spring up of course from the portions of the roots cut asunder by the plough or spade, if left in the ground covered to a depth favourable to their sprouting. A well trimmed hedge could hardly be expected to produce seed.

7th. The process of raising from the seed is one, we suppose, similar to that generally practiced,—soaking the seed a short time before planting, covering up one to two inches in fine mould, in a frame, or in open ground, having a south or south-eastern exposure.

8th. Most of the nurserymen of Philadelphia can supply quicks or sets—the price varies as to size, and can, it is said, be had at from $10 to $15 a thousand. Mr. Landreth may have a supply of the seed; of this, or the price it is held at, we can give no certain information.

James Gowen, of Mount Airy, is said to have several hedges of the Osage orange upon his farm, and doubtless would take pleasure in affording an opportunity to those who take an interest in such matters, to examine the hedges and judge of their utility.

J.

Remedy against Moths.

It is an old custom with some housewives to throw into their drawers every year a number of fir cones, under the idea that their strong reisonous smell might keep away the moth. Now, as the odor of these cones is due to turpentine, it occurred to Reaumur to try the effect of this volatile liquid. He rubbed one side of a piece of cloth with turpentine, and put some moths on the other; the next morning they were all dead, and strange to say, they had all voluntarily abandoned their sheaths. On smearing some paper slightly with the oil, and putting this into a bottle with some of the grubs, the weakest were immediately killed; the most vigorous struggled violently for two or three hours, quitted their sheaths and died in convulsions. It was soon abundantly evident that the vapor of oil of turpentine acts as a terrible poison to the grubs. Perhaps it may be said that even this remedy is worse than the disease, but, as Reaumur justly observes, we keep away from a newly painted room, or leave off for a few days a coat from which stains have been removed by turpentine, why therefore, can we not once a year, keep away a day or two from rooms that have been fumigated with turpentine?

It is, however, surprising how small a quantity of turpentine is required; a small piece of paper or linen just moistened therewith and put into the wardrobe or drawer a single day, two or three times a year, is a sufficient preservation against moths. A small quantity of turpentine, dissolved in a little spirits of wine,—the vapor of which is also fatal to the moth—will entirely remove the offensive odor, and yet be a sufficient preservative. The fumes of burning paper, wool, linen, feathers, and of leather, are also effectual, for the insects perish in a very thick smoke, but the most effectual smoke is that of tobacco. A coat smelling but slightly of tobacco, is sufficient to preserve a whole drawer.

The vapor of turpentine and the smoke of tobacco are also effectual in driving away spiders, ants, ear wigs, bugs, and fleas. The latter tormentors are so abundant on the continent, as frequently to deprive the weary traveller of his night's rest. If he would provide himself with a phial containing turpentine and spirits of wine in equal parts, and would sprinkle a few drops over the sheets and coverlid before retiring to rest, he would probably have reason to be grateful for the hint. Foreigners are in the habit of smoking in their bedrooms—a habit which excites surprise and disgust in England; it will now be seen, however, that there is reason for the practice.—*Sharpe's London Magazine.*

From the American Agriculturist.

Inducements for Immigrants on James River.

Notwithstanding the number of immigrants from the north, who have located themselves in various parts of Virginia, and the many who have recently visited the tide-water region of James river, few or none of them have, as yet, become purchasers or settlers; yet a more beautiful and a more healthful country I have never seen. Nature has here been prodigal of her favours, in affording a good natural soil, an abundance of marl, and excellent water. That noble river offers ample facilities to markets, for the sale of produce of every description, and to the immigrant it presents many inducements. Lands can here be bought *cheap*, and of the best quality. It is true, much of the land has been worn out, or exhausted, by improvident and injudicious cropping—everything taken off, and nothing returned; but there are many noble exceptions to this unfavourable state of things. Take, for instance, the Brandon, Coggins' Point, Shirley, Westover, Weyanoke, and other estates. These farms, I believe, have been, at a comparatively recent date, as unproductive as much of the impoverished lands in their several neighbourhoods; and I hazard nothing in stating, that almost every acre of land on the margin of the river could easily and cheaply be made to yield an equal or a larger return of crops than these farms are now doing.

On the estate which I now occupy, seven or eight years ago, six bushels of wheat, and from ten to twelve bushels of corn, would have been considered a high average crop per acre; but last year 540 acres yielded an average crop of 23½ bushels per acre, of wheat, and 520 acres of corn produced an average of not less than 38 bushels per acre. These returns present a handsome and encouraging increase, which has been brought about with comparatively little outlay, under a five-course rotation of crops; that is, corn, wheat, clover, wheat and clover, with the use of lime, gypsum, and the careful accumulation and application of manures made on the estate; and under an improved system of farming, there is no doubt but these returns might be doubled.

Your correspondent, "A New Yorker," I hope, will be able to extend his observations, and present your readers with his views of the capacities of this delightful region, and the inducements therein offered to immigrants. As above indicated, I consider this a healthy region of country, as a residence in it, of nearly fourteen years, enables me to say so confidently. I moved here with my family almost directly from Scotland, and together with my children, have enjoyed an almost uninterrupted continuance of good health up to this time.

I have heard several gentlemen from the Northern States, who have visited this part of Virginia, express fears that the *working farmer and mechanic*, together with their wives and daughters, would be considered as holding a lower position in society than they had been accustomed in their own States, and be so treated by the native Virginians; but from my personal observation and experience, these fears do the *ladies and gentlemen* of the Old Dominion injustice; for the industrious, intelligent, and respectable working farmer or mechanic, is sure to meet with a cordial and hearty welcome from every Virginian whose favourable opinion is worth having. A. Nicol.

Sandy Point, Charles City, Va.
March 7th, 1848.

It is calculated that steam power effects in England, as much work as could be done by three hundred millions of men.

Scolding.—It has neither reason, religion, common sense, or experience to recommend it; while there are reasons many and mighty to justify its total and immediate abolition. It sours the temper of the children; so that one thorough scolding prepares the way for two or three more. It sours your temper, provided it is sweet, which is a question, if you are prone to scold; and thus the more you scold, the more you will have to scold, because you have become *crosser*, and your children likewise. Scolding alienates the hearts of your children. Depend upon it, they cannot love you as well after you have *be-rated* them as they did before. You may reproach them with firmness and decision, you may punish them with severity, adequate to the nature of their offences, and they will feel the justice of your conduct, and love you notwithstanding all. But they hate scolding. It stirs up the bad blood, while it discloses your weakness, and lowers you in their esteem. Especially at night, when they are about to retire, their hearts should be melted and moulded with voices of kindness, that they may go to their slumbers with thoughts of love stealing around their souls, and whispering peace.

The Grain Trade of the United States.

Growth—Consumption—and Supply.

The Commissioner of Patents, says Bicknell's Reporter, has prepared some valuable tables in relation to the grain trade of the United States. He has divided the subject under three heads—first, the production in 1847—second, the consumption and the surplus—and third, the disposition of that surplus. According to his estimate, the whole crop was as follows:

Breadstuffs:—			
Indian corn,	bu.	539,350,000	
Wheat,	"	114,245,500	
Rye,	"	29,222,700	
Buckwheat,	"	11,673,200	
			694,491,400
Grain not used for Bread:—			
Oats,	"	167,867,000	
Barley,	"	5,649,000	
			173,516,000
Total grain,			868,007,400
Other articles of Food:—			
Potatoes,	bu.	100,950,000	
Beans and peas,	"	50,000,000	
Rice,	pounds	103,640,390	
Estimated population of the U. States,		20,746,400	

The usual computation of statistics is, that five bushels of wheat are consumed by each individual; but inasmuch as in this country, animal food is more largely used than in any other, while Indian corn is substituted for wheat by a large class, and especially the slave population, it is assumed that an estimate of three bushels of wheat each for the entire population, or three and a half each, excluding slaves, would be about correct. The estimate for Indian corn is five bushels each, rye half a bushel, buckwheat a quarter of a bushel. This gives an aggregate of eight and three-quarters of grain for each inhabitant. An allowance is also made for animals —say five bushels each of corn for horses and swine, one bushel per head for neat cattle, and one quarter of a bushel for sheep. Poultry, it is supposed, consumes about 5,000,000 bushels of corn during the year.

The allowance for seed is 6,000,000 bushels for corn; for wheat, one bushel in ten; rye, one in eight; buckwheat, one in sixteen; and oats, one in twenty.

For distilling, the estimate is 25,000,000 bushels of corn, and 10,000,000 rye.

These premises lead to the following conclusions relative to the surplus:—

			Surplus.
Wheat.			
Production, 1847.	bu.	114,245,500	
Seed,	11,424,550		
Consumption,	62,239,200—73,663,750—		40,581,750
Corn.			
Production,	bu	539,350,000	
Seed,	6,000,000		
Consumption,	103,732,000		
Do. by animals,	230,963,096		
Distilling, &c.	25,000,000—365,695,096—		173,654,904
Rye.			
Production,	bu.	29,222,700	
Seed,	3,652,587		
Consumption,	10,374,200		
Distilling,	10,000,000——24,025,787——		5,196,913
Buckwheat.			
Production,	bu.	11,674,278	
Seed,	723,343		
Consumption,	6,000,000——6,723,343——		4,950,935
Total,		bu.	224,384,502

With regard to the disposition of the surplus, the Commissioner says that the principal corn-purchasing countries of the world are Great Britain, France, Holland, the West India islands, British American colonies, Brazil and South America generally. They annually require about 33,000.000 bushels of wheat, exclusive of other grain, as follows:

	Bushels.
Great Britain,	20,000,000
France,	5,000,000
West Indies generally,	2,500,000
British American Colonies,	2,500,000
North America generally,	350,000
South America generally,	1,900,000
Holland,	1,000,000
Total,	33,250,000

This is the estimate for the demand under ordinary circumstances. Of course a plentiful harvest will diminish it, while on the other hand a short harvest, or destruction of some crop like the potatoe will greatly increase it. In 1847 it was greatly increased by the latter cause.

If the above estimate, and that which pre-

cedes it, are correct, the surplus wheat crop of the United States is more than sufficient to supply the ordinary deficiencies of all that portion of the world which is likely, under any circumstances, to require it.

The principal grain-exporting countries in Europe appear to be Russia, Prussia, Denmark and Sicily; in Asia, Syria; in Africa, Egypt. Two estimates of the exports of these countries are given in the report. The first was prepared for the London Mark Lane Express, in April of last year, and includes—as we understand it—all descriptions of grain.

Countries.	*Bushels.*
Russia on the Black Sea,	16,000,000
" " Danube,	12,000,000
" " Northern Ports,	4,000,000
Egypt and Syria,	4,000,000
Prussian Pomerania and Danish ports on the Baltic,	1,600,000
	37,600,000

Mr. Burk infers that the whole quantity of wheat for exportation, by the grain exporting countries of the world, excluding the United States, is not far from 20,000,000 bushels, and that the great rival of the United States is Russia.

She produces the most and sells it the cheapest, certainly at the port of Odessa on the Black Sea. She has, however, but few ports and her transportations from the interior are not so great as those possessed by the United States. It is doubtful, too, whether Russia can produce grain cheaper than the Western States of the American Union. From inquiries submitted during the last summer, it appears that the cost of growing wheat in the United States is as follows:

In New Hampshire,	$1 10 per bushel.
New York, Western,	64 "
Pennsylvania,	60 "
Ohio, Northern,	50 "
Michigan,	28 to 67½ "
Indiana,	25 to 35 "

These sums include every expense—interest on the value of the land being one item—which attends the cultivation of wheat, from the preparation of the land to thrashing and storing; of course the cost varies in different years in proportion as the harvest is abundant or scarce. For example, the cost of raising a bushel of wheat in Michigan is given from four years' actual observation, and was as follows:—first year a bushel cost the grower, 27½ cents.; second year, 36 4-5 cents.; third year, 28 cents.; fourth year, 30 cents.

In view of the facts above stated, it is confidently believed, that the grain growers of the United States can successfully compete with those of any other nation in the great corn marts of the world.—*Bicknell's Reporter.*

Rearing and Feeding Calves.

HAVING had thirty-four years' experience in rearing calves, I hope you will excuse the liberty I take in sending you the following account of my practice—especially as I have found my method so much better than allowing the calves to suck their mothers. Whether the animals were intended for *keepers*, or *feeders*, I have always found that my method brings them soonest to perfection. It is shortly this:

1. For the first week the calf receives daily six quarts of new milk, as warm as it comes from the cow, in three portions—at morning, noon, and night. I carefully adhere to these three times of feeding for the first twelve weeks.

2. In the second week the milk is increased by half a pint at each feeding time; so that the calf receives, according to its strength, not less than six and three-quarters to seven quarts a day.

3. In the third week the calf no longer receives new milk, but the milk of the previous day skimmed; always taking care to warm the milk slightly, and at the same time increasing the quantity, so that the daily ration is now seven and a half quarts. I also commence at this time to introduce into the drink small portions of boiled linseed, or linseed meal and crushed peas.*

4. I proceed in the same manner in the fourth, fifth and sixth weeks, except that the milk is increased each week by half a pint at every feeding time, so that in the fourth week the calf receives eight and a quarter, in the fifth nine, and in the sixth nine and three-quarter quarts of milk daily; the animals also receiving more and more linseed meal, crushed peas, or rye meal in their drinks, which are always lukewarm.

5. In the next six weeks I gave them their food cold—with, however, more of these mixtures; the latter are always increased with the quantity of the milk, because too much liquid food is very apt to make the calves poor and pot-bellied. During this period I also take from them a portion of their milk, adding in its place such a portion of the linseed or other substances mixed with warm water as still to make the total quantity of each day's drink—increased, as I have said before, by half a pint at each meal—in the seventh week ten and a half quarts, and in the twelfth week fourteen and a quarter quarts per day.

6. Whoever pays proper attention to the feeding of his cattle will soon discover whe-

* Corn meal might be substituted for flax-seed, and for beans or other meal.

ther the proportion of food named be sufficiently rich or not, and can easily add or diminish the proper quantity.

7. There can be no animal so stupid about its food as the calf; it must therefore be taught from its earliest infancy. For this purpose, in teaching them to take their food when mixed with the linseed meal, &c., we generally begin by giving a small handful of oatmeal, and placing within their reach some good hay, or, if the season will afford it, some green food.

8. When the calves are twelve weeks old, the milk is entirely taken from them, and they receive in its place rye meal or crushed peas, made into pulp with water, and then thinned; the daily ration being increased until the end of the second quarter from 14½ to 20 quarts.

9. When the calves are half a year old, the drinking food is gradually lessened and thinned—the quantity being regulated by the natural thirst of the animals, as it gradually takes on to more substantial food.—*Farmers' Library.*

American Cheese Trade.

The cheese trade is rapidly augmenting in this country. The foreign exports of it have become a prominent article of supply for distant climes. Up to 1840 there was but a small quantity shipped, and that principally on foreign account. That year Messrs. Goodrich & Co., of New York, and the Messrs. Green, of Boston, made the experiment of large consignments to England. Of course, they met with the usual prejudices, the market before having been furnished with foreign cheese from Ireland and Holland. By perseverance the American article gradually came into favour, until it has now reached a heavy consumption. It fills part of the cargo of almost every vessel that leaves our seaports for Liverpool. The statistics of export, as will be seen by the following, betoken a still further extension, which is worthy the attention of the farmers of this State:

1840.....lbs.	723,713	1843.....lbs.	3,440,144
1841.....	1,748,781	1844.....	7,433,145
1842.....	2,456,677	1845.....	7,941,187
1846.....	8,675,390		

This foreign export trade has now reached over a million of dollars annually. It goes to fifty-two countries. Our heaviest customers in 1846 were—

England, lbs.	6,744,699	Hayti, lbs.	150,046
West Indies	807,040	British Guiana,	102,420
Cuba	227,276	Scotland,	88,041
Canadas	185,915	Venezuela,	40,812

Until within five years, cheese has usually been kept on sale in our eastern cities by grocers and produce dealers, with a general assortment of other products. A total revolution in this respect has taken place. In New York and Boston, extensive houses, exclusively for cheese, are doing a large business. Several commission houses are now solely engaged in it.

The farmers of our State seem to have neglected this important branch of the dairy. Every other saleable product is produced here in abundance; why not add this to our list of exports? We certainly possess the grazing land. Still we do not make 20 per cent. of the cheese consumed in the State. Daily it is shipped here from Buffalo, and goes into the interior of this State. Ohio also sends her hundreds of tons to our markets. Neither Western New York nor Ohio possesses more advantages for its manufacture than our own farmers. We are told that at the prices it has borne for the last five years, it is much more profitable than butter. In fact, for three months in the year, butter does not sell at any higher price. All dairy-women agree that two pounds of cheese are made easier than one pound of butter. Yet it is neglected.

In several towns near Buffalo, (Hamburgh and Collins,) it is the principal business of the farmers, and all who have embarked in it have greatly added to their wealth. Chautauque county farmers have increased their cows for cheese-making; Herkimer county, N. Y., produced 8,000,000 lbs. in 1845, according to the State census; St. Lawrence 9,000,000 lbs. In Allegany county, heretofore, lumber was the principal production; nearly every farmer now turns out his five to twenty casks of cheese in the fall. All the southern tier of counties in that State are largely embarking in it. The census of 1835 gives the quantity made in the State at 36,000,000 lbs. Ohio has doubled her exports of it within five years. Indiana cheese is now becoming known in the market.

As a sample of its increase, we give the following statistics of the amount that arrived at tide-water on the Hudson river, from the Canal Collector's books:

Year.	Pounds.	Exported.
1834	6,340,000	
1835	9,586,000	
1836	14,060,000	
1837	15,560,000	
1838	13,810,000	
1839	14,530,000	
1840	18,820,000	723,713
1841	14,170,000	1,748,781
1842	19,004,000	2,456,677
1843	24,334,000	3,440,144
1844	26,672,500	7,433,145
1845	29,371,000	7,941,187
1846	34,812,513	8,675,390

Here is a large quantity, but a ready market is found. The increase of foreign exports is large. Up to last fall the duty on it in England was $2 42 per 100 lbs. Sir Robert Peel's new tariff reduced it to $1 per 100 lbs., which will cheapen it to British consumers. The prices range in Liverpool, according to quality, from $10 to $15 per 112 lbs., and for three years past the London market has never been overstocked but three or four times, which has lasted but two to five weeks. It is getting introduced into all circles, and driving the Dutch article out of market. Mr. Colman, in his Agricultural Tour in Europe, says he found it graeing the tables of the lords and nobles, where, five years ago, it had never found its way. He dined with a Marquis, who treated him to American cheese, American apples, American cranberries, and American eider in bottles.

It is now exported to the East Indies in boxes; found in Calcutta; and goes, with other notions, to the Celestials of China. None but the real skim-milk grindstones, however, can stand a hot climate.—*Detroit Free Press.*

Highways.

BY WILLIAM BACON.

And what, say some of our brother farmers, have highways to do with agriculture? much more, why should they furnish topics for agricultural papers? We certainly know enough about that matter. When the time comes round, we work out our taxes, and thus make the roads very passable, and that is the end of the matter, unless they are filled with huge drifts, when "we break through," or, if the drifts are too large, in which case we go through the fields, until they settle, so that we can pass over them safely.

We admit all the above to be fact, so far as making, and repairing, and breaking out roads are concerned; but we do not subscribe to the creed that they have nothing to do with agriculture, or agricultural papers; but on the contrary, in our opinion, the two are very nearly associated, and the organ of the one forms the very channel of communication through which the claims of the other should be urged most strongly.

Good roads—what a luxury they afford to the traveller, the man of business, or the pleasure seeking public; what a convenience to the teamster, who moves along almost unconsciously over their smooth and well-finished surface! what a contrast to the up and down, corduroy affairs, which are, even in this age of improvement, too often to be met with—so rough, that if they do not positively jar the very spirit of the traveller out of him, they are certain to inspire him with any thing but agreeable sensations either in body or mind.

Our best public thoroughfares, as a general thing, are to be found where enterprising farmers are most abundant, and we have known very many instances where such men did not stop their labours when their "tax was worked out," but felt an obligatory responsibility to see to the little repairs necessary in order to keep the work they had accomplished, perfect through the year. What a few moments, thus employed, at proper times, will effect in securing public ways in right condition, and tend directly to a diminution of highway taxes, experience would soon show if the practice could become universal. Let a gully commence, and each succeeding shower will tend to make it worse, until from being unpleasant, it becomes uncomfortable, unsafe, impassable. In the end, days of labour and dollars of expense must be appropriated to put it where it was left the preceding year. Now, had the individual of nearest access to the place, taken a hoe and turned the water off, a labour which, in most instances, would not have occupied five minutes, when it first began to wear this gully, he would have been four-fold compensated for his service, every time he passed that way; the public would have had the pleasant and agreeable thoroughfare to which they were entitled, a heavy bill of expense in repairs, and perhaps a heavier one in damages, or a bill of indictment, justly rendered, might have been saved—all by five minutes labour before a shower.

But we introduced this article to speak more particularly of the common method of *repairing* highways, funds for which are usually raised by a tax to be paid in labour, at stipulated prices per day or hour. How large a proportion of this tax, in many of our towns, is worth six pence on the dollar, we leave it for the curious to decide in their own localities; we are certain, however, that within the sphere of our own observation there are some noble instances where men labour with their teams with the same fidelity that they would in getting in a crop on their farms. This is the correct principle. Every man who pays a highway tax contributes to a common fund, which should result to the benefit of all, and every man who cancels his tax by labour ought to consider this labour as resulting directly to his own benefit, not only as a matter of personal convenience and comfort, but in an economical point of view. Does an individual wish to sell his

property? The road that leads to his premises, is one item that goes to set a value upon it. If easy of access, its value will rise in estimation of the purchaser. Then, again, the general character of the road goes to tell the general character of the neighbourhood. If the highways are rough and unpleasant, the ways of the people about them are likely to be so too.

And this class of people are the ones upon whose labours we would make a discount of ninety-four per cent. from the assessments. They are behind time in coming to their labours, and watching time with sluggish indolence to see the sun gain the meridian, or sink behind the western hills. They make it a holiday, a day of rest, unless perchance they exhaust themselves in fault-finding, because those who work do not work faster, or do different. Thus they cheat themselves, for the sake of cheating others.

In working highways, care should always be taken to leave them as smooth as possible, with a gradual slope from the centre. The smoothing will enable beasts and vehicles to pass smoothly and easily along, without danger of stumbling to one, or an annihilating jolting to the other. The old practice of raising high bars across the road to stop the progress of water on hills was a pernicious one, and should be wholly abandoned. They were unsafe, and often highly dangerous annoyances, fraught with no particular good. When the road, even on the steep hillside, is well worked, a much better remedy for washing may be found by opening slight outlets every six or eight rods, by which the water will pass off quite as well as though huge embankments were raised to effect the object. Much less injury will arise to wagons where this is done, and the passenger will find himself passing over comparative smooth surface.

Another evil we will hint at, is the superabundant quantity of ploughing which frequently takes place at the time of repairing highways. Every one must have seen, not only in his own neighbourhood, but abroad, the ill appearance of ground ploughed and left in the furrow, or ditches badly cleared, to become the fallow for every noxious and unpleasant weed that the winds may see fit to sow. In repairing roads, no more land should be disturbed than is actually necessary to effect the object, and this is the most economical manner, so that, aside from such places and the travelled path, they may possess a smooth, green, velvety appearance, always grateful to the eye, and pleasant to pass along.

It is no visionary conjecture to contemplate the time when our highways will all be adorned, on either side, with beautiful rows of stately shade trees, to ornament and enliven the scenery. In that day, what a contrast will deep ditches, naked fallows, large patches of weeds, rough and uneven furrows, afford to their enlivening influence! Improvement in these things is necessary, and where improvement commences her work, and the result rarely and beautifully developes itself, its ultimate triumph may be well anticipated.—*American Journal of Agriculture and Science.*

Agricultural Premiums.

At a stated meeting of the Philadelphia Society for promoting Agriculture, held at their rooms on the 5th of April, 1848, A. S. Roberts, President, in the chair. The minutes of last meeting were read and adopted.

Roswell L. Cott, Esq., of Patterson, N. J., was elected an honorary member.

The committee appointed at last meeting to report a schedule of crops for which premiums should be offered this year, made report as follows, which was adopted.

For the best Wheat, not less than three acres, $10.

For the best Rye, not less than three acres, $8.

For the best Oats, not less than three acres, $6.

For the best Corn, not less than five acres, $10.

Por the best Potatoes, not less than one acre, $10.

For the best Ruta Baga, not less than half an acre, $6.

For the best Sugar Beets, not less than half an acre, $6.

For the best Parsnips, not less than one-quarter of an acre, $6.

For the best Carrots, not less than one-quarter of an acre, $6.

For the second-best crop of each, or any of the above, a copy of Colman's Journal will be awarded.

A committee of five members were appointed to make inquiry, preparatory to holding the next annual exhibition the approaching autumn, and to report at next meeting.

Dr. Hare remarked that the health of farmers and others exposed to frequent changes of weather, would be greatly benefited by the use of additional clothing when required by such changes.

He also recommended the use of the rain guage, a necessary and useful article, which farmers might obtain at a small expense.

Mr. S. Williams recommended the use of zinc pans for dairies, as possessing the power

of preserving the milk in sweet or pure state, much longer than other pans used.

Dr. Hare remarked that great care would be necessary to keep them perfectly clean, or the milk and butter might be unwholesome. He thought it probable that a small block of zinc, placed in a tin pan, might produce the same effect on the milk by preventing its getting sour too soon.

Extract from the minutes.

A. CLEMENT, *Rec. Sec'ry.*

The Mustard Plant.

THE following paragraph is found in an Address delivered by Jacob Green in Albany, in 1814, before the Society for the promotion of Useful Arts. In confirmation of the sentiment there expressed more than thirty years ago, that this plant "might yield no trifling profit to the American cultivator," we would refer to the 99th page of our ninth volume, where the account of a crop raised by J. H. Parmlee, of Ohio, is given by C. J. Fell and Brother, of this city.—ED.

THE Sinapis or Mustard, is a plant which might yield no trifling profit to the American cultivator. Small clusters of it are seen growing in our fields and gardens; but whether it is a native of the country, or merely the fruit of chance, I am not able to determine. In some catalogues, however, it is marked as an exotic; but our climate is congenial to its habit, and almost every soil is adapted to its growth. A gentleman from Orange county, in this State, has informed me, that he collected from half an acre of but tolerable land, fourteen bushels of the seed, which he believed equal in quality to that of the Sinapis Arvensis, commonly known by the name of Durham mustard. There are many species of this herb, but it would be well for the cultivator to confine his attention to the one just mentioned, the seed of which is more abundant and of a better quality than in the other kinds. The high price given for imported mustard, and the facility with which it can be raised, induce a belief that farmers generally might find their account in making it an article of culture and traffic.

The best Mode of Pruning the Peach.

IT seems to me that the promulgation of the improved mode of pruning, called the "*shortening-in*" mode, in the "Fruits and Fruit Trees of America," is one of the greatest benefits yet conferred on the thousands of cultivators of this best of all our fruits—the *peach*.

I believe you state that this mode has long been known and practiced in Europe, and that the peach tree is hence a great deal longer lived there than in the United States. Be this as it may, I am sure that it was previously little known or practiced on standard trees in this country; that the great benefits that would result from it were beforehand quite unknown to the majority of our peach growers.

It is, indeed, the only scientific mode of pruning this tree; for the common way of thinning out the branches, practiced with little care or skill on most of our fruit trees, is particularly unsuited to this. No better proof of this fact can be desired than one which I have every day before my own eyes. In my neighbour's grounds is a quantity of peach trees, six years old, which have never been pruned at all, except to thin out a few branches, which have borne two heavy crops, and already have that exhausted and lean appearance, indicative of feebleness and old age. The fruit which they bore last year was small, and comparatively flavourless. In my own garden I have a small plantation of peach trees, set at the same time as my neighbour's, but presenting a very different appearance indeed. They have been pruned for the past three years on the *shortening-in* mode. They have borne every year good crops of the largest and most delicious fruit to be found within my knowledge,—the crop regularly distributed over the branches. The trees are in most capital health; foliage deep green, and their shape, from the system of pruning adopted, round, bushy and symmetrical. Altogether, I am very proud of the effect of this mode of pruning upon my trees; and I assure you that many persons, who have come here to examine them, have gone away firmly resolved to "do likewise."

There cannot be a doubt that the peach tree exhausts itself, and is short lived in many soils, especially in those that are not deep and rich, by excessive over bearing. It is one of the great merits of the shortening-in mode, that by taking off a portion of the *ends* of every bearing shoot—that is to say, the young growth of the previous year—it effectually prevents this evil; since if you shorten-back the branch one-half, you necessarily take off one-half of the blossom buds, and diminish the probable crop of fruit one-half. This is treating the peach tree very nearly as it needs to be treated; for if one-half of the blossoms are thus taken off, it leaves the tree provided with just so many as it can carry regularly, every year, without exhausting itself; and the fruit that is left is much larger, and a great deal more delicious than if the tree goes unpruned, and bears a full crop. This I have twice satisfied myself of by direct experiment, on trees side by side, of the same variety; and

you could scarcely credit the improved quality of the pruned tree, without comparing them.

One of my acquaintances, who is an intelligent orchardist, and grows peaches for market on a large scale, now makes his trees branch out, or form their heads quite low, and shortens them in with a pair of large *hedge-shears*,—the blade two feet long,—fastened on long handles. In this way it is but a short job to prune a whole orchard.

I have used wood ashes as a manure for peach trees with the greatest benefit. It gives them a particularly healthy and sound look; that is, without becoming gross, or over-luxuriant, they make a moderate growth of good plump shoots, have very healthy foliage, bear high coloured and well ripened crops.

I use wood ashes, either leached or unleached. The latter is, if quite fresh, about three times as strong as the former; and, therefore, while half a peck of unleached is sufficient, usually, for a young tree just beginning to bear, I have found half a bushel not too much of the leached ashes. It ought to be spread over the surface, and dug in a few inches only. Probably the best time of applying it is in October; but I have also found it to answer admirably as late as June, —very soon, if the season is a rainy one, changing the common colour of the leaves to a deep emerald hue.

I have so high an opinion of the good effect of ashes, that—agreeing with you, that the yellows is only disease, caused by bad treatment and exhaustion,—I feel almost certain that the shortening-in mode of pruning, and the use of ashes, will drive this malady out of the country, if cultivators can be brought to estimate properly their joint value.

It is, no doubt, *best* to prune the peach tree early; but, as I have seen no bad effects whatever from shortening-in as late as the middle of May, I advise such of your readers as may not have performed that operation already, on their peach trees, to take knife in hand and sally forth immediately.—*Horticulturist.*

Facts about Digestion.

Wheat is most nutritious of all substances, except oil; containing ninety-five parts of nutriment to five of waste matter. Dry peas, nuts and barley are nearly as nutritious as wheat. Garden vegetables stand lowest on the list, inasmuch as they contain, when fresh, a large portion of water. The quantity of waste matter is more than eight-tenths of the whole. Veal is the most nutritious, then fowls, then beef, last, pork. The most nutritious fruits are plums, grapes, apricots, peaches, gooseberries, and melons. Of all the articles of food, boiled rice is digested in the shortest time—an hour. As it also contains eight-tenths of nutritious matter, is a valuable substance of diet. Tripe and pig's feet are digested almost as rapidly. Apples, if sweet and ripe, are next in order. Venison is digested almost as soon as apples. Roasted potatoes are digested in half the time required by the same vegetable boiled, which occupy three hours and a half—more than beef or mutton. Bread occupies three hours and a half—an hour more than is required by the same article raw. Turkey and goose are converted in two hours and a half—an hour and a half sooner than chicken. Roasted veal and pork, and salted beef, occupy five hours and a half—the longest of all articles of food.—*American Journal of Agriculture and Science.*

Grafting Currants.—The Gardeners' Chronicle recommends, for the pretty appearance presented, as well as improved flavour, to graft currants of different colours, as the red, black, and white, variously intermixed, on stocks trimmed up to a single stem, three or four feet high. The tops may be headed down to a dense compact head, or trained as espaliers in the horizontal or fan method, the two latter modes of training, by the free exposure to the sun and air, much improving the quality of the fruit. The importance of trimming the bushes up to a single stem to improve the fruit and facilitate clean culture, instead of suffering two hundred and fifty suckers to shoot up all around into a dense brush heap, is very obvious to those who have tried both.

Hens.—To make them lay perpetually, have their houses thoroughly cleansed; let no filth get in the nests; whitewash the places they frequent; put lime, sand, ashes and gravel, under roof, where they have access; give them fresh chopped meat, grain, and potatoes every day during cold weather, and until insects appear; never leave nest eggs for them; give them clean hay, plenty of water, and they will be profitable.

True Breeding.—Lord Chatham, who was almost as remarkable for his manners as for his eloquence and public spirit, has defined good breeding to be "Benevolence in trifles, or the preference of others to ourselves in the little daily occurrences of life."

THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

PHILADELPHIA, FIFTH MONTH, 1848.

THE Editor of the Farmer's Cabinet will relinquish its publication at the close of the current volume in the seventh month next. He will dispose of the concern upon terms that may be advantageous to any one who may incline to continue it.

REPORTS from all neighborhoods in this vicinity—as well as from many others far distant, inform us that the prospect for the wheat and grass crops, is remarkably promising. The showers and the sunshine have been opportune, and the appearance of the country is wearing its beautiful spring like livery.

THE quantity of rain and snow which fell in the 4th month, 1848, was ..... 1.50 in.

Penn. Hospital, 5th mo. 1st.

CONTENTS OF THIS NUMBER.

THE FARMERS' CABINET,

IS PUBLISHED MONTHLY BY

JOSIAH TATUM, No. 50 NORTH FOURTH STREET, PHILADELPHIA.

It is issued on the fifteenth of every month, in numbers of 32 octavo pages each. The subjects will be illustrated by engravings, when they can be appropriately introduced.

Terms.—One dollar per annum, or five dollars for seven copies—*payable in advance.*

All subscriptions must commence at the *beginning* of a volume. Having lately struck off a new edition of one or two of the former numbers, which had become exhausted, we are now able to supply, to a limited extent, any of the back volumes. They may be had at one dollar each, in numbers, or one dollar twenty-five cents half-bound and lettered.

For eight dollars paid in advance, a *complete set* of the work will be furnished in numbers, including the 12th volume. The whole can thus readily be forwarded by mail. For twenty-five cents additional, per volume, the work may be obtained neatly *half-bound and lettered.* Copies returned to the office of publication, will also be bound upon the same terms.

By the decision of the Post Master General, the "Cabinet," is subject only to newspaper postage.

Joseph Rakestraw, Printer.

THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—LIEBIG.

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BY JOSIAH TATUM,

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No. 50 North Fourth Street,

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Price one dollar per year.—For conditions see last page.

NOTICE.

THE Editor of this paper being about to relinquish its publication at the close of the current volume, next month, has made an arrangement with the publisher of the American Agrieulturist, of New York, by which all the subscribers to the Cabinet will be supplied with that work: and it is earnestly requested that those who mean to continue their subscription, will *immediately* give evidence of it by remitting payment by mail, either to the publisher in New York, or to the present publisher of the Cabinet, 50 North Fourth street, Philadelphia.

Subscribers in arrears for the Cabinet, to whom bills have been recently forwarded, will see the necessity of settling their accounts, and remit by mail, as early as possible.

The American Agriculturist and Farmers' Cabinet,

Will be published promptly on the 1st of each month in future, by *C. M. Saxton*, 205 *Broadway, N. Y.*, to whom all subscriptions and monies may be sent. The friends of the FARMERS' CABINET are informed, that the *July number* will be sent them bill enclosed for the year, those who do not wish the paper continued, will please return the number with their *address distinctly written on the wrapper*, and addressed "*American Agriculturist, New York.*"

TERMS.

For single copies, ...	$1	per annum.
3 copies, ...	2	"
8 copies, ...	5	"
20 copies, ...	12	"

THE AMERICAN AGRICULTURIST is now in the seventh year of its publication. From its commencement it took a high stand; and has ever since been considered by the press and all unbiased judges, as the *leading periodical* of its class in America. It has a large and rapidly increasing circulation throughout the United States, the Canadas, and other British possessions, the West Indies, and South America; and we may fearlessly assert, that it has given more reliable information on rural subjects, and been perused with greater general satisfaction, than any paper of the kind yet published.

The Agriculturist treats of every description of domestic animals and poultry; their characteristics, breeds, the best and the worst; their advantages and disadvantages; their mode of breeding, feeding, and rearing; their uses, profits, and management. It treats

of all cultivated crops, including fruits, shrubbery, and flowers; the best seeds, mode of planting, cultivating, gathering, and preparing for markets; the general principles of vegetation and the laws of vegetable life. It describes the principles of mechanics as applied to machinery used by farmers and planters; the best machinery and implements for agriculture, their uses and the particular superiority of some over others, and their adaptedness for particular purposes. It gives the latest improvements in those implements which may have been made, and suggests others; tells where they are to be found and the benefits that will follow from their use. It specifies new objects of cultivation, and how they may be better prepared for a profitable market and more general use.

This is the great design and scope of the *Agriculturist;* and these are the paramount objects of interest throughout America. No country can ever enjoy solid prosperity unless an enlightened system of agriculture is practised among its people, and this cannot be done except by the aid of those works which are written to teach it. Let all aid, then, to spread them broadcast throughout the land. It is the duty of every good citizen to do this—nothing equal to it can be done to benefit the country.

All editors inserting the above, and forwarding the paper containing it to the publisher, will be entitled to the Agriculturist the current year, without further charge.—*American Agriculturist.*

Geography and History of the Quince.

The quince is supposed to have been originally a native of Sidon, a city of ancient Crete, now the island of Candia; but it is much more probable that it was only first brought into notice in that city. It is considered, at present, as indigenous to the south of France, particularly on the borders of the Garonne, and to Germany, on the banks of the Danube. By some, the tree is thought to be indigenous to Britain; and Phillips states, in his "Pomarium Britannicum," that quinces grow in such abundance in some parts of the Wealds of Sussex, as to enable private families to make quince wine in quantities of one hundred to two hundred gallons in a season."

The quince was known to the Greeks and Romans, and both nations held it in high estimation. Columella says, "Quinces not only yield pleasure, but health." He speaks of three kinds—the "Struthian," the "Must Quince," and the "Orange Quince." Pliny mentions many kinds, some growing wild in Italy, and others in cultivation, so large that they weighed the boughs, on which they grew, down to the ground. He also says that some were of a green, and others of a golden colour, the latter of which were called *chrysomela.* The only kind that was eaten raw, he states to have been raised by grafting the large quince upon the stock of a small variety, called *struthla.* "All kinds of this fruit," continues he, "are grown in boxes, and placed within the waiting-chambers of our great personages, in which men wait to salute these personages as they come forth, every morning." It appears from the same author, that quinces were used to decorate the images of the gods, which were placed in sleeping-chambers round the beds; whence it follows, that the Romans did not think that there was anything either injurious or unpleasant in their smell. He gives directions for preserving the fruit, by excluding the air from them, or boiling them in honey; or by plunging them in boiling honey, a practice in use with this, and other fruits, in Genoa, at the present day. He also writes much on the medicinal qualities of this fruit. "Quinces," says he, "when eaten raw, if quite ripe, are good for those who spit blood, or are troubled with hemorrhage." The juice of raw quinces, he states to be a sovereign remedy for the swollen spleen, the dropsy, and difficulty of taking breath, particularly to those who cannot conveniently breathe, except when in an upright position. The flowers of the quince, either fresh or dried, he tells us, are good for inflamed eyes. The root of the tree was used, not only as a medicine, but as a charm against scrofula.

The date of the introduction of the quince into Britain is unknown. Gerard mentions it as growing in gardens and orchards, and as being "planted often times in hedges and fences belonging to gardens and vineyards;" from which we may infer, that it was by no means rare in his time; and, indeed, in all probability, it has existed in England from the time of the Romans.

The largest recorded tree of this species in Britain, is in Radnorshire, at Maeslough Castle, which is twenty-one feet in height, with a trunk ten inches in diameter, and an ambitus or spread of branches of twenty-two feet.

The quince, like most of our orchard fruits, was probably introduced into the North American colonies at the early periods of their settlements. It is very generally cultivated for its fruit, and is usually planted in clumps of bushes, rather than as individual trees or shrubs. Of late, however, orchards of it have been formed on the rich

loamy spots of Long Island, and other parts of the country, and doubtless, in time, their owners will derive a handsome profit.

Soil and Situation.—The quince prefers a moist but free soil, near water, and a situation rather open, but sheltered. In dry soils, neither the tree nor the fruit will attain a large size; and in situations exposed to high winds, the fruit is liable to fall before mature. The finest specimens of quince trees in Britain, are said to be found in old orchards adjoining ponds; it being customary, formerly, to plant a quince tree in every apple orchard. If the soil be too dry or meagre, an artificial one may be prepared, or a hole may be excavated for each tree to a depth of ten or twelve feet, and then filling it with loose stones to within two or three feet of the surface, and the remainder with rich loamy earth or mould. Such a preparation is well worthy of the expense in every garden where this tree will not otherwise grow.

Propagation and Culture.—The quince may be as readily propagated from seeds as the apple and pear; but the quickest mode of raising plants is by layers. It will also grow by cuttings, planted in autumn in a moist, sandy loam. The trees, when planted as standards, should be situated about ten feet apart, and once set out, require but little attention, beyond that of removing the suckers from the roots, and the side shoots from the main stems. To have the fruit of a large size, the head of the tree should be kept open by thinning out the shoots; and the fruit ought also to be thinned out, leaving no more on the tree than it can well mature. The tree is of moderately rapid growth, when young, acquiring, in four or five years, a height of six or eight feet; and in ten or twelve years, it attains an elevation of fifteen feet, after which, it continues to increase chiefly in the width of its head. —*Browne's Trees of America.*

A Day at a Farmer's,

OR MENTAL CULTIVATION AND REFINEMENT CONSISTENT WITH MANUAL LABOUR.

It is the high privilege of every American woman to aid in the advancement of our nation to the highest attainable point of perfection, but we can never be more than we now are in moral and intellectual greatness, unless our minds are cultivated and our hearts' best affections centered on something higher than fashion and folly. To the wives and daughters of our farmers, we must look for that weight of influence, that shall tell most effectually upon the destinies of our republic. And while we are compelled to admit that there is, at present, a great lack of intelligence, and consequently of true refinement, among the class to which we allude, we still believe that they have both the time and the means to become all that is noble and elevated.

Example is all powerful, since the inference drawn is, "what has been done can be done." With the multitude, facts are more than principles. Appealing to this characteristic of the human mind, I am induced to lay before you, and if you think them worthy, before your readers, the incidents of a day spent in the well ordered house of an Ohio farmer.

It was a bright spring morning, when nature was putting off her winter gear, and coming out in russets and greens, bedecked with flowers, and redolent with perfumes. Her bonnet was trimmed with pale green ribbons, intertwined with peach blossoms, and the lining, of the most approved shaded brown, was relieved by wreaths of the blue violet, the snow drop, and hyacinth, all got up in a style superior to Parisian artificials, you may be sure. It was a morning to make one's heart expand with love and gratitude, and of course a happily chosen opportunity for visiting friends, and still further extending the golden chain that binds the world together, making the good of one the true interest of all.

Mrs. Smith met us at the door of her neat home, and gave us the most frank, cordial welcome imaginable. She was a person of decidedly plain exterior, claiming no pretension to beauty, except the expression of intelligence and kindness that illumined her face, and made the beholder imagine that she was really a lovely woman, while if he had analyzed her features, he would not have found one that was really faultless, save the well expanded forehead and finely arched brow. Mrs. Smith was her own housekeeper, and as it was morning, and her domestic arrangements demanded her attendance, we were invited to her neat kitchen, that we might not feel the embarrassment of visiting without our hostess. In that kitchen, there were true order and convenience, without the restraint that we sometimes feel where neatness is the end of life, not simply the means of domestic comfort.

With the unembarrassed air of one who knew that labour detracted nothing from true dignity, Mrs. Smith pursued her morning labours, and entertained us at the same time with the most animated and refined discourse, now dwelling with the fervor of an enthusiast upon the production of some master poet, and again discoursing with calm

philosophy upon the comparative merits of different theorists and historians.

I had often met her as a mere passing acquaintance, yet I had never before realized her superiority. I was curious to know the secret of her strength, the charm by which more than youthful vivacity had been retained, while she was so eminently a domestic woman, looking well to the ways of her household, and never eating the bread of idleness. My curiosity was soon gratified, for on taking up a volume of history that lay on her little work table, she remarked it, and said that they had just commenced the volume in the course of their evening reading.

"You know," she added, "that men are seldom employed during the long winter evenings, while our fingers are necessarily busy. Knowing that it renders life so much sweeter to feel that we are constantly improving, than to be retrograding, my husband and I have adopted a system of reading which we pursue regularly, unless interrupted by indisposition or the presence of friends. We have usually on hand two volumes, one of history or natural science, the other poetry, or the production of some of our most chaste literary writers. While pursuing our ordinary labours, we read the former; but if I have to spend an evening in mending, or anything of the kind, it is always enlivened by poetry or humour; and if Mr. Smith has to spend a rainy day mending old shoes, which he sometimes does for the sake of economy, I lay by my sewing and read the most interesting poetry or other literature that our library affords. So you see we have an antidote for every disagreeable portion of labour that renders it rather a coveted occasion, than a matter to dread."

How much of the most exalted, as well as the most shrewd philosophy of life had they embodied in that simple arrangement. No portion of domestic labour that was not enlivened and elevated by the sweetest or loftiest associations. They were still in the morning of life, and thus begun, it could not be other than happy. My eyes followed her as she glided about, and now setting aside the shining dishes, and then hanging over the dinner pot and preparing the substantial farmer's dinner, with no apology, no embarrassment, and with all the rest, never a mistake; and a new radiance seemed to invest the character of woman. She had not departed a hair's breadth from her proper sphere, yet it was far wider than many choose to fill. She was the companion, not the spoiled child or the petted darling of an idolatrous husband, cherished to-day, to be the blighted, faded blossom to-morrow.

But I must narrate, not moralize. Noon came, and with it the husband and labourers, to partake of the plain boiled meats and vegetables, followed by a boiled Indian pudding and pumpkin pie. No tea, nor coffee, and better than all, no apology for setting before guests the same fare that they would have served up had no one but their own family been present.

We passed an agreeable hour with Mr. Smith, a pleasant companionable man, plain without coarseness, and polite without affectation. He had no pretensions to a classical education, was no mere "Gentleman Farmer," a term that is very much abused, by the way, but a man of good mind, cultivated by a good common school education, and still further improved by the system of home culture so happily adapted to the wants of the human intellect.

There was no gloom, nor any expression of mere content on his countenance, but a glow of real happiness as though head and heart had found a happy home, as well as the mere animal part of his being.

The hour of recreation passed, Mr. Smith repaired to the field with his labourers, while Mrs. Smith, who had improved the time by removing and cleaning the dishes, now waited upon us to her neat little parlor, where we spent the afternoon in that pleasant interchange of thought that constitutes the "wine of life." Half an hour before tea time, Mrs. Smith excused herself for a few minutes, and then, with the ease of a true lady, she again glided into the parlor, entertained us with her vivacity and humor, and again leaving us to ourselves, we became conscious for the first time that this little interruption was all that their simple mode of living demanded for the preparation of tea. Cold light buiscuits, some plain cake, and one or two varieties of sauce, with tea, constituted our meal, but its simplicity was more than atoned for by the cheerfulness and vivacity of our entertainers. A short half hour after tea we said our adieus, and with hearts made more hopeful by this elevating example, we took our leave, promising ourselves never to forget one happy day at the farmer's.—*Ohio Cultivator.*

II. Anerum on Wool Mattresses.

The object of this paper is to prove that wool mattresses make the healthiest, the warmest, the most luxurious, the cheapest, and the most economical bed that can be made, and that it is superior to any other material for a bed for men, women and children, for all ages and sexes, and that man recovers much sooner from fatigue on such a bed than on any other. The human spe-

cies are obliged to repair by sleep and repose the fatigues of the body, every sixteen hours at least, so that even the laborious pass more than a third of their lives in bed; the idle, fashionable and luxurious, and women, nearly half their time, and children, in health, sleep most of their time.

The Romans used to sleep in the day, and had particular rooms distinct from their bed chambers where they slept in the day, and in Italy and southern countries, that practice is still continued; therefore, it is of the utmost importance what kind of bed we lie upon, the harder the bed, in reason, the healthier we are. Wool mattresses give this hardness and firmness, at the same time yield sufficiently to the pressure of our bodies, and form an agreeable and luxurious bed, and wool does not make marks on the skin or relax as other bedding. In the old accounts of the court of England there is a charge on a journey for so many bundles of clean straw for the queen's bed; then it was said when men slept on straw with a log of wood for their pillows, they were men of iron, and now they sleep on feather beds and down pillows, they are men of straw. All great men, warriors, heroes, &c., who have made any noise in the world, have always slept on a hard bed, from Charles XII. to Napoleon.

Chemically, wool is the best for bedding, wool flannel, and all substances made of wool, keep our bodies warm; they are composed of a rare and spongy mass, the fibres of which touch each other so slightly that the heat moves slowly through their interstices, and wool retains its heat better than any other material, and does not strike so cold. People may be convinced of the impriety of lying long in bed, by knowing that a sound man in one night of seven hours' sleep generally perspires fifty ounces avoirdupois or four pounds troy weight; we cannot wonder at that, since there are above three hundred thousand millions of pores in the body of a middle sized man, and that in the last hours of sleep one perspires most; hence the impropriety and the weakness of lying too long in a soft bed and the necessity of lying on a comparative hard elastic bed, such as a wool mattress. In France wool mattresses are generally adopted, consequently you never meet with a bad bed there. I have travelled all over France and never met with a bad bed, and a very recent intelligent American traveller, of great observation, mentions on his removal from England to France, that he found the French beds delicious because the beds are wool mattresses.

Mode of making a Wool Mattress.—The first thing to constitute a good healthy bed is, that it must be absolutely flat, therefore all bedsteads should have wooden laths instead of sacking, which always gives and forms a hollow; the wool is carded by hand, and all knots and extraneous matter taken out, the great point is to make it thick enough. The best bed I slept in, in my life, had sixty pounds of wool in it, but the bed was a very large extra size; half that quantity will make a small bed, but if you wish to lie luxuriously, yet hard, do not stint the wool, that makes all this difference; the covering is washed once a year; the wool is carded and a few pounds of wool added, and the bed is sweet and new. However luxuriously he may be, let any gentleman have a good wool mattress made, and let him ride forty or fifty miles and thoroughly fatigue himself, he will then know the value of such a bed. My object is to increase the home consumption of our wool. There are twenty odd millions in the United States; say five to each family, four millions; say three beds to each family, taking the whole population twelve millions; say thirty pounds of wool to each bed, three hundred and sixty millions of pounds of wool; say thirty-four millions of sheep in the United States, say eighty million pounds of wool; this will consume more than four years' clip of our wool. This ought to be promulgated to increase the consumption of our wool, and such wool as cannot be sold abroad. Independent of the benefit to all in their health who adopt wool mattresses on account of their cleanliness and durability, in the end, they are cheaper than any other bedding.

Agricultural Minutes, Philadelphia.

A STATED monthly meeting of the Philadelphia Society for promoting Agriculture, was held on Wednesday, the 7th inst., at their rooms, Washington Hall, South Third street, A. S. Roberts, President, in the chair. Col. B. B. Long, of Philadelphia, was elected a resident member. Three gentlemen were proposed for membership.

A letter from B. P. Johnson, Secretary of the New York State Agricultural Society was read, informing the meeting that Professor Johnson, so celebrated for his lectures on chemistry, as connected with agriculture in Great Britain, proposed making a visit to this country.

The committee on the exhibition made report, stating that they had the offer of the race-course for holding the Annual Show, and on motion of Mr. Ford, a committee of arrangement was appointed to make the necessary preparation.

A resolution was offered, granting to J. S. Skinner, Esq., the use of the room, which was unanimously agreed to. He having determined to reside in this city, and to continue the publication of his agricultural work.

Some remarks were offered by Mr. Ford on the adulteration of plaster of Paris, and the disappointments and losses that would occur to the farmer in consequence thereof.

Dr. Hare read from the North American and United States Gazette, a communication on the subject of sowing orchard grass seed, and the value of that grass for pasture and hay. Red clover sown with it ripens about the same time, and produces an abundant crop. On motion adjourned.

Extract from the minutes.

A. Clement, *Rec. Sec'y.*

Philadelphia, June 8th, 1848.

New Material for Flooring, Paving and Roofing.

This new material or compound, which forms the subject of a patent taken out by Mr. Cassel, of Millwall, consists of many varieties, but possessing all these common properties—that they are impervious, very elastic, and—there is reason to believe—exceedingly durable.

When intended to be employed for *paving* or flooring, or other like purposes, it is composed of four varieties, which, for the sake of distinction, are designated as compounds, No. 1, 2, 3, and No. 4, and are thus described:

I prepare No. 1, compound in manner following: I saturate a quantity of chalk, or marl, or lime, or loamy clay, or sandy earth, previously reduced to the state of a fine powder, with oil of tar, or mineral tar, or vegetable naphtha, or any other reisonous, oily, or fatty matter. I take one cwt. of rosin, and melt it in a caldron exposed to a gentle fire, until all the water in it is evaporated. I then throw into the caldron two cwt. of the saturated chalk or other earth, and mix it well with the melted rosin. I next add from three to six pounds of liquid caoutchouc, (India rubber) or from one to three pounds of essential oil of tar or turpentine, or some other oily or fatty, or cementitious substance—varying the quantity according to the degree of elasticity desired to be given to the ultimate compound,—and after that, from three to five pounds of sulphur; and finally, two cwt. of fine dry grit, keeping all the while the contents of the caldron well stirred, till the whole are thoroughly amalgamated. When cool, this compound is of a slatish grey colour, and of a close, granular texture. No. 2 compound is prepared in the same way as No. 1, and composed of the same materials, and in like proportions, excepting only that I substitute for the rosin, vegetable pitch, and use a larger proportion of sulphur, say from 6 to 8 lbs. No. 3 is also prepared in the same way as No. 1 and 2, and composed of the same materials in the like proportions, excepting that instead of the rosin or vegetable pitch, I use equal parts of rosin and Stockton tar, and reduce the quantity of sulphur to about 4 lbs. No. 4 compound differs from 3 in the substitution of equal parts of rosin and mineral, or coal tar, for the equal parts of rosin and vegetable pitch.

These compounds may be used by themselves—"being laid down in a hot and fluent state, and of sufficient thickness;" or they may be employed in any of the following states of combination.

Firstly—They may be combined with any of the natural asphaltates or bitumens, or any artificial compound of a bituminous quality.

Secondly—They may be formed, in combination with small pieces of wood, into large blocks for use.

Thirdly—Any of the compounds before described may be used in combination with wood, in manner following: to form a flooring for the ground floors of buildings, which will be quite impermeable to under damp, and exceedingly durable. The ground is to be first covered over to the depth of about an inch, with a layer of any of the four compounds before mentioned—being previously well beaten down and levelled,—and then small square blocks of wood of equal sizes are to be set in this composition while yet warm, with the grain uppermost, and placed in regular order, side by side. Any interstices which may be left between the blocks are to be carefully filled up with the compound. Or, instead of using small blocks of solid wood, composition blocks of a large size, prepared as follows, may be employed: I take a number of pieces of deal, from three to five inches wide, and from ten to eighteen inches long, such as may be picked out of the woods imported from abroad under the denomination of fire-wood, and which, paying a small duty, may be had cheap, and lay them in an iron frame or mould, in the direction of the grain, jointing them roughly together lengthwise, but so that they shall break joint transversely. I then cover them to the depth of one or more inches with any of the four compounds before described, in a hot, fluent state, and leave this coating to settle and cool, whereby it becomes firmly united to the wood beneath. On removing this mass or block from the frame or mould, and fitting it into a picce of flooring, it is

placed with the wood uppermost, which remains ever after beyond the reach of a damp from beneath. For such a description of ground flooring no joists are requisite. The blocks may be made of any length or breadth most convenient; but I prefer making them of about four feet in length, by two feet six inches in breadth. When a very strong flooring of this kind is wanted, I cross the layer of wooden pieces before described with a second of exactly the same description, but laid the reverse way, and upon an interposed bed of one or the other of the four compounds before mentioned. The two layers are then pressed together; and when the compound which unites them has cooled and set, I pour over the whole another coating of the same compound, so as to cover completely the second layer of wood. Instead of the blocks being all of one sort of wood, or of one colour, they may be of different wood and different colours, so as to give the flooring a tassellated appearance.—*Journal of Agriculture and Science.*

The Osage Orange for Hedges.

The Osage Orange, known also by the names of "Osage Apple," and "Bow-wood," is indigenous to Arkansas, Texas, and Upper Missouri, and may be safely cultivated for hedges or ornaments, wherever the Isabella grape vine will thrive and mature its fruit in open air. In its natural habitat, the Osage Orange forms a beautiful deciduous-leaved tree, often growing to a height of 25 to 30 feet, with a trunk from 12 to 18 inches in diameter; and in very favourable situations it sometimes attains double these dimensions. The general appearance of this tree greatly resembles the common orange; and when we view the beauty and splendor of its dark, shining foliage, large golden fruit, and the numerous sharp spines which the branches present, we are strongly impressed by the comparison. The juice of the young wood, leaves and fruit, consists of a milky fluid, of an acrid or insipid taste, which soon dries on exposure to the air, and contains a considerable proportion of an elastic gum. The fruit, however, in open culture does not ripen its seed north of Philadelphia.

The most important use to which the Osage Orange can be applied is for the formation of hedges, and there is no plant, in our estimation, better adapted for this purpose in any part of the country where this tree will thrive. Apprehensions have been expressed by some that, from its rapid growth, it will soon become too large for live hedges, which, it is thought, will not endure for a great length of time. This, however, remains yet to be proved. We have no doubt in our own minds, that if a judicious system be pursued in trimming and *heading down*, they will serve an excellent purpose for twenty years; for there are hedges of this plant in the vicinity of Cincinnati which are ten years old, and have thus far proved perfectly hardy, very uniform, neat and handsome in their appearance, and free from the attacks of insects or disease.

The Osage Orange may readily be propagated by seeds, from which it will grow sufficiently large in three years to form a hedge. It succeeds best on land moderately rich, such for instance, as will produce good Indian corn; but it will grow in almost any soil that is not too moist. The line of ground, intended for a hedge, should first be dug and well pulverised, say from 12 to 15 inches deep, and two feet wide, along the centre of which the plants may be set, at the distance of one foot apart.

The seeds, before sowing, should be soaked in water, in a warm room, for four or five days; or they may be mixed with equal parts, by measure, of sand, and exposed a few weeks, in open boxes, to wintry weather, on the sunny side of a building, in order to freeze and thaw. It is preferable to sow them early in the spring, in a garden or nursery, where they will shortly germinate and form young plants. These should carefully be weeded or hoed during the first season's growth, and transplanted in the hedge-line in the month of March or April of the following year.—*Exchange paper.*

A Nut for the Curious.—A singular phenomenon occurred this spring at the farm of Martin Mull, Esq., in Falls township. His orchard is composed of the usual varieties. The blossoms on one of the fall pippin trees, which bears excellent fruit, has been peculiarly fatal to nearly all the bees of every description that have visited it—the bumble-bees in an especial manner. The ground is thickly strewed with the dead. The bees, after visiting several blossoms in their usual way, would be apparently attacked with *vertigo*, as if they had taken a deadly narcotic, and descend in spiral circles to the ground. Some would be dead very soon, others would linger a considerable time before they would die; and but few would recover to escape. The tree is now thickly set with young fruit. No other trees in the orchard produced such, or similar effects on the bees, nor was it ever observed before on the tree in question—*Doylestown Democrat.*

The Horse.

BY R. L. PELL.

In changing the food of my horses from green to dry, and vice versa, I am particularly careful in seeing that it is done by degrees, as on one or two occasions I have noticed that an *immediate* change has produced hoven in cattle, though I have not observed any ill effects in horses. Still, I think it best to break off gradually. If, for instance, you are feeding corn, add green food a short time before you intend to make the change, and increase it constantly while you diminish the corn. Horses, when soiled, should be fed in small quantities, and often. An immense advantage gained in soiling horses is, that you have them always at hand when required for labour, and not having enjoyed leisure in the fields, they never show any indisposition to render themselves useful; the time lost in catching them when required, is frequently severely felt by the farmer. I have known half a day consumed in this way, by a hard working man, and all his farm help. Still, as his grandfather never soiled his horses, he would not, but contented himself by declaring the horse should never go unhoppled again. Hoppling is a result of pasturing. It is a bad practice, and ruinous to the gait of any animal, besides rendering him incapable of defending himself properly from the flies; the consequence is, he becomes poor in flesh, and a disgrace to his hard-hearted stubborn master.

If the farmer will not *take my advice* and soil his horses constantly, for his own advantage, he should do it partially. He should cut grass for them during the day, and turn them into some well clothed meadow at night. Thus they will escape the detestable fly, and enjoy some quiet and ease, and be enabled to select grasses more congenial to their tastes, than those he had cut for them. In the agricultural report for Essex, in England, it is said, that two horses have been supported during four months upon a quarter of an acre of lucerne, with scarcely anything given to them besides; and that six horses, at hard work, have been kept on lucerne, instead of hay, but with an allowance of oats and cut straw for twelve weeks; six from the first cut, four from the second, and two from the third: which, valuing the hay saved at six shillings per horse per week, would amount to $36. A paper in the communications to the Board of Agriculture in England, states, that in one year, 23 horses have been kept 20 weeks, and in the next, 28 horses during 18 weeks, upon eleven acres alone; which gives an average of three roods per horse in nineteen weeks. An ordinary sized cart horse could consume easily 100 lbs. of green food of any kind in one day, and a small allowance of oats, say two quarts. If the same horse was allowed to run over a three acre field, he would probably destroy three hundred pounds of food, while obtaining one hundred. I have found that a square rod of ground, covered with a luxuriant crop of grass, is sufficient to last a horse one day, with a small quantity of oats.

The English cavalry allow their horses in barracks 12 pounds of hay and 10 pounds of oats per day, on which, they say, they are kept in high condition. I cannot imagine it possible, as in 1,000 parts of the best grass, there are only 82 parts of soluble nutritive matter, 72 parts of mucilage or starch, 4 parts of saccharine matter, and 6 parts of insoluble matter. If the cavalry horses stood still, I should imagine that quantity of food might be sufficient, as inactive horses require much less food than horses that are employed. The bodies of horses are all the time wasting, and the waste is proportioned to the activity of the animal; therefore the working horse requires nourishment proportional to the waste of his body. A horse soiled will consume as much food as eight sheep: a cow in milk as much food as twelve sheep: an ox when fattening, as much food as ten sheep: a calf as much food as two sheep.

When you go upon a farm, and find the farmers' horses looking plump, well formed, high spirited, and powerful, you are apt to say at once, that horse must have come from prime stock; whereas the credit is entirely due to the farmer, as you may take an animal bred from the best stock in existence, and if allowed by the farmer to suffer deprivation of proper food, he will never become perfectly developed, either in bulk or proportion. He will never be free from disease, and will not have any constitution. The same rule will apply to all kinds of animals, whether man or beast. When, therefore, you find on a man's farm, fine stock, well proportioned, and of the standard size, you must award him the credit, and not the breed. You may take an animal of the most inferior kind, and by judicious use of nutritive food, make him attain great size; for examples, look at our monstrous hogs, made sometimes to weigh 1,100 lbs.; our immense prize oxen which have reached more than 3,000 lbs., the parents of which are frequently moderate in size. Who will say this degree of perfection was not produced by the farmer.

It is from artificial feeding that our markets are supplied the year round with fine beef, pork, calves and sheep, and the same

farmers who now raise these animals in open fields, could, by soiling them, add 20 per cent. to their profits, provided the crops they raise for the purpose are supplied, while growing, with proper nutriment, from which they can assimilate organic or inorganic matter. The animal derives his strength, his growth, and his bulk from the sustenance afforded by these crops. From every 1,000 parts of gluten a horse consumes in his food, he receives 557 parts of carbon, 78 parts of hydrogen, 220 parts of oxygen, and 145 parts of nitrogen. By manuring his crops with highly nitrogenized substances, the farmer adds vastly to the amount of gluten. If horses be kept fat in winter, their bones and muscles will be defended against cold, and the acids of aliments will be so tempered, as to strengthen and maintain their whole frame. Let it be remembered that the horse is a native of warm climates, and do not, as is usual among farmers in our northern States, turn them out in the barn-yard to obtain a scanty allowance of poor coarse food during the winter. They are liable to numerous diseases which are not unfrequently brought on by such injudicious and cruel management. When once diseased, it is almost impossible to find out what that disease is, as his structure is amazingly complicated. There are but two indications showing internal disorder; the one is an indisposition to work, and the other a refusal to eat. When either of these signs is manifest, you must at once let the animal rest, and search for his disorder, and on no account compel him to labour. Soil your your horses, feed them during winter on a variety of food, such as oats ground and whole, bran, ship stuff, beans, peas, turnips, carrots, potatoes, and parsnips, occasionally steamed separately, and together. In summer, keep them always confined in airy stables, and feed them clover, rye grass, bruised grains, green corn stalks, cider pumice, oil cake, hay, &c. Be particular to give them three-fourths of a pound of salt per week, occasionally two ounces of sulphur, and frequently two ounces of wood ashes. By good keep and judicious management, a pair of horses, perfectly sound when young, will last and labour constantly twenty-five years, and to the end will retain their spirits. I have a pair of bay horses on my farm, that are now 20 years old, during which time they have never been depastured, and have worked daily; they have never been incapacitated for work by lameness, or disease of any kind, and have always been perfectly sound and healthy. If driven through Broadway, New York city, they would attract general attention. I have another pair of sorrels that are 18 years old, which labour daily, and will do as much work as any pair of six years old in the town in which I reside. Dr. Hosack, when he died, left a horse 28 years old, which I have frequently seen, and which was a very pretty animal, and would have passed for a middle age horse to any casual observer. Mr. Youatt quotes the record of a horse that received a ball in his neck at the battle of Preston, in 1715, which was extracted at his death, in 1758; he was, consequently, more than 43 years old.

I have made the following rules for my own governance:

1st. The stable in which horses are kept should have a southern exposure. The ground ought to slope gradually from it to carry off the moisture. It should be kept perfectly dry, as dampness is exceedingly detrimental to horses, and will engender numerous diseases.

2nd. The stable for valuable carriage or race horses, should never contain more than five stalls, and a sixth one ought always to be constructed of greater size for one of them if somewhat indisposed. If particularly sick, he should be removed; as contagion might be imparted to the others. If a stable contains a number of stalls, when five or six horses are on duty, the temperature would be so changed as to endanger the health of those remaining.

3rd. The stalls should be five feet six inches wide, and always arranged on one side, instead of being placed opposite to each other with an alley between as is usual, for the reason that horses ought not to breathe each other's breath. The carbonic acid gas exhaled would be detrimental to them, and if one should happen to be diseased, the others might, by constantly inhaling his breath, become infected.

4th. Stone floors should on no account be used in stables, for the reason that they are exceedingly cold, and apt to induce catarrhs, besides being slippery in winter, causing falls, and often injuring limbs. Three inch pine or spruce plank, tongued and grooved, should be laid perfectly level, after which a slight gradual slope may be planed leading to the centre, where a grating of iron bars, one-eighth of an inch apart, should be firmly set in a frame so that it may be taken out at pleasure, through which the moisture would pass into a drain under the floor leading into a cistern; traps must be so constructed in the drains underneath, that the ammonia may not rise; if it does, and there is no ventilation above for it to escape, the horses will become blind after much exposure.

5th. The stable must be airy, and to make it so, there should be a window at either

end, covered with copper wire cloth, which will not rust and corrode, and a ventilator above to carry off, as it ascends, the impure air, which, being lighter than the atmosphere, immediately rises to the ceiling, and will at once escape if an opportunity is afforded it. If there is danger of too much air being admitted by the windows, the bottom of the stable door may be latticed with the slope turned upwards, and covered with copper wire cloth, which will cause the unwholesome gases to rise immediately to the ventilator. Five horses will, in a very few hours, destroy the vital principle of air in a confined, close stable. The carbonic acid gas ejected from their lungs, is a deadly poison, and totally unfit to be again received by respiration. It is not only their breath that must be avoided in stables, but the exhalations continuously arising from their bodies. It should be generally understood that pure air is as necessary to horses as to human beings.

6th. Stables must be kept comparatively speaking, light, and of equal temperature; in summer about 65 degrees, and in winter from 45 to 55 degrees. If this rule is not observed, the horses will suffer with rheumatism, stiff joints, inflammation of the lungs, and numerous other diseases. It should be recollected, that we have no domestic animal existing in a more artificial state than the horse, or one requiring more care and attention. It is very rare that a horse is found useful to man after he is 14 years old, when by observing a few rules, and following them strictly, he may be made to last and labour constantly until 25 years of age.

7th. Never trust your horses to any other than an experienced groom; let his duties be as follows:

1st. At day light in the morning, to place hay in the rack, in order that the horse may distend his stomach to the proper proportion before he receives his oats. If oats are first fed, he will satisfy himself with them, and not relish the hay; the consequence will be, he will present a gaunt and half fed appearance during the day, annoying not only the coachman, but the master.

2nd. To clean the stable, to carry out all the straw litter, separate the dry from the wet, place the wet in the manure heap, and expose the dry in the open air for the ammoniacal gas to escape, and purify it for use as bedding at night; sweep the stable perfectly clean, spread a thin coat of charcoal dust in the stalls, to absorb the ammonia. The usual mode is to roll the wet litter day after day under the manger, and force the horse to inhale the gas arising from it, often entailing disastrous consequences, besides infecting his food, and rendering it unpalatable. Sufficient time having elapsed while the groom was clearing his stable for the animals to consume their hay, he proceeds.

3rd. Water the horse, and immediately after give him his usual feed of oats or other grain.

4th. Curry and brush the horse thoroughly, and well rub his legs, in order that the pores of the skin may be opened, the scurf removed to excite insensible perspiration, and the blood caused to circulate freely. Wash his eyes and nostrils with a sponge, to free them of dirt; take out all the sand and dirt that may have become fastened in and under the shoe, and comb his tail and mane. This rule may appear superfluous; still, next to food, it is the most important, and must be insisted upon by the proprietor, if he desires his horse to enjoy health, strength, constitution, and a fine glossy coat. High grooming and exercise fit the racer and trotter for the endurance of the fatigue of their great exploits, and show the importance of care at all times to horses.—*N. Y. Agricultural Transactions.*

The Boy and Man.

A few years ago, there was in the city of Boston, a portrait painter, whose name was Mr. Copley. He did not succeed well in his business, and concluded to go to England to try his fortunes there. He had a little son, whom he took with him, whose name was John Singleton Copley.

John was a very studious boy, and made such rapid progress in his studies, that his father sent him to college. There he applied himself so closely to his books, and became so distinguished a scholar, that his instructors predicted that he would make a very eminent man.

After he had graduated, he studied law. And when he entered upon the practice of his profession his mind was so richly disciplined by his previous diligence, he almost immediately gained celebrity. One or two cases of great importance being entrusted to him, he managed them with so much wisdom and skill as to attract the admiration of the whole British nation.

The king and his cabinet seeing what a learned man he was, and how much influence he had acquired, felt it to be important to secure his services for the government. They, therefore, raised him from one post of honour to another, till he was created Lord High Chancellor of England, the very highest post of honour to which any subject can attain. About sixty years ago he was a

little boy in Boston. His father was a poor portrait painter, hardly able to get his daily bread. Now, John is at the head of the nobility of England; one of the most distinguished men in talent and power in the House of Lords, looked upon with reverence and respect by the whole civilized world. This is the reward of industry. The studious boy becomes the useful and respected man.

Had John S. Copley spent his school-boy days in idleness, he probably would have passed his manhood in poverty and shame. But he studied in school, when other young men were wasting their time; he adopted for his motto, "*Ultra pergere*," (*press onward*,)—and how rich has been his reward.

You, my young friends, are now laying the foundation for your future life. You are every day at school, deciding the question, whether you will be useful and respected in life, or whether your manhood shall be passed in mourning over the follies of mispent boyhood.—*John S. C. Abbott.*

The Potatoe.

Mr. Editor,—While the rain and hail are falling without, suspending my farming operations, I seat myself within, with the view of eliciting information concerning the *sweet potatoe*, from you or some of your correspondents. Its cultivation and use, so far as my information extends, were unknown until the discovery of America by Columbus, since which time, the only method known to me of obtaining the seed, has been simply from the cutting of the potatoe itself, or from slips produced from the vine. But as this is nothing more than a continuation of the plant, it is highly probable that it will degenerate, or has degenerated; for this we observe to be the case with the most of plants produced in this way. It is well known that the vine has blossoms, and some writers assert that they also have seed; and if this be correct, it is my opinion that planting these seed would be the better way to continue the potatoe pure and undegenerated; and it is upon this point that I desire information, i. e., whether planting the seed obtained as above stated, has ever been tried, and if so, how it succeeded.

It is said by some, that the only potatoe whose vines produce blossoms is the *yam;* but although this is not correct, it may be that the yam does produce more than any other kind; and it may be accounted for from the fact, that this potatoe is often raised differently from the other kinds; which may have had a tendency to continue it in its pure state. Upon this presumption, it is highly important that a different plan be pursued to obtain seed, or in process of time the potatoe may become of little or no use to us.

Now, it is certain that the Irish potatoe produces small black seed, and it is asserted, that by planting these, very small potatoes are produced, and by again planting them, you obtain a much finer potatoe than by planting in the usual way. If this be correct, with regard to the Irish potatoe, it may be with the sweet potatoe also; hence my inquiry. As information is my sole object in this communication, I forbear saying more, but will leave the subject to others more able to do justice to it than myself.—*S. Carolina Advocate.*

From the N. Y. Agricultural Transactions.

Butter Dairies and Butter.

The undersigned, having observed by the proceedings of the executive committee of the New York State Agricultural Society, that they offer premiums for the best butter dairies, is induced (having been engaged in butter making) to offer the following statement for the consideration of the committee on butter dairies:

My farm is located in the valley of New Lebanon, Columbia Co., in about 42½°; contains about 180 acres of improved land, which is composed of a variety of soils, viz: an alluvial clay loam on the flats,—about one-third of the whole,—which are generally kept in meadow. The other portions are gravel loam and slate and gravel, with the exception of some 20 acres, which are wet clay and gravel pastures with a hard subsoil, bearing the variety of grasses usual on wet pastures. The other pastures used, are ploughed and cropped in their rotation, say two years in every five, and are stocked with clover and herds grass. Hay used, clover and herds, with a slight mixture of red top on the low grounds.

My dairy is composed of 16 cows; three three-years old heifers, and two two-years old. Cows of native breed, one full blood short horned heifer, the others half bloods; the full blood heifer suckled her own calf and another, a half blood, through the season. One of my best cows lost her udder before the 1st of August, by the kine pox, which disease very much injured the whole dairy for some five weeks. I also parted with one cow the last of September.

Estimating the four heifers to be equal to three cows, I had no more than 19 cows through the whole season. Add to this the hottest weather ever experienced for the

same length of time, and a severe drought for some five weeks, and I believe I have enumerated all the disadvantages under which I laboured.

The feed of the cows was hay, grass, and dry corn stalks, with the exception of 30 two-horse wagon loads of pumpkins. The product was as follows:

3,189 lbs. of butter, sold in Boston market, at an average price of 19¾ cents per lb., which price perhaps is a fair criterion by which to judge of its quality,	$621 84
20 calves sold and two raised,	91 50
Cream and milk used in a family of 10 persons, at 15 cts. per day,	54 75
Skimmed milk and buttermilk fed to the hogs 215 days, at $1 30 per day,	279 50
	$1,047 59

The average quantity of milk from each cow per day, for 215 days, 26 lbs. Aggregate quantity for each cow, 5,590 lbs. Quantity of butter to the 100 lbs. of milk, 3 lbs. 3 oz. Gross quantity of milk and butter, 109,395 lbs.

Method of making.—Room used, kept as near a temperature of 60° as may be. Milk strained into a large can placed in the milking yard, which adjoins the milk room, inside of which it is drawn by means of a conductor and faucet into the pans, usually about eight quarts into each pan; it is drawn over ice placed in the can whenever the temperature requires, consequently the cream rises in much less time than when cooled in the ordinary way. It ought to stand thirty-six hours before being skimmed, but this time must be varied occasionally, as the weather changes. It should be skimmed when the milk is slightly changed and before it is coagulated. The cream is put into stone jars and placed in a refrigerator in contact with ice, until it is churned, which is done every second or third day. Churn used, a circular one with revolving arms or paddles, framed into a shaft of *wood;* cream should never come in contact with iron. The motive power is a platform wheel turned by a small horse. The butter is salted with ground rock salt, passed through a fine sieve, that there may be no lumps or particles that will not dissolve. (How often have you had your teeth set on edge by coming in contact with a lump of salt, in otherwise good butter?) It is salted to suit the taste and the market,—which requires it very mild unless it is designed for keeping a longer time than usual;) it is then placed in the refrigerator and kept cool until it is taken out, worked on an inclined table with a break, packed in new tubs containing 25 lbs., and sent to market, which is done every week, always using ice in every part of the process, the weather requiring it.

The committee will be better able to judge of the value of the milk and buttermilk, for hog feed, when I state that I have sold pigs, pork and lard, to the amount of $1,063.09, at an expense of $667, for purchase money and feed, other than milk, and that my hogs have made, of the feed and materials given them to *work*, near 300 half-cord loads of manure; *the value of which every farmer ought to know.*

All of which is respectfully submitted.

B. H. Hall.

New Lebanon, Jan. 8th, 1847.

Early Weeding—Stirring the Soil.

A great deal is gained by early weeding. When weeds first start they may be easily destroyed, and if the land has been recently ploughed and planted, it will be light and mellow, and the hoeing it an early period requires but little time, compared to what is necessary when the weeds have become large and almost formed a sward, and the earth has become compact and hard. Another disadvantage in delaying weeding till late, is the hiding of the plants by the luxuriant weeds. In some cases the plants cannot be found without diligent search, and then, perhaps, the weeds cannot be removed without *radically* disturbing the plants, which from their fragile forms, growing in the shade of tall weeds can hardly stand alone.

Besides the great saving of labour in weeding early, there is a great advantage to the crops, for most all plants that stand in a good soil, free from weeds, will grow twice as fast for stirring the soil around them. When there are no weeds, plants will come up, grow a little, and then remain almost stationary for weeks, when a little stirring of the soil around them would give them a start and cause a luxuriant growth. This is often shown by part of a row or piece of land being hoed while another part is left. So great a difference is sometimes produced by merely stirring the soil, that the casual observer has supposed that there was a difference in the manure, time of planting, or something else which he would regard as more important than the mere stirring of the soil, as he would regard it.

We have an account of a trial between two cultivators who competed for the greater success under the same circumstances as to soil, manure, seed, &c. One thought to excel by hoeing his lot twice a week, aware of

the great advantage of frequently stirring the soil; but he was much surprised to find that he had been beaten, and was anxious to learn the management of his competitor, which was his own plan carried to a greater extent, for he had hoed his lot every morning.

Farmers will find it profitable to prepare their lands, and arrange their plants so that most of the labour in destroying weeds, and stirring the soil, so essential to successful cultivation, may be done by animal labour. In this there will not only be a saving of expense, but a greater profit by a large crop, for by the use of a cultivator or plough between rows, the soil will be stirred deeper than by the hoe, and it may be done more frequently also. A good steady horse, in a well arranged field, in the hoeing season, will do as much as several men.—*Boston Cultivator.*

Improvement of Fruit.

In the whole range of cares and pleasures belonging to the garden, there is nothing more truly interesting than the production of new varieties of fruit. It is not, indeed, by sowing the seeds that the lover of good fruit usually undertakes to stock his garden and orchard with fine fruit trees. Raising new varieties is always a slow, and, as generally understood, a most uncertain mode of bringing about this result. The novice plants and carefully watches his hundred seedling pippins, to find at last, perhaps, ninety-nine worthless or indifferent apples. It appears to him a lottery, in which there are too many blanks to the prizes. He, therefore, wisely resorts to the more certain mode of grafting from well known and esteemed sorts.

Notwithstanding this, every year, under the influences of garden culture, and often without our design, we find our fruit trees reproducing themselves; and occasionally, there springs up a new and delicious sort, whose merits tempt us to fresh trials after perfection.

To a man who is curious in fruit, the pomologist who views with a more than common eye, the crimson cheek of a peach, the delicate bloom of a plum, or understands the epithets, rich, melting, buttery, as applied to a pear, nothing in the circle of culture, can give more lively and unmixed pleasure, than thus to produce and to create—for it is a sort of creation—an entirely new sort, which he believes will prove handsomer and better than any thing that has gone before. And still more, as varieties which originate in a certain soil and climate, are found best adapted to that locality, the production of new sorts of fruit, of high merit, may be looked on as a most valuable, as well as interesting result.

Beside this, all the fine new fruits, which, of late, figure so conspicuously in the catalogues of the nurseries and fruit gardens, have not been originated at random and by chance efforts. Some of the most distinguished pomologists have devoted years to the subject of the improvement of fruit trees by seeds, and have attained if not certain results, at least some general laws, which greatly assist us in this process of amelioration. Let us therefore examine the subject a little more in detail.

In the wild state, every genus of trees consists of one or more *species*, or strongly marked individual sorts; as, for example, the white birch and the black birch; or, to confine ourselves more strictly to the matter in hand, the different species of cherry, the wild or bird cherry, the sour cherry, the mazzard cherry, &c. These *species, in their natural state*, exactly reproduce themselves; to use a common phrase, they "come the same" from seed. This they have done for centuries, and doubtless will do forever. so long as they exist under natural circumstances only.

On the other hand, suppose we select one of these *species* of fruit trees, and adopt it into our gardens. So long as we cultivate that individual tree, or any part of it, in the shape of sucker, graft, or bud, its nature will not be materially altered. It may, indeed, through cultivation, be stimulated into a more luxuriant growth; it will probably produce larger leaves and fruit; but we shall neither alter its fruit in texture, colour, or taste. It will always be identically the same.

The process of amelioration begins with a new generation, and by sowing the seeds. Some species of tree, indeed, seem to refuse to yield their wild nature, never producing any variation by seed; but all fruit trees and many others, are easily *domesticated*, and more readily take the impress of culture.

If we sow a quantity of seed in garden soil of the common black mazzard cherry,—*Cerasus avium*,—we shall find that, in the leaves and habit of growth, many of the seedlings do not entirely resemble the original species. When they come into bearing, it is probable we shall also find as great a diversity in the size, colour and flavour of the fruit. Each of these individual plants, differing from the original type,—the mazzard,—constitutes a new *variety;* though only a few, perhaps only one, may be superior to the original species.

It is worthy of remark, that exactly in

proportion as this reproduction is frequently repeated, is the change to a great variety of forms, or new sorts increased. It is likely indeed, that to gather the seeds from a wild mazzard in the woods, the instances of departure from the form of the original species would be very few; while, if gathered from a garden tree, itself some time cultivated, or several removes from a wild state, though still a mazzard, the seedlings will show great variety of character.

Once in the possession of a *variety*, which has *moved out* of the natural into a more domesticated form, we have in our hands the best material for the improving process. The fixed original habit of the species is broken in upon, and this variety which we have created, has always afterwards some tendency to make further departures from the original form. It is true that all or most of its seedlings will still retain a likeness to the parent, but a few will differ in some respects, and it is by seizing upon those which show symptoms of variation, that the improver of vegetable races founds his hopes.

We have said that it is a part of the character of a species to produce the same from seed. This characteristic is retained even where the *sport*,—as gardeners term it,—into numberless varieties is greatest. Thus, to return to cherries, the Kentish or common pie-cherry, is one species, and the small black mazzard another; and although a great number of varieties of each of these species have been produced, yet there is always the likeness of the species retained. From the first we may have the large and rich Mayduke, and from the last the sweet and luscious Black-Hearts; but a glance will show us that the duke cherries retain the distinct dark foliage, and in the fruit, something of the same flavour, shape and colour, of the original species; and the heart cherries the broad leaves and lofty growth of the mazzard. So too, the currant and gooseberry are different species of the same genus; but though the English gooseberry growers have raised thousands of new varieties of this fruit, and shown them as large as hen's eggs, and of every variety of form and colour, yet their efforts with the gooseberry have not produced anything resembling the common currant.

Why do not varieties produce the same from seed! Why if we plant the stone of a Green Gage plum, will it not always produce a Green Gage! This is often a puzzling question to the practical gardener, while his every day experience forces him to assent to the fact.

We are not sure that the vegetable physiologists will undertake to answer this query fully. But in the mean time we can throw some light on the subject.

It will be remembered that our garden varieties of fruits are not natural forms. They are the artificial productions of our culture. They have always a *tendency to improve*, but they have also another and a stronger *tendency to return to a natural or wild state*. "There can be no doubt," says Dr. Lindley, "that if the arts of cultivation were abandoned for only a few years, all the annual varieties of plants in our gardens would disappear and be replaced by a few original wild forms." Between these two tendencies, therefore, the one derived from nature, and the other impressed by culture, it is easily seen how little likely is the progeny of varieties always to reappear in the same form.

Again, our American farmers, who raise a number of kinds of Indian corn, very well know that, if they wish to keep the sorts distinct, they must grow them in different fields. Without this precaution, they find on planting the seeds produced on the yellow corn plants, that they have the next season a progeny, not of yellow corn alone, but composed of every colour and size, yellow, white and black, large and small, upon the farm. Now many of the varieties of fruit trees have a similar power of intermixing with each other while in the blossom, by the dust or pollen of their flowers, carried through the air, by the action of bees and other causes. It will readily occur to the reader, in considering this fact, what an influence our custom of planting the different varieties of plum or of cherry together in a garden or orchard, must have upon the constancy of habit in the seedlings of such fruits.

But there is still another reason for this habit, so perplexing to the novice, who, having tasted a luscious fruit, plants, watches and rears its seedling, to find it perhaps, wholly different in most respects. This is the influence of *grafting*. Among the great number of seedling fruits produced in the United States, there is found occasionally a variety, perhaps a plum or a peach, which will nearly always reproduce itself from seed. From some fortunate circumstances in its origin, unknown to us, this sort, in becoming improved, still retains strongly this habit of the natural or wild form, and its seeds produce the same. We can call to mind several examples of this; fine fruit trees whose seeds have established the reputation in their neighbourhood of fidelity to the sort. But when a *graft* is taken from one of these trees, and placed upon another stock, this grafted tree is found to lose its singular power of producing the same by

seed, and becomes like all other worked trees. The stock exercises some, as yet, unexplained power, in dissolving the strong natural habit of the variety, and it becomes like its fellows, subject to the laws of its artificial life.

When we desire to raise new varieties of fruit, the common practice is to collect the seeds of the finest table fruits—those sorts whose merits are everywhere acknowledged to be the highest. In proceeding thus we are all pretty well aware, that the chances are generally a hundred to one, against our obtaining any new variety of great excellence.—*Downing's Fruit Trees.*

From the Cultivator.

The Farm of Clark Rice, Esq.

Messrs. Editors,—I was much gratified, in a recent visit to the farm of Clark Rice, Esq., in Dummerston, Vt., to find so triumphant an illustration of the profitable results of enterprise and good judgment, in seizing hold of the natural advantages of the farm, and appropriating them to use. These advantages consist in an abundant supply of swamp muck of fine quality, and the power to obtain and hold a large quantity of *surface water* for the purpose of irrigation. Mr. Rice's farm is mainly a grass farm, hay being the most profitable crop for his location and soil, and his operations are therefore conducted with a view to the raising of a large burden of grass, of good quality.

He has recently erected new barns which are remarkably convenient and well arranged; the main barn is 160 feet in length, east and west, by 30 feet in width, with ample shed lofts, and a horse barn and carriage house annexed. The ground upon which the barn is built is descending to the east, and under a portion of it is spacious barn cellar for the manufacture of compost, 100 feet long by 30 wide, open 24 feet on the southeast end; the lower side, or east end of the barn-yard, being on a level with the cellar bottom, affords a convenient passage into and out of it from the yard.

The liberal use of muck enables Mr. Rice to sell off large quantities of hay without detriment to the farm. He usually winters from 30 to 40 head of cattle, however, about half of which are stall fed, and the manure from these, composted with muck, together with other means of making compost hereafter described, affords him all the manure necessary for the improvement of his land, making and applying about 500 loads annually.

Management of muck.—His bed of muck covers a number of acres from six to eight feet in depth, and is a vegetable deposit of the finest quality. The original growth of timber on the adjoining land, was hard wood mainly, and whatever wash there may ever have been of an extensive area of higher land around the swamp, would naturally flow into it. Excellent arrangements have been made for the thorough drainage of the swamp, which will be more particularly described in speaking of his system of irrigation. The main body of the muck, except from March to the middle of June, when the gates are shut and the swamp filled with water for irrigation, lies high and dry from moisture to the depth of five or six feet, and can be got out at any time of the year, when most convenient to do the work. Two or three times in the course of the winter, a quantity sufficient for a layer of a foot in depth over the whole cellar, is taken directly from the swamp on sleds, and thrown in, it being but a short distance from the barn, and the ground a little descending.

In the fall, a coat of muck a foot in depth, is deposited over the cellar bottom, and when a sufficient quantity of manure has accumulated under the scuttles in the stable floors to cover the muck eight or ten inches thick, the same is spread, and another coat of muck put over the manure; repeating these operations from time to time, through the winter and spring, until the cattle are turned to grass. An immense quantity of compost is thus formed, and, judging from the smell and appearance, of the finest quality. A part of the muck is dumped through a scuttle in the barn floor into the cellar, and a part is thrown in through windows in the underpinning, and what cannot be conveniently spread from these heaps with the shovel, is taken up on wheel-barrows, running on a plank, and distributed in due proportion; the design being to incorporate two parts of muck to one of manure. A larger proportion of muck is kept under the stable floors, where the urine flows, than elsewhere, and this saturated muck is spread into the middle of the cellar from time to time, in order to equalize the whole mass.

The compost lays in this state until after the spring work is done, when at odd jobs, such as rainy days and other days of leisure, it is forked over from end to end. After haying, it is carted out on to the land where wanted for the next spring's use. None of it is applied to the soil until a year old—Mr. Rice being of opinion that composts, where large proportions of muck are used, require to be fully ripened by age and fermentation, in order to derive the greatest benefit from their application to the soil.

Mr. Rice has been in the habit of applying 50 loads to the acre; 25 loads spread on the turf and ploughed in, and 25 loads spread on the furrows and harrowed in. He has come to the conclusion, however, from recent trials, with a view to ascertain the proper depth to bury compost, that he shall in future introduce the plough two or three inches deeper in breaking up his sward land, which his present facilities for making compost will warrant, and spread the whole dressing on top of the furrow, incorporating it thoroughly with the soil above the sod.

The building appropriated to the horse barn and carriage house, has a cellar under the whole of it, and the manure of two or three horses goes into the part under the stables, into which muck is also thrown, from time to time, and six or eight working hogs are faithful to their business of mingling and pulverizing the materials with which they are supplied. Bedding is freely used under the horses to augment the mass. Under the carriage house is the feeding apartment, also a kettle and arch for cooking their feed, and storage for the materials.

There is still another cellar adjoining this, which receives all the wash of the house and the night soil, and which is liberally supplied with muck to absorb it as occasion requires. The objection to such places generally is that they are difficult of access, but in this case it is entirely obviated, the cellar being sufficiently capacious to back a cart into it.

The barn-yard is constructed differently from any I have before seen. The main yard, where the fatting cattle run, is slightly descending to the east to another yard, which is well supplied with muck, and is calculated to receive the wash or superabundant moisture of the former. This arrangement gives him a yard free from mire and water, which at certain times is deemed essential to the comfort of the fat cattle, and to his own comfort and convenience in carting to and from the barn such large quantities of hay, &c. During the day the coarser forage of the farm is mainly fed out in the lower yard to the cows and young cattle which run there, and the refuse of it is incorporated with muck by the treading of the cattle. Occasionally in the course of the winter, a moderate coat of muck is spread over it, this being deemed better policy than to put the whole quantity of muck that the yard will bear into it at once, in the fall. After planting in the spring, the contents of this yard are carted out into a heap for fermentation; it is immediately supplied with muck again, and the cows are yarded on it over night through the summer, excepting when too wet and miry from heavy rains, when they are for a few days turned into the upper or dry yard. In the fall, the contents are again carted out, and a fresh covering of muck put in for winter. The litter, &c., of the upper yard is also carted out in the spring and composted with muck, in all cases designing to use two parts of muck to one of manure.

Irrigation.—Mr. Rice's system of irrigation is in the highest state of perfection. At the breaking up of winter quite a brook is formed from the rains and melting of the snow. It may be termed surface water from the adjoining high lands, and probably its marked effects in increasing the quantity and quality of grass, may be attributable in a great measure, to the fact that it is thus formed, and not a living stream fed by springs.

A large embankment of earth has been thrown up on the lower side of the swamp, the other sides being surrounded by higher lands, and thus a large reservoir is made into which this temporary stream is conducted, and with which it is filled in March, and after, to the depth of several feet. Gates are constructed in the embankment to draw off this accumulation of water as wanted for irrigation, and they are also calculated for the thorough drainage of the swamp. The water is conducted in ditches at different heights, over 50 acres of grass land, which lies more or less descending from the swamp. The ditches run across the land at right angles with its descent, and the water is taken out of them by small outlets, made at suitable distances in the lower sides, so as to flow gently over the whole land.

The water is not let on the land till after the frost is out in the spring, on account of its liability to wash holes by getting under the frozen ground; neither is it continued on the land after about the middle of June, or when the grass has grown so as to cover the ground completely; if continued on longer, the quality of the hay is injured. Mr. Rice considers that the greatest benefit is derived from the irrigation in April and May, on account of the early and vigorous growth it imparts to the grass; this effect is no doubt increased greatly from the fact that the temperature of the water is considerably *warmer* by standing in the reservoir.

Care and judgment is necessary in managing the irrigation. Mr. Rice frequently passes over the land when under the process, and if any part of it is getting overcharged with water, it is taken off, or if any part is not receiving its portion, the same is supplied as soon as discovered. When heavy rains occur during the irrigation, it is stop-

ped for a time; the object being not to drown the grass roots at all, but to keep them gently moistened.

The contrast between the irrigated land and the land adjoining, which is above the highest ditch and cannot be flowed, is very striking. The latter, although lying more level, and oftener ploughed and manured, will not cut as much grass by one-half as the former, neither is the quality as fine. The irrigated land can be kept in productive mowing, much longer than other parts of the farm that have not the benefit of the water, it is occasionally ploughed and manured, however, and goes through a rotation of crops—no water being let on to any portion that may be under a state of tillage, until it is again in grass. The crop of grass on the irrigated land is not affected by any drought, however severe, that may occur after the water is taken off,—the land having been well saturated, and the grass completely covering it, prevents the moisture from evaporating. The burden of hay is very heavy, and the quality excellent; the tendency of the irrigation being to produce a thick and fine bottom.

Seeding to grass in August.—Mr. Rice has several acres of grass land too moist to plough and cultivate in the spring. He obtains fine crops of hay from this land by ploughing it in August, when a light coat of compost is spread on top of the furrows and harrowed in; the land is then stocked down to grass again, without sowing to grain. The new seeding is fit for the scythe the next season, although later than the old fields. The process is repeated about every fifth or sixth year, or as often as the more valuable grasses are supplanted by wild grass. He considers this by far the best management of a moist soil.

Improvement of a light, hungry soil.—He has a piece of land rather inconveniently situated to get at with manure, upon which he is trying the following experiment to redeem it from a state of comparative sterility: it is sowed to rye in the fall, and stocked with clover early in the spring; the grain is taken off the next harvest, and the next year after, the growth of clover is ploughed in and the same process repeated. The plan has proved very satisfactory thus far, the land yielding more than double the crop it did five or six years ago.

Planting a forest.—Mr. Rice had, a few years ago, a piece of side hill in pasturing, of rather thin unproductive soil, which he ploughed up and sowed to rye, at the same time planting to chesnuts in rows about four feet apart. After the rye was taken off the land was left to run up to a forest. The first growth or sprout from the chesnut was rather crooked and scrubby; but by cutting it close to the ground new sprouts started which grew straight and thrifty, and there is now a good prospect of a fine growth of chesnut timber—an article which is becoming more and more valuable in this section of country.

I have thus given a very imperfect sketch of some of the more important operations of this intelligent and prosperous farmer. His enterprise and skill in the use and application of his muck, together with the appropriation of his natural advantages for irrigation, have told wonderfully upon the productiveness and profit of the farm. Some twenty years ago he commenced operations on a worn-out farm, the whole produce, all told, not filling the barn then on the place, 60 by 30 feet, and now, with all his ample barn room, he has none to spare. Among other things, his operations show in a striking manner, the great advantage to be derived on our worn-out soils, from a liberal and judicious use of *swamp muck*, and the importance and profit attending a strict husbandry of all the resources on the farm for making and saving manure.

In the language of the chairman of the committee of our agricultural society, for awarding premiums on manure: "Every animal in the house or in the barn, on this farm, contributes something to swell the immense heap." "We hope our farmers will soon learn that the process of making manure is not an impoverishing, but an *enriching* process, as is proved in the case of Mr. Rice, of whom his neighbours used to prophecy that his muck-hole would send him to jail. It has proved, however, that in digging muck, he was digging money, instead of landing in jail."

It is evident to any one, in conversing with Mr. Rice and witnessing the operations of his farm, that he unites extensive agricultural reading with the most close and minute observation. He is a hard-working, practical man; and he has adopted no new theory or practice simply because *new*, or continued in an old one because old; but with excellent sense he has adopted those suggestions, from whatever source derived, that seemed applicable to his soil and condition. Starting in life with nothing but a willing mind and a doing hand, he has risen to his present position by the force of his own enterprise and good judgment. He has been compelled to advance slowly and cautiously in his improvements, making them no faster than they would pay for

themselves, and now he has a farm and plan of operations that may safely challenge competition.

In this example we see forcibly illustrated, the value of agricultural reading, to the farmer who has the good sense to follow those suggestions that are applicable to *his* soil, location and means. It is not to be expected that every practically written article published in an agricultural journal of wide circulation, can be of universal application, for soils, localities as to markets, &c., &c., must necessarily vary. The farmer, therefore, who fails to exercise suitable judgment in following the suggestions of others, has mainly to blame himself, probably, if he meets with disappointments.

How many young farmers, commencing in life with heavy mortgages upon them, pursue the mistaken course of cutting off their wood and timber, ploughing up their pastures every few years for a grain crop, without even sowing grass seeds, and inventing every other possible means to cheat "mother earth" of a crop, without returning her any equivalent;—in other words, "destroying the goose that lays the golden egg,"—and all from the plea that they are in debt. Let all such be reminded by the example of Mr. Rice, that this is not the true policy. Like him, let them seize hold of every means the farm affords for making and saving manure, thus increasing the crops and the reward of their labour, affording a more sure and expeditious means of liquidating mortgages, with a farm left worth cultivating; a farm upon which they may live in independence, with the pleasing reflection, in the evening of life, that theirs is an example safely to be followed by their children.

Further remarks, suggested by the example of this farmer, might be pursued, but the unwarrantable length of this communication admonishes me to forbear.

F. Holbrook.

Brattleboro, Vt. January 6th, 1848.

The Gooseberry.

The gooseberry of our gardens is a native of the north of Europe, our native species never having been improved by garden culture. This low prickly shrub, which, in its wild state bears small round or oval fruit, about half an inch in diameter, and weighing one-fourth of an ounce, has been so greatly improved by the system of successive reproduction from the seed, and high culture by British gardeners, that it now bears fruit nearly, or quite two inches in diameter, and weighing an ounce and a half. Lancashire, in England, is the meridian of the gooseberry, and to the Lancashire weavers, who seem to have taken it as a hobby, we are indebted for nearly all the surprisingly large sorts of modern date. Their annual shows exhibit this fruit in its greatest perfection, and a Gooseberry Book is published at Manchester every year, giving a list of all the prize sorts, etc. Indeed the climate of England seems, from its moistness and coolness, more perfectly fitted than any other to the growth of this fruit. On the continent it is considered of little account, and with us, south of Philadelphia, it succeeds but indifferently. In the northern, and especially in the eastern States, however, the gooseberry, on strong soils, where the best sorts are chosen, thrives admirably, and produces very fine crops.

This fruit is in the first place a very important one in its green state, being in high estimation for pies, tarts, and puddings, coming into use earlier than any other. The earliest use made of it appears to have been as a sauce with green goose, whence the name, goose-berry. In its ripe state, it is a very agreeable table fruit, and in this country, following the season of cherries, it is always most acceptable. Unripe gooseberries are bottled in water for winter use,—placing the bottles nearly filled, a few moments in boiling water, afterwards corking and sealing them, and burying them in a cool cellar, with the necks downward. As a luxury for the poor, Mr. Loudon considers this the most valuable of all fruits, "since it can be grown in less space, in more unfavourable circumstances, and brought sooner into bearing than any other." In the United States the gooseberry, in humble gardens, is frequently seen in a very wretched state—the fruit poor and small, and covered with mildew. This arises partly from ignorance of a proper mode of cultivation, but chiefly from the sorts grown being very inferior ones, always much liable to this disease.

Gooseberry plants should only be raised from cuttings. New varieties are of course raised from seed, but no one here will attempt to do what, under more favourable circumstances, the Lancashire growers can do so much better. In preparing cuttings select the strongest and straightest young shoots of the current year, at the end of October—or very early in the ensuing spring;—cut out all the buds that you intend to go below the ground—to prevent future suckers—and plant the cuttings in a deep rich soil, on the north side of a fence, or in some shaded border. The cuttings should be inserted six inches deep, and from three to six or eight inches should remain above ground. The soil should be pressed very firmly about the

cuttings, and in the case of autumn planting, it should be examined in the spring, to render it firm again should the cutting have been raised by severe frost. After they have become well rooted—generally in a year's time—they may be transplanted to the borders, where they are finally to remain.

The gooseberry in our climate is very impatient of drought, and we have uniformly found that the best soil for it, is a deep strong loam, or at least whatever may be the soil, and it will grow in a great variety, it should always be *deep*—if not naturally so, it should be made deep by trenching and manuring. It is the most common error to plant this fruit shrub under the branches of other trees for the sake of their shade—as it always renders the fruit inferior in size and flavor, and more likely to become mouldy. On the contrary, we would always advise planting in an open border, as if the soil is sufficiently deep, the plants will not suffer from dryness, and should it unfortunately be of a dry nature, it may be rendered less injurious by covering the ground under the plants with straw or litter. In any case a *rich* soil is necessary, and as the gooseberry is fond of manure, a pretty heavy top-dressing should be dug in every year, around bearing plants. For a later crop a few bushes may be set on the north side of a fence or wall.

For the gooseberry, a regular and pretty liberal pruning is absolutely necessary. Of course no suckers should be allowed to grow. In November the winter pruning should be performed. The leaves now being off it is easy to see what proportion of the new as well as old wood may be taken away; and we will here remark, that it is quite impossible to obtain fine gooseberries here, or any where, without a very thorough thinning out of the branches. As a general rule, it may safely be said that one half of the head, including old and young branches—more especially the former, as the best fruit is borne on the young wood,—should now be taken out, leaving a proper distribution of shoots throughout the bush, the head being sufficiently thinned to admit freely the light and air. An additional pruning is, in England, performed in June, which consists in stopping the growth of long shoots by pinching out the extremities, and thinning out superfluous branches; but if the annual pruning is properly performed, this will not be found necessary, except to obtain fruit of extraordinary size.

The crop should always be well thinned when the berries are about a quarter grown. The gooseberry is scarcely subject to any disease or insect in this country. The *mildew*, which attacks half-grown fruit, is the great pest of those who are unacquainted with its culture. In order to prevent this, it is only necessary—1st, to root up and destroy all inferior kinds subject to mildew; 2nd, to procure from any of the nurseries some of the best and hardiest Lancashire varieties; 3rd, to keep them well manured, and very thoroughly pruned every year.

We do not think this fruit shrub can be said to bear well for more than a half dozen years successively. After that the fruit becomes inferior and requires more care in cultivation. A succession of young plants should, therefore, be kept up by striking some cuttings every season.—*Downing's Fruits and Fruit Trees.*

Plank Roads.

We are indebted to Philo White, Esq., for a copy of a Report on Plank Roads, submitted by him to the legislature of Wisconsin. This document furnishes a more full and complete exposition of the advantages of this description of roads, than we have before met with. The first question considered is, what kind of roads are best adapted to the present wants of the community? And though railroads are admitted to afford the greatest facilities under particular circumstances, yet it is concluded that there are many situations where a class of thoroughfares less costly, "and more practical *for every day use*," are called for.

The advantages of plank roads over Mc Adam or stone roads, are, that the former can be made in all situations, without regard to the character of the soil; that they are less liable to be affected by frost,—which is sometimes very injurious to McAdam roads; and that they can be built and maintained at much less cost. It is calculated that horses will travel with wheel vehicles, one-fifth faster, and draw one-fifth more weight on a plank than on a stone road. "In fine," says the report, "plank roads are preferable to those of McAdamized stone in cheapness, in case of draught and in comfort to passengers; greater speed being attainable on them with less assistance to draught; and stage owners say that they are less fatiguing to horses than stone roads, at the same rate of speed."

Plank roads, it is said, were first made in Russia; and their first trial in America was in Canada, where they were made by Lord Sydenham, who from a long residence in Russia, had become well acquainted with them, and was thoroughly convinced of their utility. We are informed that the Canadians are now so well satisfied of the great

advantage of these roads, "that they have gone more extensively into the use of them than any kingdom or republic on the globe." These roads are chiefly in Canada West—the aggregate length of the different lines already constructed, being between 400 and 500 miles. We are not aware of the entire number of miles of plank road actually finished in the State of New York, but this report informs us that the various lines for the construction of which companies have been organised in this State, amount in the whole to a distance of 500 miles.

As to the *width of the track*, or the length of the plank used, the report states that it has been shown "most conclusively, that for a single track, eight feet is preferable to a greater width," and that where a double track is wanted, it is best to make them separately of that width. The planks are laid across the bed at right angles. In regard to the necessity of more than one track, the report quotes the remarks of Mr. Geddes, in relation to the Salina road. Mr. G. observes "great speculative objection was made in the start to but one track; but we have now the entire community with us in deciding that, on all ordinary roads, one track is fully sufficient. The reason is this: the travel in wet weather is entirely on the plank, except the turning out of the light teams; but they seek the plank again as soon as they can get around the team met or overtaken, so that the turn-out track is not cut with any continuous lengthwise ruts, and perhaps the wheels of not one team in a hundred turn-outs will strike the exact curve of another; consequently, in our experience, our turn-out track being well graded, passing the water easily and rapidly from its surface, remains perfectly hard and smooth."

Sleepers or Stringers.—In one or two instances, roads have been made without sleepers—the plank being laid immediately on the graded earth. The planks have kept their places quite well; but it appears to be the conclusion that it is best to use sleepers or sills.

"The sills," says the report, "should be well bedded in the earth, their top surface barely in sight, and the earth in which they are embedded should be broken and pulverized, so as to leave no stones or other hard substances to obstruct their settling evenly, and thus permitting the earth to sink down firmly on the earth as its main support. Two stringers only are used on the Salina road, 4 by 4 inches in size and none less than 13 feet in length; they should be so laid as to break joints, as in laying brick, or putting on siding, that is, the ends of the stringers on one side should not be laid opposite the ends of those on the other side. About 6 feet 8 inches is the proper width between the two lines of stringers, for an 8 feet single track road, which will bring them under the wheels of most road vehicles, and thus give a continuous bearing on them. One set of sleepers of good timber and well bedded, will last as long as two or three plankings."

Grading.—It is directed that the road should be graded twenty-one feet wide, "measuring from the inside top lines of the ditches on each side." Great care should be used that the road be kept dry by means of side ditches and cross culverts. They should be made fine, firm and smooth.

In regard to lengthwise grading, it is observed that short rises are sometimes made of one foot in ten, though they are generally from one foot in twenty to one foot in thirty. Mr. Alvord's remarks on this subject are quoted. "It is easier to go over the same elevation on a plank road, than on a common dirt one; for on plank there is no cutting into the substance passed over, nor encountering of stones by the wheels; and if, as it ought to be, the plank way is covered with a slight coating of earth, the only danger suggested, the slipping of the animal, is avoided. It would be a prettier sight for the eye, were we to grade our plank roads more level; but while their practical utility is not lessened in any perceptible degree by their unevenness, economy forbids the expense of *levelling* them for *ornament*."

The *kind of timber* used for planks is oak, hemlock or pine. Oak lasts as well as any wood, but is *slippery* in wet weather. The wear by abrasion is calculated at one-fourth of an inch in two years; "and as planking will not break through till one and a half or two inches of the surface is worn away, it follows that the duration of the plank, [if of pine or other soft timber,] would be eight years." Oak would generally last, it is thought, fifty per cent. longer.

The cost of plank roads is estimated at from $1500 to $2000 per mile.

Plank Roads preferred by farmers.—The opinion is advanced in the report, that "railroads can never be made to take the place of teams for the transportation of grain, &c., within one day's drive of a market, because the farmer can carry the cheapest for that distance."

"There are seasons when work is slack with almost every farmer; yet his teams are daily consuming as much food at such time as when fully employed. Availing himself of these seasons, he can haul his produce to market with a very few shillings' expense,

in addition to what would have been incurred had his team remained idle in their stalls."

The inducements for farmers to take stock in plank roads, are summed up as follows:

"Now in view of these facts and suggestions, it must readily occur to every farmer, within a reasonable distance of the line of a plank road, that he can better afford to take stock in such a company than any other of our industrial classes, because he can more cheaply pay for his shares,—by *working them out* on the road. Every head of a family, with his teams, scrapers, shovels, and other implements which are always at hand in the cultivation, &c., of his farm, could, during those leisure times which every one occasionally enjoys, work out from one to a dozen shares, according to his force and proximity to the road, without any serious diversion of his attention from his regular vocation, or perceptive detriment to his crops. In fine, to all classes of farmers, no scheme was ever devised that afforded so rich an assurance of immediate and positive benefits to *them*, as the construction of plank roads in the neighbourhood of their farms."—*Cultivator.*

From the American Agriculturist.

Artificial Swarming of Bees.

As the management of honey bees has been my sole business for these last twelve years, in the city of New York, I have thought it would not be amiss to give my own experience in a few particulars in regard to these industrious insects.

Artificial swarming is not generally practised in this country, owing probably to the want of sufficient practical skill in most of those who apply themselves to bee husbandry. For several years I have divided my bees, not allowing them to swarm in the natural way; and I find a great advantage in so doing by reaping the full benefit of the stock. It saves the watching necessary in the case of natural swarms, and if conducted on right principles, it renders the artificial colony quite independent of the casualties to which they are liable. Moreover, it secures the multiplication of swarms in cases, where, if left to the natural process, there would be none. Should a continual spell of bad weather occur about the usual period of swarming, the old queen would have time and opportunity to destroy all the royal progeny—for the bees never oppose the queen mother in such cases,—and thereby entirely frustrate the hope of multiplication by natural swarms. In order to avoid this evil, we must have recourse to artificial swarming. The general period proper for the operation, is about eight or ten days previous to the time when natural swarms might be looked for. At that time, it is likely that royal broods would be found in the combs; at all events, an abundance of eggs and larvæ of workers, from which might be reared an artificial queen; the males, or drones, are also at this time numerous—a state of things indispensable, in order to secure success.

I had a number of hives which had not swarmed, probably owing to an unfavourable change of weather. In consequence of this delay, the reigning queen had an opportunity of putting to death her intended successors. In this state of things, from the crowded condition of the hives, a mass of bees, as large as a man's head, hung from the alighting board of each, while others were clustering on the outside of the hives. With these hives, I resolved to try artificial swarming. I cut out of another hive, a piece of brood comb, containing eggs and larvæ of the proper age, about three days old, and fixed it in one of my principal hives. I then removed one of the hives which had an outlaying, or rather, an outhanging mass attached to its alighting board, instantly clapping down in its place, on the same board of the hive already prepared; then with a brush, I swept these bees off by the new hive, and all that I could get out of it. Next, I removed the old hive some distance from where it stood, and with the help of a hot sun, forced them to enter. They made a tremendous noise, and seemed much disconcerted at finding, instead of the rich combs with which they had hitherto been familiar, nothing but an empty hive. This agitation was kept up all day by the continued arrival of those bees which had been abroad when the substitution took place, adding greatly to the increase of the stock. At noon, the next day, I inspected the new establishment, and found, to my great satisfaction, that the experiment had completely succeeded. The foundations of six royal cells had been laid in the small piece of brood comb I had given them; in due time, the queen was hatched; the hive prospered, and I sold it for $25. At the end of the season, the hive was as good as any of my natural swarms.

Another experiment in forming artificial swarms, and the one I generally practice, is to drive about two-thirds of the bees out of the old hive with their queen, into one that is empty. Then, I immediately replace the old hive on its former station, and remove the new one containing the queen, to a little distance. As the former will have a plenty of eggs and young brood, there will be no trouble in procuring another queen.

Of the experiment I am now about to detail, the sole object was to prove the existence of the power inherent in bees of rearing an artificial queen, when deprived, by any accident, of their original mother. This, indeed, had been proved before; but only incidentally, and I was anxious to put the matter beyond all doubt in my own mind, at least, by an experiment instituted exclusively for that object, to be conducted with minute and scrupulous accuracy.

In June, my observatory hive was full of bees, brood, and honey. The queen was very fertile, and laying at the rate of about 100 eggs a day. I opened the hive and took her out, as I could see every bee within, and every cell in the comb. For about two hours, the bees continued their labours as earnestly and contentedly as if she were still with them. At the end of that time, they became aware of their loss, and all was instantly agitation and tumult. The bees hurried backwards and forwards over the comb, with a loud noise; they rushed in crowds to the door and out of the hive, as if going to swarm; and, in short, they exhibited all the symptoms of bereavement and despair. When night came on, they all went into their hive, and peace and tranquillity appeared to follow. Next morning, I observed they had laid the foundations of seven royal cells, having demolished the three cells contiguous to each of those containing eggs, or worms, which suited their purpose; and by the next morning, there were visible rudiments of five more royal cells, all in quarters of the comb where before there were nothing but eggs and common larvæ, of one or two days old. The bees paid all attention to these royal cells, as the operation advanced. On the seventh day, the first seven cells were sealed, and on the following day the other five. On the morning of the fourteenth day from the removal of the old queen, seven young queens emerged from their cells, strong and active, and exactly resembling those produced in the usual way; and on the next morning, I had the other five come forth, equally active and strong. I watched the hive with all diligence, opened the door, and took out the queens as fast as they emerged from their cells, keeping them for the purpose of making artificial swarms. Some of them escaped my notice, after which I found them lifeless on the ground in front of the hive. Edward Townley.

New York, May 1st, 1848.

Nearly fifty birds were found to have fallen victims to Crutchett's large lantern on the dome of the capitol at Washington, in one week.

From the Michigan Farmer.

Butter Dairies.

It has already become an object to obtain some foreign market for our butter; and to do so, it is not only necessary that it should be superior in quality and flavor, but that it will retain its superiority in any climate. Hence it is of the utmost importance, that the farmer should know by what means his butter can be prepared so as to obtain a remunerating price.

The best Irish butter will be found to have retained its flavor, and to be as sweet and palatable after having been to the Indies, as when first put up, not from any peculiarity of the soil or climate, or in the breed of cows, but in the method of preparing it for market.

By following Mr. Hall's directions as set forth in the report of this and the last year, pure butter will be obtained. To make it keep in any climate, it will be necessary merely to add a greater amount of pure salt, say one ounce to the pound, and packing it in well seasoned oak firkins, with a thin stratum of brine between the upper head and the butter. An article will thus be obtained for export, that will be equal to the very highest priced and far famed Irish butter. The Irish butter dealer uses no timber for his firkins that has not been seasoned at least two years, and even then he takes the precaution of having the staves baked in an oven before they are set up.

There is another important fact connected with the subject of preserving butter, and that is, the kind of salt used in the process of manufacture. Mr. Hall says, "another reason of bad butter is the use of impure salt," and recommends, "*pure rock salt, perfectly pulverized;*" and he further says "*the Salina salt, after repeated trials, I have entirely thrown aside.*" In this, his experience but corroborates that of some of our best western butter makers. There is now no doubt but that one great cause for the bad condition of our western butter, is owing to the impurity of the salt which the farmers are compelled to use, owing to the absurd tariff of tolls imposed upon dairy salt, going west from tide water. The tolls now imposed, amount to a prohibition for all the western and northwestern portions of this State. The manufacture of salt in this State is to this extent at least, maintained at the expense of one of our most important branches of agricultural wealth. The evil is felt to be so great, that arrangements are being made to bring foreign salt to Buffalo from Montreal, which can be done at a price that will soon compete with our own works.

If the true interests of the State were consulted, the tolls upon dairy salt would be reduced to at least the same rate of our own salt.

There is another fact mentioned in this communication, which is entitled to peculiar regard by all dairymen. Mr. Hall says, "he made experiments to ascertain what effect different kinds of feed had upon the quality and quantity of butter produced from any given quantity of milk."

"From 1500 lbs. of milk," he says "weighed when feeding green corn stalks in addition to feed obtained in the pasture, I obtained a little over half a lb., from each 100 lbs. of milk more than the average produced through the season, and the *butter was of a superior quality.*"

Our dry warm summers materially lessen the profits of the dairyman, by drying up our best pastures. True economy would dictate that he should have something at hand, that would easily and at a cheap rate remedy the evil. The experiment of Mr. Hall and others demonstrate beyond all doubt, that Indian corn is one of the most valuable crops grown for feeding green, and the committee would remark, that some of the most valuable results have been obtained by planting in drills three feet apart, and working with a cultivator, rather than by sowing it broadcast.

For the Committee,

T. C. Peters.

Albany, January 20th 1848

Statement of B. A. Hall.

In the operations of butter making, the season past, I have made some experiments, to ascertain the exact degree of temperature necessary to produce the *very best* butter. Previous to trying the experiments, I became satisfied that one great cause of bad butter, was the high degree of temperature at which cream was frequently kept and churned. I applied the thermometer, and churned the cream at different degrees, varying from 55° to 66°, and found I invariably obtained the best butter when the temperature was below 60°,—say 58°. The great anxiety of dairymen to churn quick, is at the expense of a first rate article. Any person at all conversant with butter making, has observed the whitish yellow colour and oily appearance it will present when taken from the churn, whenever the cream has been, or is too warm, when the operation of churning commences, thus forever destroying its rich flavor and keeping properties. The buttermilk cannot be expelled without working too much, which makes it sticky and oily. On the contrary, cream taken from the milk at a proper time, kept and churned at 57° or 58°, will require more time in churning, but the butter will present a high and rich colour, will be firm and hard—will not stick, and will readily break when being separated. The butter milk can be at once expelled, which should always be done before the salt is applied, so that when it is subsequently worked, which should be very little, nothing will be expelled but a little brine, slightly discoloured.

My dairy has been composed the past season of 27 cows.

The produce of my dairy were as follows, viz: 3,736 lbs. of butter, sold in the Boston market by C. P. Adams, at an average nett price of 24½ cents, $1067 13
29 calves, averaging 37 days old, 151 83
Cream and milk used in a family of 12 persons, 16 cts. per day, 58 30
Skimmed milk and butter milk fed to hogs, 224 days, $1 40 per day, 316 40

$1,593 66

The quantity of butter to 100 lbs. of milk was a fraction less than 3 lbs. 5 oz.

My sales of young pigs, which were fed on the skimmed milk and butter milk about two months and then sent to market, amounted to $236 65
Pork, lard, &c., 1640 39

Nett amount of sales, $1,877 04
Amount paid for hogs, 842 00

Amount to credit for feed, $1,035 04

I have not yet hauled out their manure, but think I can safely estimate it at 450 loads.

B. A. Hall.

For the Farmers' Cabinet.

Prince's Strawberries.

Editor of Farmers' Cabinet,—You no doubt have noticed the offer repeatedly made by Mr. Nicholas Longworth, of Cincinnati, of $500 for a staminate strawberry that will bear a good crop. By reference to the Horticulturist of the ensuing month, you will perceive that I have accepted his challenge to produce such an one. I wish now to invite you and all other amateurs of the strawberry to visit my collection when in fruit, from the 10th to the 15th of June, and I will guarantee that all shall feel satisfied that the time has not been mispent. I now announce that there does not exist upon the earth any collection of strawberries presenting any comparison to my present one, and those who will inspect it, will wonder that they should have been misled by cultivating the trash sent out from Europe with high

sounding names, during the last ten years, when such superior varieties can be produced on our own soil. Mr. Longworth and myself are perfectly agreed, that every European staminate variety has proved comparatively worthless for American culture, and with regard to any pretended novelties from Europe, the simple inquiry whether it is staminate or pistillate, will settle the point as to its value or worthlessness. On our own soil, however, we may produce staminate varieties more congenial to our climate, some of which will produce fair crops; and such has been the case with several of our new seedling varieties. Under this head I would call especial attention to the new seedling varieties of the Monteveido Pine; they are of stronger growth than any other class, the blossoms in many cases as large as a dollar, and they form the most splendid family of strawberries as regards size, form, flavor, and colour of the fruit, that has ever been seen. It is a singular fact that no seedling varieties of this magnificent species have yet been produced in Europe, and in fact, the original variety is there comparatively unknown, it being found in but three or four collections in all Europe. We may also refer to the large and beautiful seedling varieties which have been obtained from the Prince Albert and the Crimson Cone, which are unequalled by any but the preceding.

During the last autumn and winter, we have been gratified at receiving orders from Europe for our new and superior American varieties, and we predict that in a few years every variety now cultivated in England, will be cast aside there as utterly worthless.

Yours, very respectfully,
W. R. Prince.

Flushing, May 22nd, 1848.

Figs.

With regard to these, I beg to offer a few remarks on what I have observed and put successfully into practice. The year 1818 was remarkable for abundance of figs, on account of its long duration of heat and drought. Happening to call during that year at the Duke of Richmond's Gardens, Goodwood, near Chichester, in August, I was much pleased, and at that time quite astonished, to see a row of very large standard fig trees loaded with the greatest abundance of fruit, both ripe and unripe, in the highest possible perfection. The soil there is shallow, on a bed of chalk. I likewise observed during the same year, abundance of figs in many of the cottagers' gardens in Sussex, produced on standards that were growing in the same kind of shallow soil, and where the bottom was nothing but chalk. Figs appeared to be no luxury in that quarter. In Kent I have observed good figs and very fruitful trees on on a similar bottom. At the late Lord Audley's Gardens, Belvedere, Erith, I have observed the most abundant crops of fruit, raised for several years in succession in the highest state of perfection, where the soil is shallow and dry, and where the subsoil is nothing but a rock or bed of pebbly gravel, called there pea-gravel; after a heavy rain, scarcely a particle of earth was there to be seen on the surface. I have long observed that shallow dry soils are the best for producing good crops of figs, and where the trees have been planted without much care, and allowed to grow without much pruning or nailing, which does not at all suit the fig. Such places as stable-yards, farm buildings, in any dry corner, amongst stones, chalk, brick-bats, or lime-rubbish, where they are well trodden or paved about the trees, are the places to see fine crops of good figs. Trees in such situations have a number of joints in the length of one inch of young wood. Over-luxuriant trees never bear abundant crops. The wood of a fig tree that is long jointed, pithy, and soft, does not produce figs in perfection. The growth of the fig requires to be checked, if fruit is wanted. In preparing for growing figs, instead of trenching the ground, I should recommend merely forming a flooring under them with concrete, brickbats, stone, chalk, gravel, lime-rubbish, or with whatever is most convenient to be had, if the bottom is not naturally chalky, rocky, or gravelly. Those that are troubled with over-luxuriant fig trees might practice the following method, which I have myself done with good success: Cut a trench, three or four feet wide, in front of the trees,—if against the wall, or all round them, if they are standards,—below all roots, which should be cut clean off as the trench is dug, then fill up with any of the above materials that can be procured, pouring a quantity of grout amongst it as the filling up proceeds, or the roots will soon get through it; otherwise, build a wall, as recommended by Mr. Errington. Figs require to be planted high, and the depth of soil about them should not be more than one foot. If the season is very dry when they are ripening their fruit, the trees will be much benefited by giving them a good soaking of water, as that is the time when they will be benefited by water.—*Gardeners' Chronicle.*

Anecdote of a Horse.

A good horse story was told a short time ago, by a gentleman who was an eye-wit-

ness of the occurrence, which, if we will not call it an effort of *reason*, was at least one of memory of not a very common kind.

A man in the western part of the State of Ohio purchased a remarkably fine horse from a person who lived about thirty miles from his residence, and rode him to his future home, where he lived an easy and a happy life—turned out into rich pasture when not wanted for use. The only service required of him, being to carry his kind master daily in his rides around the neighbourhood. In short, no horse could be more fondled and caressed, nor do less to earn a livelihood.

When he had lived there about six years, he was one day feeding near the house, cropping the rich grass and curvetting in the fulness of animal spirits, when his master observed that he stopped suddenly, and stood perfectly still for several minutes, looking as if he was debating some important question in his own mind. He then, as suddenly pricked up his ears, raised his tail, and started off at a brisk trot on the road leading to his former residence. As he did not return, he was followed and easily traced to his old home, where he had safely arrived, and taken possession of his former quarters in the stable, seemingly much pleased with the whole adventure.—*American Agriculturist.*

Stone Fruits.

About ten years ago my attention was drawn to a plum tree in my neighbourhood, which was rather celebrated as the only one that bore large crops of beautiful plums for several miles round. It stood behind the garden of a farmer, and just between two large hog pens. I might say, indeed, in the midst of a pen; as there was hardly a space of two feet between the pens in which the tree grew. Well, this tree, as I have said, was loaded with the finest imaginable fruit, and the curculio did not appear to attack it in the least, while no other plum trees on the premises, bore any crops of fruit except the common preserving *damson*.

Drawing the inference, that the swine destroyed or drove away the curculio, I immediately set about putting the information so derived into practice. I had already a few plum trees standing near my farm buildings, and I immediately planted others there, so as to make a small orchard of that spot, entirely devoted to plum trees; adding, by way of experiment, a few apricots and nectarines. I ought to say that I had hitherto failed, if possible, even more completely with these two latter beautiful fruits than with the plum.

In this small orchard of stone fruit trees, comprising, altogether, perhaps thirty trees, at fifteen feet apart, as soon as the trees came into a bearing state, I directly turned my hogs. I took the precaution,—by the by, a most necessary one, every year,—to have the trunks of the trees closely boarded round, about three feet high, to prevent the hogs from barking them, as they certainly would. The first year the trees set only a tolerable crop; some of the curculio marks being visible on the fruit. But the second year I had a fine crop, and every year since, without a single exception, I have been able to gather a good crop of very fine plums. The apricots and nectarines have borne equally well, though sometimes the fruit of the latter tree has shrivelled from some cause unknown to me.

To be more definite, I ought to add, that I have found it best to allow the hogs to "have the run" of the orchard for stone fruit all the year, with the exception of about two or three months. I shut them out as soon as the fruit is fully grown, and begins to turn colour, and approach maturity. This enables me to put the orchard in something like a *visitable* condition for any of my family who themselves wish to gather fine and luscious plums, apricots and nectarines. I keep the hogs out until the latest ripening plums and nectarines are past, when they are again allowed free range of it. In order to accomplish this exactly to my mind, I have my hog pen proper on one side of the orchard, with two doors; one door leading into the orchard, and the other into a small enclosure or yard, which they have the run of only when they are shut out of their regular quarters—the orchard.

As I understand it, the hogs in the outset devour all the plums, &c., that drop from the trees in June and July,—as all the insect punctured ones infallibly do. In this way, they effectually prevent the increase of this insect; since, if the fruit is allowed to remain on the ground, the young maggots soon leave it and go into the ground, where they stay till the time comes round for them to rise out of it to sting the fruit again. By continually rooting in the soil, the hogs not only keep it mellow, and, in the main, free from weeds, but they destroy any grubs of insects that still remain in it; while the manure they furnish to the trees appears to be very much adapted to promote their growth, and keep them in good health.

I cannot, of course, undertake to say that in a crowded neighbourhood, much infested with the curculio, this mode would completely answer the purpose of securing a good crop, because it is well known that this in-

sect is somewhat migratory, though I think it never flies far. But I can say that at my place, some miles distant in the country, where, however, all the farmers round cultivate the plum unsuccessfully, I have had very full success by following the mode pointed out.

I have observed, in a previous number of your journal, that both a correspondent and yourself recommend depositing a pile of fresh stable manure round the trunks of plum trees, just before they come into blossom, or soon after, in order to prevent the insects from attacking the fruit by the odor which rises from the manure. It has struck me since, that something of the same effect may follow from making a swine yard of a small stone fruit orchard. I find that a dozen hogs, kept in a space large enough for twenty or thirty trees, give it, for the time it is occupied by them, quite an atmosphere of their own, which the delicate nerves of the curculio may not be able to bear.—*Horticulturist.*

Maize in Mexico.

From the Vienna Zeitung—by H. Carl Heller Translated by E. Goodrich Smith, of the Patent Office.

Maize, (zea mais Linnæus,) not only on account of its elegant structure, splendid leaves, delicate inflorescence, and variety of colour of its pliant stalk, is one of the most beautiful of the grass kind, but likewise one of the most useful, and indeed, for Mexico and a large part of America, truly the most useful of them.

Its beauty the Mexicans have at all times acknowledged; they yet here adorn the altars in the churches and chapels with the stalks of maize, in which are twined flowers. Among the ancient Mexicans, maize was a sign in the calendar, and a holy ornament upon their groves.

The Incas of Peru cultivated maize in their gardens as elegant plants, and among artistic works in gold of the ancient Peruvians, the imitations of the maize plant are the most admirable.

From what has been mentioned, the value of this plant to the inhabitants of America is evident, as well as the proof that its culture was known, and especially in Mexico, long before the discovery of the new world.

It is well established, that maize was not known in Europe till after the conquest of Mexico, and we know, likewise, that Ferdinand Cortez, after his first return to the court of Charles V., 1519, among the presents from Mexico, had some ears of maize.

Notwithstanding that, we cannot certainly fix upon Mexico as the true native country of this plant, yet America was indeed so, for only the Mexicans, the inhabitants of Hayti, and some natives of South America, had any peculiar names for maize—a circumstance that is not without importance, because we may assume that an object for which any language has no designation, is of foreign origin.

Thus, for example, the Indians of Mexico have no word for wheat, barley, oats, apple, pear, grape, fig, sweet orange, &c., which they designate by the Spanish words, *trigo*, *sevada*, *avena*, *manzana*, *pera*, *uva*, *figo*, *narranja*, &c., but for all domestic fruits and plants they have, as *tlaolli* (zea mais,) *choyotesllе*, (lycios edulis,) *mamei*, (mameia Americana,) *pitaya*, (cactus pitoga,) *cacahuates*, (arrachis subterranea seu hypogea?) *maguey*, (agave Americana,) *jomall*, (solnum lycopersicum.)

Our word maize comes from the Haytien word *mahiz*, from whence it is formed by corruption.

The Chinese and Japanese have also a peculiar word, though it was already known among these nations before the discovery of America. Thus the Chinese call maize *ya-chu-chu*, corn of *chu* or *ya* (kidney) or *yu my*, rice, resembling a kidney. The Japanese call it *nanbamthbi*, that is, corn of *new bran*, or, by nick-name, outlandish (foreign) corn, as the Germans, for example, call it Turkish wheat. It is, therefore, more than probable that the maize of the new world came to the old as an exchange, for had the Asiatic people carried maize to America, they would also have planted the cereals far more important for the old world. If, then, we admit that all men sprung from one stock, it must be that the first inhabitants of America separated from their Asiatic brethren before the cultivation of the cereals were known.

Notwithstanding, maize is nowhere found in the wild state, for as to that wild maize of Dr. Hernandez, it is very much as with his wild wheat, which he would have it he had discovered, and which he named *triticum michoucum*, but which is nothing but *triticum compositum*, and came from Europe.

We often find in Mexico, single plants of maize which grow self-sown, and flourish without culture, and though they may stand miles from any inhabited places, they cannot be considered wild, as notwithstanding the often monstrous variety, they always bear the characteristics of cultivated maize. By the parrots, for example, which come from the east, from the *terra caliento* to the *terra*

templada, in large flocks, to visit the maize fields, the kernels of maize may be borne to a distance and thus sown.

It is the same with maize as with the other cereals of Asia, considered as their native country. So far we may consider America as the native country of maize; neither are those found wild.

Notwithstanding the many varieties of maize which are found in Mexico, yet there is only to be found the Linnæan species "mais." Here, in this country, indeed, we distinguish two kinds—a *maiz alto*, and a *maiz temporal*, but they present no botanical difference.

The best known cultivated varieties in Mexico are—

1. *Maiz de padus*, with small eight-rowed ears: the most unimportant of all the varieties cultivated here.

2. *Maiz manchado* or *Chinesco*. A productive kind, with white, yellow and red kernels; sometimes, also, entirely blue, in which case it is called *pinto*.

3. *Maiz blanco*. A very productive variety, which yields a fine, sweet meal.

4. *Maiz amarillo*, which is subdivided into two varieties.

(1.) *Maiz amarillo grueso*, which is more frequently cultivated, and rarely yields less than two to three ears each, with 300 to 600 kernels.

(2.) *Maiz amarillo péqueno*, which is somewhat smaller, less stout, but in a fruitful soil, weighs 10 to 15 ewt. more than the grueso.

5. *Maiz cuarenteno*, better known in Mexico under the name of *maiz tremés*, or *olote Colorado*, which ripens quickly, and may be planted in the coldest districts in Mexico.

6. *Maiz tardio*, or *de riego*, the most productive of all the varieties, and that which is cultivated around the city of Mexico, and in many moist regions. It sometimes reaches to 500 per cent.

Maize succeeds best in a moist and warm climate, but it has the great advantage above other cereals, that it may be successfully cultivated in Mexico as well in the *terra caliente* (warm districts) as in the *terra fria* (cold ones.) Its highest limits here are from 2000 to 8000 feet above the level of the sea, therefore the time necessary for it to ripen is very different. It varies in all the periods from seven months to six weeks.

Maize is the most important plant in Mexico, and the failure of the crop by drought, hail, wind, or disease, produces the saddest consequences.—*Patent Office Report*, 1847.

From July, 1844, to July, 1845, 137,300 tons of guano were imported into England.

Geography and History of the Pear Tree.

The common pear tree is indigenous to Europe, western Asia, the Himalayas, and to China; but not to Africa nor America. It is found wild in most of the counties of Britain, as far north as Forfarshire; on the continent of Europe, from Sweden to the Mediterranean; and in Asia, as far east as China and Japan. It is always found on a dry soil, and more frequently on plains than on hills or mountains; and solitary, or in small groups, rather than in woods and forests. The varieties cultivated for their fruit succeed both in the temperate and transition zones of the two hemispheres, and it has been remarked that this tree, as well as the apple and the cherry, will grow in the open air, wherever the oak will thrive.

The earliest writers mention the pear as growing abundantly in Syria, Egypt, and in Greece; and it appears to have been brought into Italy from these places about the time that Sylla made himself master of the last-named country, although there is but little doubt that the Romans had several kinds of this fruit long before that time. Among the trees which Homer describes as forming the orchard of Laertes, the father of Ulysses, we find the pear. Theophrastus speaks of the productiveness of old pear trees; and Virgil mentions some pears which he received from Cato. Pliny describes the varieties in cultivation, in his time, as being exceedingly numerous, and says that a fermented liquor was made of the expressed juice. "Both apples and pears," he says, "have the properties of wine, on which account the physicians are careful how they give them to their patients; but when sodden in wine and water, they are esteemed as wholesome." Again, he observes,—"All pears whatsoever are but a heavy meat, even to those in good health, and the sick are debarred from eating them; and yet, if they are well boiled or baked, they are exceedingly pleasant, and moderately wholesome; when sodden or baked with honey, they agree with the stomach." According to Pownell, the cultivated pear was imported into Marseilles by the Phocæan colonists, sometime during the middle ages; and Whitaker thinks that it was introduced into Britain by the Romans, but at what period, although it is mentioned by all the early writers of that country, we have no account. It was the opinion of Mr. Loudon, that all the wild pears growing in England, originated from the seeds of the cultivated sorts, accidentally disseminated by birds.

The pear tree is of great longevity, and all writers on the subject, from Theophrastus to the present day, agree that, as the tree

grows old it increases in fruitfulness, which is indeed the case with many other trees. In corroboration of these views, Mr. Loudon states that, "In Nottinghamshire, at Old Baseford, there is a pear tree, of the kind known as the brown dominion, which, in 1826, was upwards of a century old. It is forty feet high, with a head fifty-four feet in diameter, and a trunk two feet three inches in diameter. From 1806 to 1826, the produce of this tree, on an average, was fifty pecks of pears a year. In the year 1823, it bore one hundred and seven pecks, each peck containing four hundred and twenty pears; and in 1826, it produced one hundred pecks of two hundred and seventy-nine pears each; which, when gathered, weighed twenty lbs. each peck; making a total of a ton weight of pears in one year. As the tree grows older, the fruit becomes larger and finer; so that it requires more than one hundred pears less to fill the peck now, than it did twenty-six years ago. The increase in the size of the fruit, is doubtless owing to the field in which the tree stands being frequently top-dressed with manure."

In Duncumb's "General View of the Agriculture of the County of Hereford," published in 1805, there is recorded a very extraordinary tree, growing on the glebe land of the parish of Hom-Lacey, that more than once filled fifteen hogsheads with perry in the same year. When the branches of this tree, in its original state, became long and heavy, their extreme ends successively fell to the ground, and, taking fresh root at the several parts where they touched it, each branch became a new tree, and in its turn, produced others in the same way, covering at that time nearly half of an acre of land. "Being anxious to know the present state of this celebrated tree," observes Mr. Loudon, "we wrote to a highly valued friend, residing at Hereford, respecting it, and we have been favoured with the following reply:—I have been this morning to see the far-famed pear tree. It once covered an acre of land, and would have extended much further, had nature been left to her own operations. It is now not a quarter the size it once boasted; but it looks healthy and vigorous, and when I saw it, it was covered with luxriant blossoms. The original trunk is still remaining; and there are young shoots which are only yet approaching the ground, but which seem nearly ready to take root in it. The tree would completely have covered the vicarage garden, if it had been allowed to remain. It is said to have been in its greatest perfection about 1776 or 1777. There is another tree of the same kind in the neighbourhood.—*Hereford, May* 18, 1836."

In Scotland, at Restalrig, near Edinburgh, in a garden adjacent to what was the house of Albert Logan, who was attainted in the reign of James VI., (of Scotland, and First of England,) there is a pear tree, which was probably planted before his forfeiture. It is of the kind called "Golden Knap," which, in that part of the country, is generally considered as the best variety to plant for timber. At two and a half feet from the ground, in 1836, it was four yards in circumference. Dr. Neill has mentioned a number of very old pear trees, standing in the neighbourhood of Jedburgh Abbey, and in fields known to have been formerly the gardens of religious houses in Scotland, which were destroyed at the time of the "Reformation." Such trees are, for the most part, in good health, and are abundant bearers; and as some of them must have been planted when the abbeys were built, they are probably from five to six hundred years old.

The introduction of this fruit tree into the North American colonies, probably dates back to the early periods of their settlements. There are at present existing in this country many aged trees, celebrated for the improved excellence of their fruit, among which may be mentioned a venerable old tree, standing at the corner of the Third avenue and Thirteenth street, in the city of New York. It is said to have been planted in about the year 1646, by Peter Stuyvesant, then governor of New Netherlands, and has been a living witness of all the changes and political struggles through which this city has passed, for a period of nearly two hundred years. Although its trunk and larger branches are signally marked by the effects of time, it annually bears an abundance of delicious fruit, and at the present date,—April 17, 1845,—it is covered with a profusion of flowers. It is about forty feet in height, with a trunk one hundred inches in girth, at a yard above the ground.—*Brown's Trees of America.*

Dairies.

One of the largest dairies in our country is that of Col. Meacham, of Pulaski, N. Y. His farm consists of 1000 acres, 300 of which are devoted to grass, and he keeps one hundred head of cattle and ninety-seven cows. In one year he made 30,000 pounds of cheese, 20,000 pounds of which he sold at one time at New York, for from six and a half to seven cents per pound. He feeds his cows mostly on hay and carrots. Of the latter he raises 2000 bushels, and gives each cow half a bushel per day; and besides the benefit derived from his grass for his stock, he gathered

not less than 300 bushels of grass seed. According to the State census of New York, taken three years since, the quantity of butter made in a year was 79,501,770 pounds. This, at twelve and a half cents per pound, would amount to $9,937,716. The same year there were milked 999,490 cows, three-fifths of which, it is supposed, were for butter dairies, and the remainder for cheese dairies. This would give, for butter 599,685 cows, which would probably give 500,000 calves; so that a large increase may be calculated in this respect, on the amount of stock kept for butter manufacture every year in that State.

The quantity of *milk* sold *in our cities* is great. Some idea of it may be formed from the fact that 50,000 quarts of milk daily are carried on the Erie railroad, equal, including the cans to sixty-three tons, not less, probably than 15,000,000 or 16,000,000 quarts a year, which did not find its way to New York before the road was constructed.

The importation of cheese into Great Britain is larger than that of butter. The total quantity in 1846 from Europe amounted to 249,664 cwt., and from the United States to 91,901 cwt. The *American cheese*, however, is said to have some *faults* which need to be corrected to render it acceptable to the English market. These are stated by Mr. Coleman to be, 1st. The softness of the rind, which renders them liable to crack, and which is imputed to their richness, and the remedy for which is to let the cheese, when taken from the press, remain in brine so strong that it will take up no more salt for four or five hours. It must not, however, be kept too long in the brine, as it may receive injury. The second fault complained of is the acid and sharp taste. This is imputed to some improper preparation of the rennet, and possibly to something wrong in the feed or pastures. It is also recommended that American cheese should be coloured so as to resemble the English cheese. The American butter is a poor article generally there, and does not find purchasers for table use, but is used to grease machinery in the manufacturing districts.—*Patent Reports.*

Softness and Fineness of Wool.

It is not as generally known as it should be, that softness is a quality of wool of much consequence. When the wool buyer and stapler proceed to an examination of a parcel, their judgment will be materially affected as to its value, whether "soft in handle," or otherwise. This, however, generally speaking, is the result of comparative fineness; but by no means always so, for wool of the same quality of fineness has not the same degree of softness. There are several causes to account for it, and among them is soil; as, for instance, the chalky districts of England affect the wool to such an extent as to make it invariably brittle and harsh. This, however, is only local. The general cause of a deficiency of softness in wools of the same breed, may be referred directly to the *condition* of the sheep. It has already been stated that when the animal was kept in uniform good condition, the necessary quantity of *yolk* was supplied. Now if there is but little of this substance, which will follow an abuse in management, the wool will be less pliable and "kind to feel." Therefore it may be set down as a universal rule, that wool owes much of its softness to the *presence* of a *sufficiency* of *yolk*.

As a testimony how much this quality of wool is appreciated by the manufacturer, it is affirmed on the authority of an English author, "that two parcels of sorted wool being taken, possessing the same degree of fineness, but the one having the soft quality in an eminent degree, and the other being harsh, the cloth prepared from the first, at the same expense, will be worth more to the manufacturer than the other, by full 20 per cent."

This term, when applied to wool, is wholly comparative; various breeds of sheep producing wool essentially different in quality, the same breeds varying much, and all breeds exhibiting qualities of wool of unequal fineness in the same fleece. It is also sometimes the fact that the extremity of the fibre, as ascertained by the micrometer, is five times greater in bulk than the centre and root.

The fibre may be considered coarse when it is more than the five hundreth part of an inch in diameter, and very fine when it does not exceed the nine hundredth part of an inch, as exhibited occasionally in choice samples of Saxon Merino wool. It is said there are animals which have a wool underneath a covering of hair, the fibre of which is less than the twelve hundredth part of an inch.

Formerly, wool of short staple only was thought by the manufacturer indispensable to make a fine cloth with a close pile or nap, but the improvements made in machinery within a few years have superseded this consideration, and now long-staple wool is most valued. This in part proceeds from the fact that short wools have more "dead end," proportionally, than long; again, the new American enterprise for manufacturing muslin de laines, calls for a long, tough, fine staple. The Australian wools, which are of Merino and Saxon blood, from the mildness of the

climate of New South Wales, are very much longer in staple than formerly, and are much used for the above object. It is a query, however, whether a fine and very compact fleece, possessing a long fibre, can be produced on the same sheep. Very close, fine fleeces, are always comparatively short in staple; and close fleeces are indispensable in our rigorous climate, to protect the sheep from the effects of cold and wet; on the contrary, open fleeces are usually long in staple, but a poor defence against a low temperature. It is, therefore, a question for the wool-grower of the North to consider whether, in obliging the manufacturer, he will not adopt a policy injurious to the constitution of his sheep. In a more southern latitude, this consideration is not so important.

The alteration of the colour was the first recorded improvement of the sheep, and its purity, its perfect whiteness, should never be lost sight of by the sheep-master of the present day. It is, however, not so much considered as it should be. Manufacturers desire none other fine wools than those of the purest whiteness, for the reason that those of a black or dun-coloured hue, do not receive a perfect fancy dye, and therefore can be converted only into black cloths; hence, they are valued accordingly. Flock-masters should never breed from individuals that are otherwise than purely white; for, independent of the above consideration, black or smutty sheep mar the appearance of a flock.—*Morrell's Shepherd.*

The Toad.—That poor, despised, and harmless reptile is admirable in its proportions, and has an eye of such transcendent beauty, that when I find one I place it on my hand to view it more minutely. Its skin, too, so completely adapted to the subterraneous places into which it goes for shelter, is well worthy the attention of the philosopher. As this little animal is innocuous, I feel sorry when I see it trampled under foot by inconsiderate people, who have learned from their grandmothers that it is full of venom.—*Essays on Natural History.*

Cultivation of the Strawberry.—In order to show the importance of cultivating the strawberry, we give the following statistics:—In 26 days of last summer, 1847, 4572 bushels sold in New York,—514 in one day: 80,000 baskets, equal to 833 bushels, weighing 25 tons, were brought in one day over the Erie railroad. Whole number of baskets sold in New York, equal to 602,640, being an increase of 212,000, or 24 per cent. over last year, (1846) value $20,000 in a season!—*American Journal of Agriculture and Science.*

THE FARMERS' CABINET,
AND
AMERICAN HERD-BOOK.

Philadelphia, Sixth Month, 1848.

The Smithfield market, long a great nuisance in London, is about to be done away with, or removed.

The attention of farmers will be drawn to the sale of fine Durham cattle on the 12th of next month, at the Rising Sun Hotel, on the Germantown road. The advertisement will be found on another page. This herd has been long celebrated as among the very best in the country.

Through the kindness of Edmund Burke, Commissioner of Patents, we have recently received the *Annual Report* for 1847, containing as usual a large amount of valuable matter, connected with the great farming interests of the country. A tabular estimate of the crops for the past year, will be found in the 8th No. of the current volume of the Cabinet.

☞ Subscribers to the Cabinet, will please observe the Notice on the first page. There are a good many who still owe for this paper. Its publication in this city will cease with the next number, and as bills have been recently forwarded to those in debt for it, they are earnestly requested to remit the amounts due by mail.

The American Agriculturist, to which the subscription list of the Cabinet has been transferred, is edited by A. B. Allen, well known to our farming community all over the United States, as a man well qualified to conduct such a paper: and we trust our readers will very generally be disposed to continue their subscriptions; where, however, they determine otherwise, they will please not fail to comply with the recommendation at the close of the *Notice* on the first page of this number.

THE quantity of rain and snow which fell in the 5th month, 1848, was ..... 4.902 in.

Penn. Hospital, 6th mo. 1st.

CONTENTS OF THIS NUMBER.

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THE FARMERS' CABINET,

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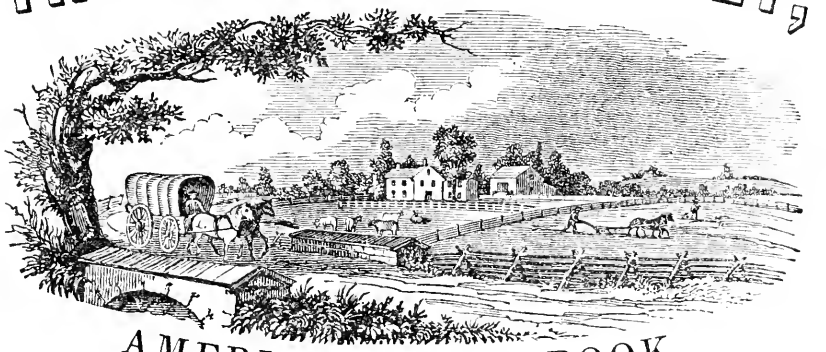

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Price one dollar per year.—For conditions see last page.

NOTICE.

THE Editor of this paper being about to relinquish its publication with this Number, which closes the current volume, has made an arrangement with the publisher of the American Agriculturist, of New York, by which all the subscribers to the Cabinet will be supplied with that work: and it is earnestly requested that those who mean to continue their subscription, will *immediately* give evidence of it by remitting payment by mail, either to the publisher in New York, or to the present publisher of the Cabinet, 50 North Fourth street, Philadelphia.

Subscribers in arrears for the Cabinet, to whom bills are now again forwarded, will see the necessity of settling their accounts, and remit by mail, as early as possible.

The American Agriculturist and Farmers' Cabinet,

Will be published promptly on the 1st of each month in future, by *C. M. Saxton*, 205 *Broadway, N. Y.*, to whom all subscriptions and monies may be sent. The friends of the FARMERS' CABINET are informed, that the *July number* will be sent them bill enclosed for the year, those who do not wish the paper continued, will please return the number with their *address distinctly written on the wrapper*, and addressed "*American Agriculturist, New York.*"

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The Agriculturist treats of every description of domestic animals and poultry; their characteristics, breeds, the best and the worst; their advantages and disadvantages; their mode of breeding, feeding, and rearing; their uses, profits, and management. It treats

of all cultivated crops, including fruits, shrubbery, and flowers; the best seeds, mode of planting, cultivating, gathering, and preparing for markets; the general principles of vegetation and the laws of vegetable life. It describes the principles of mechanics as applied to machinery used by farmers and planters; the best machinery and implements for agriculture, their uses and the particular superiority of some over others, and their adaptedness for particular purposes. It gives the latest improvements in those implements which may have been made, and suggests others; tells where they are to be found and the benefits that will follow from their use. It specifies new objects of cultivation, and how they may be better prepared for a profitable market and more general use.

This is the great design and scope of the *Agriculturist;* and these are the paramount objects of interest throughout America. No country can ever enjoy solid prosperity unless an enlightened system of agriculture is practised among its people, and this cannot be done except by the aid of those works which are written to teach it. Let all aid, then, to spread them broadcast throughout the land. It is the duty of every good citizen to do this—nothing equal to it can be done to benefit the country.

All editors inserting the above, and forwarding the paper containing it to the publisher, will be entitled to the Agriculturist the current year, without further charge.—*American Agriculturist.*

The Potatoe Problem.

The solution of the Potatoe Problem is accomplished. At least, Professor Liebig thinks so. In his last work* he declares that the potatoes are attacked with influenza. "The cause of the disease is the same which, in spring and autumn, excites influenza; that is, the disease is the effect of the temperature and hygrometric state of the atmosphere, by which, in consequence of the disturbance of the normal transpiration, a check is suddenly, or for a considerable time, given to the motion of the fluids, which is one chief condition of life, and which thus becomes insufficient for the purposes of health, or even hurtful to the individual."

To say that the potatoe crop has caught cold, is new. But when we read in the same place that the cause of the cold, or influenza, is impeded perspiration or "suppressed transpiration," the novelty ceases. "The potatoe plant," says the learned chemist, "obviously (!) belongs to the same class of plants as the Hop-plant, namely, to that class which is most seriously injured by the stagnation of their juices in consequence of suppressed transpiration. According to Knight, the tubers are not formed by swelling of the proper roots, but by the developement of a kind of underground stalks or runners. He found that when the tubers under ground were suppressed, tubers were formed on the stalks above ground; and it is conceivable that every external cause which exerts a hurtful influence on the healthy condition of the leaves and stalks, must act in like manner on the tubers. In the districts which were most severely visited by the so-called potatoe disease in 1846, damp, cold, rainy weather followed a series of very hot days; and in 1847, cold and rain came on, after continued drought, in the beginning of September, exactly at the period of the most luxuriant growth of the potatoes."

In this at least there is no novelty. It is the same view as that taken by ourselves in August, 1845, when the disease first broke out, which was very generally adopted, but which we have long since shown to be erroneous. The opinion was just that which would be formed upon the first hurried glance at the phænomena, but which a full knowledge of the facts soon compelled its advocates to relinquish. The only material difference that we remark between Professor Liebig's discovery and the old hypothesis now referred to, consists in his introducing it in 1848 as something new, and surrounding it with an array of quotations from the experiments of Hales, which are familiar to every student of vegetable physiology, together with some observations of his own on the motion of fluids in living bodies, the connection between which and the potatoe disease we fail to discover.

We wonder that Professor Liebig should not have perceived that the seasons of 1845, 6, and 7, in all which the disease was prevalent, were very dissimilar; we wonder still more that he should not have weighed the mass of valuable evidence that has been collected on the subject in every country in northern Europe, before he jumped to his present conclusion. It is still more extraordinary that he should not have asked himself why impeded perspiration, influenza, cold, or whatever else he terms the disease, should not have attacked the potatoe crop before the year 1845, and should have continued to do so every year since through seasons essentially different from each other.

It would seem, however, that men cannot reason calmly upon this subject. To our

* "Researches into the motion of the Juices in the Animal Body." By Justus Liebig, M. D. Taylor and Walton, 8vo.

great surprise we find Dr. Gregory, the translator of Professor Liebig's work, appending to it Doctor Klotzsch's proposition as confirming his author's speculation. He thinks that by strengthening the potatoe plant it will be better able to resist the disease, an opinion that we have expressed a hundred times. He believes that this strengthening may be effected by repeatedly stopping the growth of the branches by pinching off their shoots, so as to strengthen the tubers and prevent those changes which result in the production of flowers and fruit, or, as he terms it, "to restrict the metamorphosis of the leaves." What that has to do with impeded perspiration we are unable to perceive. His object is to give the plant more vigor, by diverting into a smaller number of leaves the food obtained by the roots and sent upwards into the stem, which food, under ordinary circumstances, is dispersed through a large number of leaves. In principle this method is like our English plan of destroying the flowers, and which has not been attended with success; for although in the experiments in the Garden of the Horticultural Society, in 1847, topped or stopped potatoes were less diseased than others untopped, yet disease existed in both cases, and the difference was only as 9.56 to 13 per cent. There are, however, some peculiarities in the plan of Dr. Klotzsch, which make it desirable to try it this year exactly in the manner which he indicates. So far, however, from pretending that the disease is impeded perspiration, he expressly declares himself "unable to explain the nature of the disease."

For ourselves, we regard it with as much uncertainty as ever; of this, however, we are persuaded, that be it what it may, it is not explained by our own original hypothesis, now produced as a novelty by Professor Liebig.—(*Lindley.*)

Rabies, or Canine Madness.

Hydrophobia has been chiefly observed in Europe. It has, however, never been described as occurring beyond the Artic Circle; and indeed, according to some authors, it is seldom if ever heard of at Archangel, Tobolsk, or in the country north of St. Petersburgh. Lisbon swarms with dogs, which prowl about by night and day without any owner, and yet it is said that no cases of hydrophobia are ever heard of there, notwithstanding the fact that the thermometer is sometimes at 110 degrees Fahrenheit. To appease the thirst of these animals, a certain number of tradesmen place vessels of water at their shop doors. The disease has never been observed at Constantinople, which city swarms with dogs; and it is stated to be rare also in the northern parts of Turkey, and more so in the southern provinces. In the warmest regions of America it rarely occurs, but is common in the northern part of that continent. Hillary saw some cases of the disease at Barbadoes. It is, however, extremely rare in the West Indies; in many of the islands it seems never to have been noticed. John Hunter says that in the hot island of Jamaica, where dogs are exceedingly numerous, not one was known to go mad during forty years. The disease did not occur there formerly, but now it does. It occurs in India, but not often. Count Jacopo Graberg di Hemso, in his work on Morocco, states that dogs never have rabies in Northern Africa, nor in any Mahommedan country. At Aleppo and other parts of Syria, where great numbers of dogs perish for want of food and water, and the heat of the climate, this disorder is unknown. Though they abound in Egypt, and often suffer from hunger and thirst in that region, which is subject to a burning climate, yet, as Clot Bey assures us, no one instance of hydrophobia, either among men or animals, has been known there. The Egyptian dogs, which are somewhat fox-like, are during the daytime almost constantly in the shade, near basins which are daily filled with fresh water by the inhabitants. These dogs only run about in the night time, when they seek for carrion and offal. In disposition they are meek and peaceable, seldom fighting even among themselves.

A precaution commonly adopted in Paris consists in fastening over the noses of the dogs slight baskets, like muzzles, which are easily fixed on; and while they do not incommode the animal, nor prevent it from eating and drinking, they preclude it from biting. Dogs running about without this safeguard are very properly destroyed by the police. In a small town on the western frontier of France, during the hot days of 1824, placards were posted up to announce that poisoned sausages would be thrown to all dogs found straying. A gentleman who kept a pack of hounds, finding, notwithstanding great precaution, that his dogs frequently contracted rabies, at length succeeded in completely excluding it from his kennel, by making every new dog he admitted previously perform quarantine.

What is termed the *worm* underneath the dog's tongue, is a muscle which assists the movement of that important organ. From a belief that the absence of the worm prevents the dog going mad, it is not unusual to remove it. Pliny recommends the worm-

ing of dogs, and from his time to the present it has had its advocates. The truth is, however, that the removal of the worm does not protect the dog against the disorder, but renders him incapable of communicating it to any other creature. The following facts will show how far it may be recommended for the restriction of a malady horrid in its effects, where a human being is concerned.

Three dogs that were wormed being bitten by mad dogs at three several periods, all died mad, but did not bite, nor do any mischief; for although one of them frequently ran at and attempted to bite a healthy dog in the same kennel, his tongue was so swelled that he could not make his teeth meet. The sound dog was kept in the kennel until the mad one died, and was purposely preserved for two years afterwards, to note the effect, but he never ailed, although no remedies were applied to check any infection that might have been received from the contact of the mad dog. To prove the use of worming, three more striking instances may be adduced. A terrier bitch went mad, that was kept in a kennel with forty couple of hounds; not a single hound was bitten, nor was she seen to offer to bite. Every attention was paid to her, and the gradations of the disease—which were extremely rapid—minutely noted. The rabies was fast approaching before she was separated from the hounds, and she died the second day after. At first warm milk was placed before her, which she attempted to lap, but the throat refused its functions. From this period she never tried to eat or drink, seldom rose up, or even moved; the tongue swelled very much, and long before her death the jaws were distended by it. In another case, a spaniel that had been wormed, was observed to be seized and bitten in the lip by a mad dog. Medicine was applied, and every precaution taken. Upon the fourteenth day he appeared to loathe his food, and his eyes looked unusually heavy; the day following he endeavoured to lap milk, but could swallow none. From that time the tongue began to swell; he moved but seldom, and on the third day he died. For many hours previous to his death, the tongue was so enlarged that the fangs or canine teeth could not meet each other by upwards of an inch. The forty couple of hounds already mentioned were all wormed, and several of them were bitten and went mad, but only one of them attempted to bite, and this was a hound in which one half of the worm had been suffered to remain, owing to his violent struggling during the operation. The others all died with symptoms similar to those of the terrier and spaniel, namely, a violent swelling of the tongue, and a stupor rendering them nearly motionless, and both which symptoms seemed to increase with the disease.

Though it has been questioned whether rabies has ever been produced spontaneously, or whether it has not always originated from the bite of a rabid animal at some period or other, yet there can be no doubt that it is often accelerated by the savage custom of dog-fighting. Mr. Youatt says that rabies is disseminated in a tenfold degree by the dogs used for fighting than by any other breed; hence the suppression of that barbarous sport would much help to lessen the disease. Hydrophobia may be acquired not only from the dog, but from a rabid wolf, fox, jackal, cat, horse, ass, mule, ox, sheep, and hog, and even from a goose, duck, hen, &c., that have been bitten, but varying in the symptoms and degree of virulence. Franzius says, "if a fox runneth mad, he hath the same qualities as a mad dog; and if he bites any one, it is venomous." It may be mentioned that the late Duke of Richmond died from hydrophobia contracted from the bite of a mad fox in Canada. All warm-blooded animals seem subject to rabies, but it has not been observed in any of the cold-blooded creatures.

Various signs by which a mad dog may be known are mentioned by authors, but as not even two out of the several accounts I have consulted perfectly coincide, and much that is stated seems to be fanciful, it is by no means easy to learn the true diagnostics where there exists so much mistake, contradiction, and inconsistency. I greatly question whether many authors have actually observed the successive stages of rabies from its commencement in the dog to its termination. Some, too, seem to have construed the eccentric peculiarities in the conduct of a queer dog or two into veritable symptoms of approaching rabies; but being a little singular, is not the same thing as being rabid—a fact familiar to those who have read of the eccentricities of authors. Simply because he is the latest writer on the progressive symptoms of rabies, I extract the following remarks by Mr. H. D. Richardson, who says:

"One of the earliest symptoms of rabies in the dog is *restlessness*. He is constantly turning round and round before he will lie down; his countenance becomes anxious, his eyes bloodshot; he fancies that he sees objects around him which have no real existence, and he snaps at the empty air; his fondness for his master increases, and with it his propensity to lick his hands and face—a filthy practice at any time, and one most dangerous; the appetite becomes depraved,

his natural food is neglected, and at the same time every sort of trash is greedily devoured; *eating his own excrement* is an early symptom, and so sure a one, that the moment a dog is seen doing so he should be destroyed, or at all events confined. If he rubs his paws against the sides of his mouth to remove a bone, the mouth will remain open: but when his doing this is the precursor of rabies, the jaws close after the rubbing ceases. There soon follows an insatiable thirst, so insatiable that the poor animal often plunges his whole muzzle into the water; and here you may observe *spume* left upon the surface. Soon the dog falls or staggers, and sometimes, but not invariably, becomes delirious. Death speedily ensues."

An anonymous author states that a really mad dog on being pursued displays no signs of fear, generally going, if not impeded, in a straight line against the wind, at a brisk trot, wholly unconcerned at the shouts of its pursuers, and does not curl the tail in any direction, but carries it drooping. He adds, that a dog that curls its tail is certainly *not* mad. Some say that a mad dog will often worrey a stone; and that when he is struck, he never growls, but is quiet.

It appears that rabies in dogs is sometimes cured, for a dog having bitten a man, the man died, but the dog recovered. Again, there have been instances in France of dogs being bitten by mad foxes, without catching the disease.

A slight scratch from the tooth of a mad dog is as dangerous as a bite, and so also is its being suffered to lick the hands or face. Some time since a lady of rank died of hydrophobia contracted by permitting her pampered French poodle to lick her face, on which she happened to have a sore pimple, which of course imbibed the virus. When a person is bitten through his clothes, there is less danger, as the teeth of the animal become wiped or cleaned in passing through the cloth. The wound made by a mad dog heals, like any other wound, but considerable pain extends from it along the course of the nerve, and not of the absorbents, which are never affected. The common and decisive symptoms of hydrophobia in man are, at first, dejection of spirits, increasing from melancholy to fury, spasms of the muscles, of the throat and chest, an extraordinary aversion to the name and sight of liquids, and an excessive flow of spittle. Between the infliction of the wound and the appearance of any symptoms, some time elapses; generally, the disease shows itself between the twentieth and fortieth day; occasionally it appears at a shorter or at a much longer interval. In a hundred and thirty cases it was remarked that it commonly appeared at some period between one and three months. It rarely evinced itself after the fourth month. Cases, however, are reported of the virus remaining for a much longer time in the constitution. Thus, in the *Philosophical Transactions*, a case is mentioned of a man attacked with hydrophobia, nineteen months after the bite. We are also required to believe that in a case which occurred under Dr. Bardsley, at the Manchester Infirmary, twelve years had intervened.—*Quarterly Journal of Agriculture.*

The Esculent Funguses of England.

We believe there are very few persons but will acknowledge the hand of Providence in our late visitation, and hence must admit that, without His blessing on our labours, all attempts to provide a substitute or remedy for the failure of the potatoe crops will avail us nothing. However, it is not proper that we should remain idle; but rather that we should use every means at our command to mitigate the scarcity with which, for some good and wise purpose, we have been so lately afflicted.

To abandon, or even neglect, so invaluable a crop as the potatoe, simply because for the last two or three years they have in many parts of the country partially failed, would be next to madness; for most certainly no adequate substitute for that vegetable is known, nor has any of the articles so recommended—by the many advisers upon the subject—the slightest pretensions to equality as an article of food. We cannot, therefore, urge too strongly upon every farmer, gardener, and private gentleman, the necessity and the importance of cultivating, year after year, with especial care and perseverance, a good breadth of potatoe, notwithstanding all the discouragements with which it may be attended; at the same time, however, we would have no one unmindful of any description of vegetable calculated to be useful as an article of food; and, therefore, we hail with pleasure every attempt to render available, as sustenance, subjects that hitherto have been neglected or overlooked.

The Esculent Fungi may be mentioned as of that class, for, most assuredly, they have hitherto been unheeded in this country, although furnishing food to a very considerable extent in various parts of the continent. The volume before us come very opportunely; and upon this matter we will let the author speak for himself:

"No country is perhaps richer in esculent funguses than our own; we have upwards of thirty species abounding in our woods,

No markets might, therefore, be better supplied than the English, and yet England is the only country in Europe where this important and savoury food is, from ignorance or prejudice, left to perish ungathered. In France, Germany, and Italy, funguses not only constitute for weeks together the sole diet of thousands, but the residue, either fresh, dried, or variously preserved, in oil, vinegar, or brine, is sold by the poor, and forms a valuable source of income to many who have no other produce to bring into the market. Well then may we style them with Mons. Roques, '*the manna of the poor!*"

In Italy these things are better managed. In the markets of Rome many thousand pounds weight are annually disposed of; and an income of many thousand pounds sterling is thus derived.

"The following brief summary was drawn up by Professor Sanguinetti, the Official Inspector—Ispettore dei Funghi—at Rome: let it speak for itself: 'For forty days during the autumn, and for about half that period every spring, large quantities of funguses, picked in the immediate vicinity of Rome, from Frascati, Rocca di Papa, Albano, beyond Monte Mario, towards Ostia and the neighbourhood of the sites of Veii and Gabii, are brought in at the different gates. In the year 1837 the Government instituted the so-called Congregazione Speciale di Sanità, which among other duties was more particularly required to take into serious consideration the commerce of funguses, from the unrestricted sale of which during some years past, cases of poisoning had not unfrequently occurred. The following decisions were arrived at by this body:

"'1st.—That for the future an "Inspector of Funguses," versed in botany, should be appointed to attend the market in place of the peasant, whose supposed practical knowledge had hitherto been held as sufficient guarantee for the public safety.

"'2nd.—That all the funguses brought into Rome by the different gates should be registered, under the surveillance of the principal officer, in whose presence also the baskets were to be sealed up, and the whole for that day's consumption sent under escort to a central depôt.

"'3rd.—That a certain spot should be fixed upon for the fungus market, and that nobody under penalty of fine and imprisonment should hawk them about the streets.

"'4th.—That at seven o'clock, A. M., precisely, the inspector should pay his daily visit, and examine the whole, the contents of the baskets being previously emptied on the ground by the proprietors, who were then to receive, if the funguses were approved of, a printed permission of sale from the police, and to pay for it an impost of one baiocco (a half-penny) on every ten pounds.

"'5th.—That quantities under ten pounds should not be taxed.

"'6th.—That the stale funguses of the preceding day, as well as those that were mouldy, bruised, filled with maggots, or dangerous (*muffi, guasti, verminosi, velenosi,*) together with any specimen of the common mushroom (*Agaricus campestris*) detected in any of the baskets, should be sent under escort and thrown into the Tiber.

"'7th.—That the inspector should be empowered to fine or imprison all those refractory to the above regulations; and, finally, that he should furnish a weekly report to the Tribunal of Provisions (*Il Tribunale delle Grascie*) of the proceeds of the sale.'

"As all fresh funguses for sale in quantities *exceeding* ten pounds are weighed, in order to be taxed, we are enabled to arrive at an exact estimate of the number of pounds thus disposed of. The return of *taxed* mushrooms in the city of Rome during the last ten years, gives a yearly average of between *sixty and eighty thousand pounds* weight; and if we double this amount, as we may safely do, in order to include such smaller *untaxed* supplies as are disposed of in bribes, fees, and presents, and reckon the whole at the rate of six baiocchi, or three pence per lb.—a fair average,—this will make the commercial value of fresh funguses very apparent, showing it here to be little less than £2,000 a year. But the fresh funguses form only a small part of the whole consumption, to which must be added the dried, the pickled, and the preserved; which sell at a much higher price than the first. Supposing, however, that with these additions the supply of all kinds only reached a sum the double of that given above, even this would furnish us with an annual average of nearly *four thousand pounds sterling;* and this in a single city, and that, too, by no means the most populous one in Italy! What then must be the net receipts of all the market-places of all the Italian States? For as in these the proportion of the price of esculent funguses to butchers' meat is as two to three, it is plain, that prejudice has deprived the poor of this country, not only of many thousand pounds of the former, but also of as much of the latter as might have been purchased by exchange, and of the countless sums which might have been earned in gathering them."

There is no country where fungi do not abound, and probably there is in none a lack of esculent species. The Russians are somewhat famed for the number of fungi which they employ as food—about fifty kinds. In

some parts of Russia the peasantry are said to depend on mushrooms and bread for the greater part of their sustenance.—*Gardener and practical Florist.*

From the Cultivator.

Raising Wheat.

I do not propose to relate any account of raising *big* crops, which are few and far between in this section. Such are sometimes made the text for a communication from your correspondents, when the common method of farming is left out of sight. I take for my text, twenty bushels of wheat to the acre, which I think can be raised under ordinary circumstances, where wheat growing is an important branch of farming. There are here two dangers to contend with—the fly and rust. My crop, for the last year, consisted of 100 acres, which averaged as above stated, grown on land that had been seeded to timothy and clover two and three years. It was summer fallowed in May and June, ploughed deep, sheep kept on through the summer. The first of August commenced harrowing the fallows across the furrows, and did it *thoroughly.* By the middle of August commenced cross-ploughing in lands from six to eight paces wide, marked out straight and true; the centres of the lands form ditches to carry off the surplus water, and also serve as guides in sowing. The land remained from two to four weeks after ploughing, before sowing, which I am sensible was a benefit to the crop. The seed was sowed on the furrows, so as to fall in drills; two bushels of seed per acre, and harrowed lengthwise of the furrows, which preserves the ditches and drills. The ditches were cleared out by running the plough through them; and cross ditches were made where the water would settle, so as to carry it off, and leave the ground free from it. Wheat will not grow where it is immersed in water.

My method of manuring, is to sow four to six quarts of clover and timothy seed per acre, immediately after harrowing-in the wheat. Should the land be of a clayey nature, the seed should not be sown until the next spring. This is the cheapest manuring I have found, and it answers every purpose for raising wheat. On the sandy soil, I sow three-quarters of a bushel of plaster per acre, in the month of May.

I commenced cutting wheat ten days before my neighbours, and as many days before it was fully ripe, which satisfied me that wheat is not generally cut in season.

But allow me to indulge my *organ* of prophecy: It is, that our wheat crop is gradually failing—falling before its natural enemies—the enemies that Nature produces, and which are growing in their strength, and the species greatly multiplying.

James Otis.

Berlin, Erie co. Ohio, Feb. 20th, 1848.

From the Southern Cultivator.

Cow Peas—Will they kill Stock?

Mr. Editor,—There be many persons who deny the fact, that cow peas will kill stock of any kind, if proper attention be paid to them. In my mingling with my species, I find a great number who know that peas have, and will always kill stock of any kind. I have proved the fact, beyond all question, to my neighbours, that my hogs were killed in 1844 and 1846. At first they denied it, to a man, but at the second time, others having suffered, they then saw it plain.

I now advance the fact, that cow peas will kill cattle weeks after they have been in the pea field, and I believe rotting peas will kill them as well as hogs. Having lost my entire stock of hogs in 1844, I concluded to watch the weather, and not let my hogs in when there was danger, but I was picked up in 1846. I then determined not to admit my stock hogs at all, and as I had not let my cattle into my fields for many years, I concluded to turn my cattle in, to use up the peas. I attended to the salting, watering, turning in and out of the field for several days. The cattle improved finely. I left home about the 9th of December. That night, and for some days, it did not rain, but it poured, and I lost every milk cow but one. There was nothing in the field but peas, vines, dead grass and corn stalks. What else killed them? From some 44 Saxon and Merino ewes, I have only five lambs. They ran in that field. Could I have lost by them too? I do not say that sound peas will kill stock, and as I have said before, I know that sound sweet potatoes will not kill horses and mules, but I am confident that decayed ones of either, will kill. There is no man in our land plants more peas than I do, per hand, and I will continue, though I may have to exclude my stock *after frost.* It is high time that the experienced men among us, should speak out and fear not. There is too much at risk. I am yours, &c.,

M. W. Philips.

Edwards', Miss., 1848.

Nothing is more easy than to magnify a trifling circumstance into a serious misfortune, by suffering the mind to dwell upon, and place it in every possible point of view, each assuming a darker shade than the former.

Premiums of the Pennsylvania Horticultural Society.

The following will be awarded at the Society's Autumnal Exhibition in this city, on the 20th, 21st, and 22nd of Ninth month next.

Grapes (*Native.*)—For the best named collection to be exhibited, $5.
For the second best do. do. $3.
For the best six bunches, Isabella, to be exhibited, $3.
For the second best do. do. do. $2.
For the third best do. do. do. $1.
For the best do. Catawba, do. $3.
For the second best do. do. do. $2.
For the third best do. do. do. $1.
For the best do. Elsinborough, do. $3.
For the second best do. do. do. $2.
For the third best do. do. do. $1.
For the best do. of another variety, do. $3.
For the second best do. do. do. $2.
For the third best do. do. do. $1.

Grapes, (*Foreign,*) *raised under glass.*—For the best named collection to be exhibited, $5.
For the second best do. $4.
For the third best do. $3.
For the best Hamburgh, three bunches to be exhibited, $3.
For the second best do. $2.
For the best Hansterretto, do. $3.
For the second best do. $2.
For the best Frankenthal, three bunches to be exhibited, $3.
For the second best do. $2.
For the best Chasselas, do. $3.
For the second best do. $2.
For the best White Muscat of Alexandria, three bunches, $3.
For the second best do. $2.
For the best Frontignac, three bunches to be exhibited, $3.
For the second best do. $2.
For the best St. Peter's, do. $3.
For the second best do. $2.
For the best of another variety, do. $3.
For the second best do. $2.

Grapes, (*Foreign.*) *raised in the open air.*—For the best named collection to be exhibited, $5.
For the second best do. $4.
For the third best do. $3.
For the best three bunches, of a black variety, to be exhibited, $4.
For the second best do. $3.
For the third best do. $2.
For the best do. of a white variety, do. $4.
For the second best do. $3.
For the third best do $2.

Peaches.—For the best, one bushel to be exhibited, $7.
For the second best do. $5.
For the third best do. $3.
For the fourth best do. $2.
For the fifth best do. $1.
For the best, one peck, do. $3.
For the second best do. $2.
For the third best do. $1.
For the best, one dozen, do. $3.
For the second best do. $2.
For the third best do. $1.

Nectarines.—For the best, one dozen, do. $2.
For the second best do. $1.

Plums.—For the best two dozen, do. $3.
For the second best do. $2.
For the third best do. $1.

Melons.—For the best, three in number to be exhibited, $2.
For the second best do. $1.

Water Melons.—For the best, Spanish variety, three in number, $3.
For the second best do. $2.
For the third best do. $1.
For the best of another variety, do. $3.
For the second best do. $2.
For the third best do. $1.

Pears, (*Native.*)—For the best and most numerous named varieties, $8.
For the second best do. $6.
For the third best do. $4.
For the fourth best do. $2.
For the best Seckel, one peck to be exhibited, $3.
For the second best do. $2.
For the third best do. $1.
For the best Tyson, six specimens do. $3.
For the second best do. $2.
For the best of another named variety, six specimens, $3.
For the second best do. $2.
For the third best do. $1.

Pears, (*Foreign.*)—For the best and most numerous named varieties, $8.
For the second best do. $6.
For the third best do. $4.
For the fourth best do. $2.
For the best Williams' Bon Chretien, or Bartlett, $3.
For the second best do. $2.
For the third best do. $1.
For the best Doyenné blanc or Butter, one peck to be exhibited, $3.
For the second best do $2.
For the third best do. $1.
For the best of another variety, half a dozen, do. $2.
For the second best do. $1.

For the best, half a peck, a different variety, do. $2.
For the second best do. $1.

APPLES.—For the best and most numerous, named varieties, $8.
For the second best do. $6.
For the third best do. $4.
For the fourth best do. $2.
For the best, one bushel to be exhibited, $3.
For the second best do. $2.
For the third best do. $1.
For the best, one peck, do. $2.
For the second best, do. $1.
For the best, named native variety, half a dozen, $2.
For the second best do. $1.

QUINCES.—For the best, half a peck to be exhibited, $3.
For the second best do. $2.
For the third best do. $1.

POTATOES.—For the best, one bushel to be exhibited, $5.
For the second best do. $4.
For the third best do. $3.
For the fourth best do. $2.
For the fifth best do. $1.
For the best American Seedling, of superior quality, $5.
For the best Sweet, one bushel to be exhibited, $3.
For the second best do. $2.
For the third best do. $1.

BEETS.—For the best, one dozen do. $2.
For the second best do. $1.

CARROTS.—For the best, one dozen, do. $2.
For the second best do. $1.

SALSIFY.—For the best do. $2.
For the second best do. $1.

ONIONS.—For the best, three dozen, do. $2.
For the second best do. $1.

CABBAGE.—For the best, six heads, do. $3.
For the second best do. $2.
For the third best do. $1.
For the best do. Red Dutch, to be exhibited, $3.
For the second best do. $2.

LETTUCE.—For the best do. to be exhibited, $2.
For the second best do. $1.

ENDIVE.—For the best, blanched, six heads do. $2.
For the second best do. $1.

CHARD.—For the best, six plants do. $2.
For the second best do. $1.

CHARDOON.—For the best do. blanched, do. $2.
For the second best do. $1.

CELERY.—For the best, do. $2.
For the second best do. $1.

CELERIAC.—For the best six plants, do. $2.
For the second best do. $1.

EGG PLANTS.—For the best, six fruit do. $3.
For the second best do. $2.
For the third best do. $1.

TOMATOES.—For the best, one peck do. $3.
For the second best do. $2.
For the third best do. $1.

MAIZE, OR INDIAN CORN, *for table use.*—For the best, three dozen, $2.
For the second best, do. $1.

CRANBERRIES.—For the best, one peck, cultivated, to be exhibited, $2.
For the second best do. $1.

PUMPKINS.—For the best and largest, two specimens to be exhibited, $2.
For the second best and next, do. $1.

PEAS, GREEN.—For the best and largest quantity to be exhibited, $2.
For the second best and next, do. $1.

VEGETABLES.—For the best display, by market gardeners, $8.
For the second best do. $6.
For the third best do. $4.
For the fourth best do. $2.
For the fifth best do. $1.
For the best, by private or amateur gardeners, $8.
For the second best do. $6.
For the third best do. $4.
For the fourth best do. $2.
For the fifth best do. $1.

HONEY.—For the best display, $5.
For the second best do. $3.
For the third best do. $2.

DAHLIAS.—For the best, 20 blooms, named varieties to be exhibited, $3.
For the second best do. $2.
For the best American seedling parti-coloured, $2.
For the best American seedling self-coloured, $2.
For the best ten blooms, by amateurs, named varieties, $3.
For the second best do. $2.
For the best bloom do. $2.

ROSES.—For the best display of six named varieties to be exhibited, $3.
For the second best do. $2.

Russellia juncea.—For the best specimen in flower, in a pot, $1.

Manettia glabra.—For the best specimen in flower, in a pot, $1.

Hoya carnosa.—For the best do. $1.

Verbena.—For the best do. $1.

Verbenas.—For the best, three varieties in pots, to be exhibited, $3.

For the second best do. $2.

Ferns.—For the best display in pots, do. $2.

Petunias.—For the best two specimens, do. $2.

Achimenes—For the best display to be exhibited, $3.

Orchideæ.—For the best do. $3.

Designs formed of cut flowers, etc.—For the best and most appropriate, $40.

For the second best do. $30.

For the third best do. $20.

For the fourth best do. $15.

For the fifth best do. $12.

For the sixth best do. $10.

For the seventh best do. $9.

For the eighth best do. $8.

For the ninth best do. $7.

For the tenth best do. $6.

For the eleventh best do. $5.

Bouquets—*To be confined to those suitable for the centre table.*—For the best and most approved, $7.

For the second best do. $5.

For the third best do. $3.

For the fourth best do. $1.

For the best, of indigenous flowers, etc. $5.

For the second best do. $3.

For the best Basket of Flowers, $5.

For the second best do. $3.

For the third best do. $2.

Wreaths.—For the best pair, for festooning, $7.

For the second best do. $5.

For the third best do. $3.

Fine Farms in Dutchess County, N. Y.

Having lately had an opportunity of spending a few hours at some fine places in Dutchess county, we submit a hasty and necessarily imperfect sketch of some of the objects which met our attention.

The farm of J. W. Wheeler, Esq., of Hyde Park, consists of 300 acres. It has been in his possession for five years, but at the present time about 200 acres are rented. The natural situation of the place, on the east bank of the Hudson, is very pleasant, and Mr. W. has done much to improve and beautify it. His buildings are tasteful and neat; his grounds are handsomely laid out, and mostly enclosed with stone walls of the best kind. It is designed that all the outline fences shall be of stone, and that the few internal ones which are necessary, shall be of iron.

The soil of Mr. Wheeler's farm, generally, is of rather a loose texture, somewhat gravelly in places, underlaid by slate rocks. It is well suited to the production of Indian corn, rye, and most kinds of fruit common to the latitude—especially apples and pears. There is a large number of pear trees, and we have never seen finer or more healthy ones, or those that were better set in fruit.

The principal products of the farm are fruits, Indian corn, rye, potatoes and hay. The grain is chiefly used in fattening beef—the other articles are sent to the New York market. Most of the cattle to be fattened, are commonly purchased in the fall, fed through the winter, and sold the following May or June. Oxen are employed in farm labour. They are at all times well fed, and not being overworked, they get in high condition, and with only a little extra feeding, are turned off for beef at good prices. Mr. W. showed us six handsome and well-fattened oxen, which had been sold to be taken away in the month of June, at an average of a hundred dollars each—estimated equal to nine dollars per hundred for the nett beef, or four quarters.

All the stables and stock yards are constructed to prevent the waste of any portion of the excrement, liquid or solid. Large quantities of good manure are made by the stall-fed cattle and other animals, and it is all carefully saved and applied to the land in the most judicious manner. The yards are kept covered with muck and litter, and the manure is made up into compost heaps, where the decomposition is so regulated, and the gases so absorbed, that there is no loss of fertilizing elements. It is commonly applied to hoed crops, and is thoroughly incorporated with the surface soil.

Mr. Wheeler has some Ayrshire and some Durham cattle. He prefers the former for the dairy. He has two Ayrshire cows and a bull which were imported, and several young animals of their produce. They are good stock. Only one of the Ayrshire cows had a calf the past spring. This one—"Effie,"—and a "Dutch" heifer were put on trial together, for butter, for a few weeks, and the two yielded from 22 to 23½ pounds per week. Few cows, of any breed, carry more good points for the dairy, than the Ayrshire last mentioned.

We were highly pleased with the good order, neatness, and the general evidences of good management displayed on the premises of Mr. Wheeler, and regretted that cir-

cumstances did not permit us to make a longer stay. It was also with much regret that we were compelled to forego the pleasure of a visit to the fine places of Mr. Fuller, Maj. Allen, and Mr. Butler, all situated in the same neighbourhood.

From Mr. Wheeler's we passed up the river bank to Ellerslie, the residence of William Kelly, Esq., near Rhinebeck. This place, consisting of about 600 acres, has been in Mr. K.'s possession about seven years. In its original purchase and subsequent improvement, he has made large expenditures, and whether considered in reference to its natural position and features, or the embellishments of art, there are but few places of equal beauty and interest. The mansion stands on elevated ground, but is flanked on the north and west by beautiful woods, which effectually screen it from the boreal blasts. The prospect to the south is delightful, embracing a view of the river and country on both sides, for the distance of nearly twenty miles.

The appearance of the grounds is highly attractive. On one side are extensive carriage ways and walks, leading for miles through groves and forests, and taking in their course points from which we have the finest park-like views; while on the other side, lie broad green fields, whose gently-varied surface presents to the eye a rich and extensive rural landscape.

The farm is divided into lots from fifty to a hundred acres, and where a division of these lots becomes necessary, moveable iron fences are used, which, as they cannot be seen at a distance, preserve, unbroken, the view of the grounds. The soil is mostly a clay loam, more natural to the production of grass than grain. Gypsum operates favourably, and by the use of this article every year or two, and occasional top-dressings, with compost, a great portion of the farm is kept constantly in grass. A large field was shown us which had not been ploughed for upwards of thirty years, and it had a stout crop of excellent quality. The herbage of the pastures is likewise much improved by moderate dressings of plaster. Hay is the principal product of the farm, of which it yields from 300 to 400 tons annually, mostly sent to the New York market.

Considerable live stock is, however, kept on the farm, and in this department Mr. K. has spared neither pains nor expense to obtain the best. We saw sixteen cows, full blood and grade Durhams, all of which were *good*, and several of them *uncommonly fine* both in points and dairy qualities. Among the herd was a very fine imported Ayrshire cow—"Kitty." Mr. K. showed us some very promising young stock of various ages, and several yoke of staunch working oxen. A pair of nearly full blood Durhams were of large size, and apparently of great strength.

Mr. K. has a flock of about sixty Southdown sheep, several of which he procured from the best flocks in England, at a cost, in some instances, of two hundred dollars per head. Many of them are of first rate quality, and show that they have been bred with care and judgment.

Mr. K. has shown great liberality in the distribution of such of his fine animals as he could spare, among the neighbouring farmers, at prices not higher than would have been paid by the butchers.

The old out-buildings of the farm are in good order, but not in all cases of the most approved style. Mr. Kelly is erecting on different parts of the farm, several spacious barns for storing hay; and next season he designs to take down the barns where the cattle are kept, and put up others of the most convenient and substantial kind, in their stead.—*Cultivator.*

From Downing's Horticulturist.

Transplanting Evergreens.

Having recently been looking over the numbers of the current volume of "*The Horticulturist*," I have been exceedingly interested with several articles, from highly respectable cultivators in different sections, on "Transplanting Evergreens." It is a subject which certainly ought to meet with altogether more attention than it does at present from every cultivator; for no rural spot, whether it be the environs of home, the public promenade, or the cool and refreshing park, can be perfect without them. They give beauty to the scenery wherever they are found. Not only by their beautiful symmetry, but by the contrast they afford in their rich and unfading foliage,—differing so widely in form in their own family, and so varied from that of deciduous trees. In spring, they are lovely; in summer, beautiful; in autumn, when maturity spreads its variegated colours over the forest and the grove, to give interest to the decay of nature, they smile at biting frosts and cheerless winds; and when winter comes, "in her terrors clad," they stand unchanged, amid howling blasts and pitiless storms, and driving snows, like "*the friend that is born for adversity.*" Who does not admire them, and who would not cultivate them?

It is a sad fact, and one that we hope will soon be exchanged for a better truth, that many neglect all attempts at the cultivation of evergreens, from an impression that the

risk is greater in their removal than that which usually attends the process on deciduous trees. Another reason which some will give, is, that they have attempted to cultivate them and failed, and they will, therefore, spend no more time in the matter.

As it regards the first objection, we must say, from our personal experience, that we will as soon risk success in their removal as in that of any tree whatever,—unless it be the willow, or some of the species that can hardly be killed under any circumstances. *Care*, we know, is necessary; and so it is in taking up and transplanting all trees, if the highest degree of success would be obtained. This is reasonable; for men have no right to expect success where they bestow no pains. But to our *experience* with evergreens.

In our first efforts in their cultivation, we had heard different seasons recommended as *the best* for their removal. In order to satisfy ourselves on this point, we have tried each month, from September to June inclusive, and with very fair success. So we are able to say, that with proper care they may be removed in any of the autumn months, in any part of the winter, whether the ground is frozen or not, and through all the busy bustling spring and early summer, at just such times as the convenience of the operator may dictate. For the very *best time*, as our labours will warrant, we would recommend that, when the bud is fairly bursting; and from that until the new growth has attained an inch in length. We have put them out when the new branches were three or four inches long, and the temperature of the atmosphere so high that they would wilt before reaching home, and, by copious watering for a few days, have those branches assume their usual position, and continue their growth. We have also had instances where these drooping extremities would dry up in spite of our labours to resuscitate, and seen new ones shooting forth from buds which had hitherto lain dormant, and might never have been called into action, had not a necessary cause appeared to push them forward. The better time, however, is before they advance in growth so far as to have new wood,—which, in its first stages, is so tender and herbaceous,—of sufficient length to droop.

Our method of taking up and putting out again is somewhat like that of your correspondents, to whom allusion has been made. We get our trees from open lands, or sparsely wooded grounds, when we can. In this region, the fir, whose beauties all admire, is often found growing in old pastures on the high mountains. These pasture lands have a cold, moist, shallow soil, underlayed with an almost permeable subsoil. In such localities, where the roots from necessity run horizontally and near the surface, there is but little difficulty in taking them up without loss of fibres or earth, especially if we take that sharp edged spade along to cut around the tree. The union between the soil and subsoil is not so close but that they will easily separate; and thus a tree may be removed in its native soil almost without loss of fibre. They may be set in a wagon in their growing position, and safely transported, by careful driving, to almost any distance.

Another method of obtaining is, to go into swamp lands, where old logs and stumps are always to be found in abundance; around and over these is often a shallow stratum of vegetable earth, formed by the decomposition of substances gathered round. From this, evergreens frequently spring; and as their growth increases, they push their main roots to a deeper and moister soil. We take an axe and cut off these descending roots; after which, by gently raising the tree, you can save a thousand fibres, and all the soil from which the tree drew its first nourishment. This is a very pretty way of obtaining them; for by it we save all the earth necessary without getting a burdensome quantity to lift.

In putting out, we have had but little regard to the soil or size of the pit, provided it is large enough freely to admit the roots in their natural position. Soft and light earth should be brought in contact with the roots of all trees, in order to facilitate the first efforts of the roots in pushing in a new soil. Watering we have found necessary the first season after transplanting, as we have, for the most part, taken our trees from moist soils, which had given them aquatic habits. We never prune our evergreens, but let them form heads to their own fancy; throwing out their first branches at the ground, and thus forming beautiful cones if they choose. If pruning is preferred, however, it may safely be performed *after the first year;* and any form given to the head by the knife they will be likely to retain, as they are not like deciduous trees—disposed to throw out new shoots to supply the places of branches taken off.

We have found it an excellent practice to keep the surface around evergreens well covered with leaves, especially in summer, when the rays of the sun fall most violently upon them. Leaves keep the earth cool and moist, which is a desideratum to their

healthful growth. In their decay, they furnish a natural aliment to sustain and invigorate them.

We cannot but suppose that the culture of evergreens, when fully understood, will be perseveringly entered into through every section of our country. They will not only be raised to please the eye and feast the taste, but in northern and exposed regions, the time will come when they will be planted in belts around buildings and fields, to protect them from the rude blasts of winter and scorching sunbeams of summer, to which such regions are eminently exposed.

Yours truly, W. Bacon.

Richmond, Massachusetts, 1848.

The Theory of Hay Making.

When grass first springs above the surface of the earth the principal constituent of its early blades is water, the amount of solid matter being comparatively trifling; as it rises higher into day the deposition of a more indurated form of carbon gradually becomes more considerable; the sugar and soluble matter at first increasing, then gradually diminishing, to give way to the deposition of woody substance.

The following table affords a view of the composition of rye grass before and after ripening:

	18th June.	23rd June.	13th July.
Water,	76.19	81.23	69.00
Solid matter,	23 81	18.77	31.00

These are important practical facts for the agriculturist; for if, as we have endeavoured to show, the sugar be an important element of the food of animals, then it should be an object with the farmer to cut grass for the purpose of haymaking at that period when the largest amount of matter soluble in water is contained in it. This is assuredly at an earlier period of its growth than when it has shot into seed, for it is then that woody matter predominates; a substance totally insoluble in water, and therefore less calculated to serve as food to animals, than substances capable of assuming a soluble condition. This is the first point for consideration in the production of hay, since it ought to be the object of the farmer to preserve the hay for winter use in the condition most resembling the grass in its highest state of perfection. The second consideration in haymaking is to dry the grass under such circumstances as to retain the soluble portions in perfect integrity. To ascertain whether hay by the process and exposure which it undergoes loses any of its soluble constituents, the following experiments were made:

1st. 3,000 grains of rye grass in seed on the 13th of July, gave up to hot water a thick syrup fluid, which when dried till it ceased to lose weight 212°, weighed 217.94 grains, equivalent to 7.26 per cent.

2nd. 2 500 grains of rye grass digested in cold water, yielded 53.23 grains of extract, equal to 2.12 per cent. This rye grass contained 31 per cent. of solid matter, and 69 per cent. of water.

3rd. New hay made from rye grass, and containing 20 per cent. of water for the sake of comparison, was also subjected to similar trials.

1st.	Grains.		Grains.		
	1369	gave to h. w.,	220.77	of ex. =	16 12 per et.
	1000	" "	159.34	" =	15.93 "
	1000	" "	140	" =	14 "

2nd. 2,000 grains of new hay in seed, digested in cold water, yielded 101.3 grains of extract = 5.06 per cent. of soluble matter.

From these numbers we learn that 100 parts of hay are equivalent to 387½ of grass. This amount of grass should contain of soluble matter in hot water 28.13 parts, and in cold water 8.21 parts. But the equivalent quantity of hay or 100 parts only contain 16 instead of 28 parts soluble in hot water, and 5.06 instead of 8¼ parts soluble in cold water. A very large proportion of the soluble matter of the grass has obviously disappeared in the conversion of grass into hay. The result of the hay making in this particular instance has, therefore, been to approximate the soft, juicy and tender grass to woody matter, by washing out or decomposing its sugar and other soluble constituents. These facts enable us to explain the reason why cattle consume a larger amount of hay than is equivalent to the relative quantity of grass. Thus, animals which can subsist upon 100 pounds of grass, should be able to retain the same condition by the use of 25 pounds of hay, if the latter suffered no deterioration in drying. The present series of experiments however, show that a cow thriving on 100 or 120 pounds of grass, required 25 pounds of hay, and 9 pounds of barley or malt, affording thus, collateral evidence of the view which we have taken of the imperfection of the process of hay making at present in use in this country. The great cause of the deterioration of hay is the water which may be present, either from the incomplete removal of the natural amount of water in the grass by drying, or by the absorption of this fluid from the atmosphere. Water when existing in hay from either of these sources, will induce fermentation, a process by which one of the most important constituents of the grass, viz: sugar, will be destroyed. The action necessary for decomposing the sugar

is induced by the presence of the albuminous matter of the grass; the elements of the sugar are made to react on each other in the moist state in which they exist, in consequence of the presence of the water and oil, and are converted into alcohol and carbonic acid, according to the following formula:

	Carb.	Hyd.	Oxyg.
1. Atom sugar	12	12	12
2 Atoms alcohol	8	12	4
3. Atoms carb. acid.	4	0	8

That alcohol is produced in a heated haystack in many cases, may be detected by the similarity of the odor disengaged to that perceptible in a brewery. We use this comparison because it has been more than once suggested to us by agriculturists. The quantity of water or volatile matter capable of being removed from hay at the temperature of boiling water, varies considerably. The amount of variation during the present experiments was from twenty to fourteen per cent. If the lower per centage could be attained at once, by simple drying in the sun, the process of hay making would probably admit of but little improvement; but the best new made hay that we have examined contained more than this amount of water; the numbers obtained verging towards twenty per cent. When it contains as much as this it is very liable to ferment, especially if it should happen to be moistened by any accidental approach of water. The only method which we have found to succeed in preserving grass perfectly entire, is by drying it by means of artificial heat. Rye grass contains, at an early period of its growth, as much as eighty-one per cent. of water, the whole of which may be removed by subjecting the grass to a temperature considerably under that of boiling water; but even with a heat of 120° the greater portion of the water is removed, and the grass still retains its green colour, a character which appears greatly to add to the relish with which cattle consume this kind of provender. When this dried grass,—as it may be truly termed by way of distinction from hay,—is examined, it will be found to consist of a series of tubes, which, if placed in water, will be filled with the fluid, and assume in some measure the aspect of its original condition. In this form cattle will eat it with relish, and prefer it to hay, which in comparison is blanched, dry and sapless. The advantages obtained by this method of making hay, or rather of preserving grass in a dry state are sufficiently obvious. By this means all the constituents of the grass are retained in a state of integrity; the sugar, by the absence of water, is protected from undergoing decomposition; the colouring matter of the grass is comparatively little affected, while the soluble salts are not exposed to the risk of being washed out by the rains, as in the common process of hay making. The amount of soluble matter capable of being taken up by cold water, is according to the preceding trials, as much as five per cent., or a third of the whole soluble matter in hay. We may, therefore, form some notion of the injury liable to be produced by every shower of rain which drenches the fields during hay harvest. It is not only, however, the loss which it sustains in regard to the sugar and soluble salts, that renders hay so much less acceptable than grass to the appetite of cattle. The bleaching which it undergoes in the sun, deprives it of the only peculiarity which distinguishes the one form of fodder from the other; grass deprived of its green colouring matter presents exactly the appearance of straw, so that hay ought to be termed grass straw. It is obvious, from the experiments detailed, that the operation of hay making, as conducted in this country, has a tendency to remove a great proportion of the wax in the grass. Thus it was found that rye grass contained 2.01 per cent. of wax. Now, as 387½ parts of rye grass are equivalent to 100 parts of hay, and as 387½ parts of grass contain 7.78 parts of wax, it is obvious that 100 parts of hay should contain the same amount of wax; but by experiment it was found that two hundred grains of hay contained four grains of wax, which is equivalent to two per cent., almost exactly the amount contained in grass. Hence it appears that no less than 5.78 grains of wax have disappeared during the hay making process. The whitening process which the grass undergoes in drying, renders it apparent that the green colouring matter has undergone change; but that it should have been actually removed to such an extent, or at least have become insoluble in ether, is a result which could scarcely have been anticipated without actual experiment.—*Dr. Thomson on Food.*

Effect of Gardening on the Rural Population.

The good effects of Cottage Gardening is already universally acknowledged. The emulation excited by exhibiting their productions at flower shows, has been doubled, not in all cases, but in many. It will be admitted that the temptation to labour cannot be too great, and to the excitement of this feeling ought all public exhibitions to tend. Many societies, with the best intentions, have, nevertheless, done a good deal of mischief. They have given prizes for flowers

among a class of men who could not, in justice to their families, afford to buy them, and the natural influence of this has been unfavourable. Cottagers, with not a shilling beforehand, have, notwithstanding, shown half-guinea dahlias, and seven and sixpenny roses, and two-guinea geraniums, and ten-shilling tulips. These things are highly improper. If they were honestly come by, the money was withdrawn from the family; if not honestly come by, the very people who tried to advance the morals have been engendering a vice which must end fatally. A society with proper notions cannot offer premiums for extravagance any more than it can offer rewards for peculation, because one engenders the other. If a cottager once is made to calculate on beating his rivals by the superiority of his collection, there is an end of all reliance on industry. It matters not whether he begs, borrows, steals, or buys his costly flowers, any or all of them are mischievous, and have a bad effect on the morals. Raise a man's ambition to produce better carrots, cabbages, potatoes, and useful vegetables than his neighbours, and you will excite the ambition to shine in a right cause.

Let us observe the effect of a certain county Society on the exhibiting cottagers. Prizes were given for dahlias, roses, tulips, and many other costly subjects perfectly inconsistent with the probable income of the people who were to compete, being persons limited in their rentals to under ten pounds. There were also prizes for vegetables. One man had won the head prizes for three years, and another, who struggled hard against him for the ascendency, was always just beaten. It chanced that we were judges on one occasion—the two rivals were in the field, and both had good flowers—one, however, was apparently well to do, the other very poor. Seeing that there were flowers in both stands very incompatible with the men's apparent, or rather their ostensible means, we made searching inquiries into both their means, and found them very different. One had beggared himself, and made away with his own clothes, and neglected his wife's and children's appearance, and spent the money in flowers,—the other had been regularly served by a gardener in the neighbourhood with everything from his master's collection, and the said gardener "went halves" in all the cottager gained by showing and selling flowers. In one case, a man had been frugal and well off until a wrong spirit had been aroused by the award of prizes for flowers among men who could not afford to buy them. He had been beaten time after time by better flowers, and resolved to get better still, if possible. He purchased upon credit, and paid for them at so much per week, which had to be withheld from his family; and deprived them of comforts, of respectability, and engendered a sort of indifference to appearances, that went a long way towards confirmed demoralization, especially as the man, from some cause, neglected one of his payments, and became reckless, and the dealer, seeing he would be likely to lose, took the first steps towards compelling payment. The other, with the sole ambition of beating his fellow—but more humble—brethren, had consented to be the receiver of things stolen from a gentleman's garden, which, perhaps, he never would have thought of but for the folly of those who awarded prizes to poor men for subjects which are only appropriate to those in good circumstances. It may be said that the object was only to encourage the growth of common flowers; but where is the limit when the prizes are for the best? They might as well offer a race-cup for cottagers' horses, and say they meant the cottagers to run only their cart-nags, as to give prizes for the best flowers shown, and suppose that all would show common. But there is no excuse for awarding prizes to cottagers for flowers of any kind (except, perhaps, cauliflowers,) because for cottagers' purposes they are perfectly useless, and for mere ornament to their gardens the cottager wants no prize to induce him to cultivate all the flowers he ought to adopt. There is not one good purpose to be attained by inducing cottagers to grow flowers. If he loves them, he will get enough for his garden for his own sake; and if he does not love them, all the time he is induced to spend on them is labour instead of amusement; whereas his vegetables ought to be encouraged; superiority in the culture of them is desirable. Everything that can influence a working man to occupy his time in producing that which is food or money, leads him in the right way. The expense of vegetable seed is comparatively nothing to the value of the food produced. There is no temptation to beg, borrow, steal, or even to buy enough to hurt his home, or deprive his family of their proper clothing and comfort, so far as his ordinary circumstances permits; whereas, if he is induced to lay out crowns for this flower, half-sovereigns for that, and even shillings for the other, he saddles himself with weekly payments which he cannot withhold from his family without curtailing their respectability and endangering their morals. If the mind be broken down by privations, and the pride of neatness and cleanliness be wounded for want of the means to indulge it, it soon becomes reckless. The most creditable pride the

mother of a family can have is that which she takes in neatness and cleanliness. If she be deprived of the means to procure decent clothing for herself and children, every week renders her condition worse, and the case more hopeless, because time makes rapid inroads on dress. The more homely it is the more constant must be the care and attention; but time and attention cannot create new, though it may preserve old, for a definite period.—*London Horticultural Magazine.*

The Horse-Chesnut.

The Horse-chesnut is a tree of the largest size, with an erect trunk, and a pyramidal head, sometimes attaining a height of ninety or one hundred feet. The leaves are large, of a deep green, and singularly interesting and beautiful, when first developed. When enclosed in the bud, they are covered with a pubescence, that falls off as they become expanded, which occurs sooner or later, according to the dryness or moistness of the season. The buds are covered with a gummy substance, which protects their downy interior from the wet. The growth, both of the tree and of the leaves, is very rapid, sometimes the young shoots and leaves being perfected in three weeks from the time of their first unfolding. The flowers appear a short time after the leaves, and are white, variegated with red and yellow; and in Britain and the northern parts of the United States, they expand in May, and the fruit ripens about the end of September or early in October.

The native country of the common horse-chesnut, Mr. Royle observes, "is yet unknown, though stated, in some works, to be the north of India." He says that he never met with it, though often visiting the mountains of that country, where, if anywhere, it was likely to be found, and where the Indian horse-chesnut was found in abundance.

According to M. Bon de Saint-Hilaire, the horse-chesnut passed from the mountains of Thibet to England in 1550, and thence to Vienna, by Clusius, and afterwards to Paris by Bachelier. It is also stated by Clusius, in his "Rariorum Plantarum Historia," that there was a plant of this species at Vienna, in 1588, which had been brought there 12 years before, but which had not then flowered. It has also been said that this tree was first raised in France, from seeds procured from the Levant, in the year 1615, by one Bachelier. Parkinson, in 1629, says, "Our Christian world had first a knowledge of it from Constantinople." The same author placed it in his orchard, as a fruit tree, between the walnut and the mulberries. We afterwards find it mentioned in Johnson's edition of Gerard's "Herbal," in 1633, as then growing in Mr. Tradescant's garden, at South Lambeth. From this period till the time of Miller, it appears to have attracted great attention, and acquired a high reputation as an ornamental tree, as he represents it in 1731, as being very common in England, and extensively employed in the formation of avenues and public walks.

The largest horse-chesnut supposed to exist in Britain, is at Nocton, in Lincolnshire. It is represented as being a most magnificent tree, 59 feet high, with immense branches, spreading over a space of 305 feet in circumference. The branches are supported by props, so that at a little distance, the tree appears like an immense Indian bannian. At Coombe Abbey, in Warwickshire, there is another tree of this species, which attained the height of 70 feet in one hundred years after planting, and had a trunk seven feet three inches in diameter, with an ambitus, or spread of branches, of 103 feet. Sir T. Dick Lauder, speaking of horse-chesnuts in Scotland, says, "The horse-chesnuts on the lawn, which was formerly the garden of Dawick, the seat of Sir John Murray Nasmyth, Bart., a few miles from Peebles, in Tweeddale, are certainly the oldest and finest in Scotland; or, perhaps, we should say there are none equal to them in Britain. They stand twelve feet from each other; but they support a mass of foliage that appears to be but one head, which takes a beautiful form, and covers an area of ground, the diameter of which is 96 feet. The larger of the two is in girt, immediately above the root, 16½ feet. The smaller tree is 12½ feet in circumference at the base, and 10 feet at 3 feet high." The age of these trees was estimated by him to be from 180 to 190 years. Mr. Loudon has recorded another tree of this species, as growing at Enfield, near London, which, in 1835, had attained the height of 100 feet.

The largest horse-chesnut in France, and which was considered as the parent stock from which all others have been propagated in that country, formerly existed in the garden of the Temple. The second tree of this species introduced into that kingdom, was planted in the Jardin des Plantes, in 1650, and died in 1767. A section of its trunk is still preserved in the Museum of Natural History. There is a tree of this kind existing in the garden of the Tuileries, which is distinguished, even in summer, from all others in the same garden, by the profusion of flowers with which it is covered, and also by the earliness of their putting forth. It

is said to unfold its leaves always a fortnight earlier than any others, which is exemplified by the following historical incident. On Napoleon's entry into Paris, on the 20th of March, 1815, after his return from the island of Elba, this tree furnished to him and his friends, foliage for their personal decoration, being the only tree in the leaf in the garden of the Tuileries.

In Germany, the horse-chesnut, after having been planted at Vienna, soon found its way to Baden, where it was planted about the end of the sixteenth century, and where some of the trees are said to be still in existence.

The introduction of the common horse-chesnut into the United States probably dates back to about the middle of the seventeenth century. The tree, supposed to be the first brought to this country, is still standing on the estate of Mr. Lemuel W. Wells, of Yonkers,—formerly Phillipsburgh, —New York, and is 10 feet in circumference at a yard above the ground, 65 feet in height, with an ambitus, or spread of branches of 50 feet. It is in a flourishing condition, and bears a profusion of fruit, from which the New York nurseries and seed stores are annually supplied. It is said to have been planted by Frederick Phillipse, the founder of Phillipsburgh, who formerly lived on the place of its present proprietor. In the vicinity of this tree there are numerons others of nearly the same magnitude, which were raised from its nuts, and from the accounts of the oldest residents of Yonkers, they have not increased materially in size within their recollection.

The horse-chesnut requires a deep, free, loamy soil, and will neither attain an ample size, nor flower freely, except in a situation rather sheltered than exposed. It is always propagated by the nut, sown in autumn or spring, and covered with from two to three inches of soil. The cotyledons do not rise to the surface, as in the oak, the beech, and some other trees. "Some nurserymen," says Loudon, "cause the nuts to germinate before sowing them, in order to have an opportunity of pinching off the extremity of the radicle; by which means the plants are prevented from forming a taproot; or, at least, if a taproot is formed, it is of a much weaker description than it would otherwise be, and the number of lateral fibres is increased; all of which is favourable for transplanting. When the tree is intended to attain the largest size, in the shortest time, the nut ought to be sown where the tree is finally to remain; because the use of the taproot is mainly to descend deep into the soil, to secure a supply of water, which, in dry soils and seasons, can never be obtained in sufficient quantities by the lateral roots, which extend themselves near the surface in search of nourishment and air." This is admitted, by Selby, to be the case for a certain number of years, but he doubts whether a transplanted tree will not ultimately attain as large a size as one reared in the manner recommended above. He cites an instance of a tree at Twizell, eighteen years planted, which measured, at two feet from the ground, four feet two inches in circumference, with a height of 38 feet.

Insects.—The foliage of the Æsculus hippocastanum is rarely eaten by the larvæ of insects, except by those of several species of the Geometriæ, some of which indiscriminately attack every tree within their reach, and persist in their devastations, unless the qualities of the leaves are disagreeable to them in the extreme. Among the trees, in which the leaves are unpleasant to them, are the Ailantus glandulosa, Catalpa syringifolia, and Broussonetia papyrifera (Paper mulberry.)

Properties and Uses.—The wood of the horse-chesnut is white and very soft, and according to Loudon, when dry, weighs from 35 to 37 pounds to a cubic foot. It is unfit for use where much strength and durability in the open air are required; nevertheless, there are many purposes for which it is applicable, when sawn into boards; such as for flooring, lining to carts, packing-cases, &c. In France, sabots, or wooden shoes are made from it; and it is said to be used by carvers, turners, &c. Boutcher says, that it is suitable for water-pipes that are to be kept constantly under ground; and it is also recommended for this purpose by Du Hamel. The charcoal made of this species may be used in the manufacture of gunpowder; and the ashes of every part of the plant, more especially of the fruit, afford potash in considerable quantity. The bark, which is very bitter, is employed for tanning, and also for dyeing yellow; and it has been used medicinally as a substitute for Jesuit's bark. In Turkey the nuts are ground, and mixed with horse food, especially when the animals are broken winded; and in their crude state, they are eaten by goats, sheep, deer, and hogs. They are used in Ireland to whiten linen, and for this purpose are rasped into water, in which they are allowed to macerate for some time. The saponaceous juice, which they contain, is very useful, not only in bleaching, but in washing linens and other stuffs. The nuts must be peeled and ground, and the flour of twenty of them is sufficient for ten quarts of water; and either linens or woollens may be washed with the infusion,

without any soap, as it effectually eradicates spots of all kinds. The clothes, however, should afterwards be rinsed in clean water. The nuts, when ground into flour, and mixed in the proportion of one-third with the flour of wheat, are said to add to the strength of bookbinder's paste; and when steeped in hot water, and mixed with an equal proportion of bran, it makes a nutritious food for pigs and poultry. M. Vergaud has proposed to change the starch contained in the flour into sugar, and afterwards employ it in distillation.

In Europe and America, the horse-chesnut can only be considered as an ornamental tree. It produces a splendid effect when in flower, either singly, in avenues, or on the margins of plantations. Gilpin objects to this tree, as being "lumpish in its form;" but in saying this, he evidently judged of the tree merely with reference to picturesque beauty, to which it has but few pretensions till it becomes very old; whereas, in point of floral beauty, it is unequalled by few other trees. "To the painter the magnificence of its stature" and the richness of its drapery, especially when clothed in the beauty of its broad palmated leaves, and embroidered with its profusion of silver flowers, "scarcely atone for the exceeding regularity of its form, terminating, as it invariably does, when left to the hand of nature, in an exact parabola." And in addition to these beauties, its massive and luxuriant summit contrasts well with those of trees of a more airy character, and thus prodnes that breadth of light and shade so essential to landscape scenery.—*Browne's Trees of America.*

Flour, Cheese, and Butter Trade.

The Rochester Democrat of Tuesday, furnishes a review of the flour trade at that place, which we copy in an abridged form.

The following table shows the amount of flour shipped from Rochester for three years past, during the season of canal navigation:

	1845.	1846.	1847.
Total,	518,318	540,232	588,080

To ascertain the whole quantity manufactured in the place, it is necessary to add to the above amount the 20,000 barrels forwarded east by rail-road during the suspension of navigation—30,000 for home consumption, and a few thousand barrels exported by lake. This will show an aggregate of about 650,000 barrels turned out by the Rochester mills this year, yielding, with the bran, shipstuffs, &c., to the State, a revenue of $200,000.

The supply of wheat is derived from the Erie canal, Genesee Valley canal, Tonawanda rail-road, Lake Ontario, and wagons from the country adjacent. The following will show the receipts by canal. The column for 1847 is brought down to December 1st, since when a few thousand bushels were received:

	1845.	1846.	1847.
Total,	1,042,426	1,634,096	1,879,110

The receipts by the Erie canal have increased this year, 25 per cent., while there is a considerable falling off in those by the Genesee canal.

The receipts of wheat by rail-road are estimated at 150,000, and those by the lake at 60,000 bushels.

The mills, to manufacture 650,000 barrels of flour, require 2,825,000 bushels of wheat.

Amount necessary to supply the mills,		2,825,000
Receipts by canal	1,879,110	
By rail-road,	150,000	
By lake,	60,000	
		2,089,110
Amount supplied by team,		835,890

The Cheese Trade.

The Western Reserve Chronicle says: By a reference to the books at the cana office, we are enabled to state the amount cleared for market during the last six years, viz:

1842, pounds,	1,230,168
1843,	2,415,177
1844,	3,944,404
1845,	2,995,376
1846,	4,763,723
1847,	6,599,170

The Albany Journal gives the following statement of the amount of cheese received at Albany and Troy during the past twelve years:

1836, pounds,	14,060,000
1837,	15,500,000
1838,	13,810,000
1839,	14,530,000
1840,	18,820,000
1841,	14,170,000
1842,	19,004,000
1843,	24,331,000
1844,	26,677,500
1845,	27,542,861
1846,	35,560,180
1847,	40,014,000

Cheese and Butter.

The following are a part of the exportations of cheese from the State of Ohio:

Trumbull, pounds,	4,000,000
Portage,	2,000,000
Geauga,	250,000
Madison,	200,000
Ashtabula,	5,000,000
Five counties,	11,450,000

It appears, then, that the State must export at least twelve millions of pounds of cheese, probably much more.

Of butter, the counties engaged in exporting are much more numerous. The following are part:

Carroll, pounds,	75,000
Crawford,	200,000
Geauga,	50,000
Harrison,	250,000
Hancock,	35,000
Huron,	100,000
Muskingum,	200,000
Morgan,	20,000
Trumbull,	160,000
Nine counties,	1,020,000

The exports of the State is probably about four millions of pounds. The dairy products of Ohio are, therefore, very large.—*Patent Reports.*

The Plum.

The original parent of most of the cultivated plums of our gardens is a native of Asia and the southern parts of Europe, but it has become naturalized in this country, and in many parts of it is produced in the greatest abundance. That the soil and climate of the middle States are admirably suited to this fruit, is sufficiently proved by the almost spontaneous production of such varieties as the Washington, Jefferson, Lawrence's Favourite, etc.; sorts which equal or surpass in beauty or flavor the most celebrated plums of France or England.

Uses.—The finer kinds of plums are beautiful dessert fruits, of rich and luscious flavor. They are not, perhaps, so entirely wholesome as the peach or the pear, as, from their somewhat cloying and flatulent nature, unless when very perfectly ripe, they are more likely to disagree with weak stomachs.

For the kitchen the plum is also very highly esteemed, being prized for tarts, pies, sweetmeats, etc. In the south of France an excellent spirit is made from this fruit fermented with honey. In the western part of this State, where they are very abundant, they are halved, stoned, and dried in the sun or ovens, in large quantities, and are then excellent for winter use. For eating, the plum should be allowed to hang on the tree till perfectly ripe, and the fruit will always be finer in proportion as the tree has a more sunny exposure. The size and quality of the fruit is always greatly improved by thinning the fruit when it is half grown. Indeed to prevent rotting and to have this fruit in its highest perfection, no two plums should be allowed to touch each other while growing, and those who are willing to take this pains, are amply repaid by the superior quality of the fruit.

One of the most important forms of the plum in commerce is that of *prunes*, as they are exported from France to every part of the world. We quote the following interesting account of the best mode of preparing prunes from the *Arboretum Britanicum.*

The best *prunes* are made near Tours, of the St. Catherine plum and the prune d'Agen; and the best *French plums* (so called in England,) are made in Provence, of the Perdrigon blanc, the Brignole, and the prune d'Ast; the Provence plums being most fleshy, and having always most bloom. Both kinds are, however, made of these and other kinds of plums, in various parts of France. The plums are gathered when just ripe enough to fall from the trees on their being slightly shaken. They are then laid, separately, on frames, or sieves, made of wicker-work or laths, and exposed for several days to the sun, till they become as soft as ripe medlars. When this is the case, they are put into a spent oven, shut quite close, and left there for twenty-four hours; they are then taken out, and the oven being slightly reheated, they are put in again when it is rather warmer than it was before. The next day they are again taken out, and turned by slightly shaking the sieves. The oven is heated again, and they are put in a third time, when the oven is one-fourth degree hotter than it was the second time. After remaining twenty-four hours, they are taken out, and left to get quite cold. They are then rounded, an operation which is performed by turning the stone in the plum without breaking the skin, and pressing the two ends together between the thumb and finger. They are then again put upon the sieves, which are placed in an oven, from which the bread has been just drawn. The door of the oven is closed, and the crevices are stopped round it with clay or dry grass. An hour afterwards the plums are taken out, and the oven is again shut with a cup of water in it, for about two hours. When the water is so warm as just to be able to bear the finger in it, the prunes are again placed in the oven, and left there for twenty-four hours, when the operation is finished, and they are put loosely into small, long, and rather deep boxes, for sale. The common sorts are gathered by shaking the trees; but the finer kinds, for making French plums, must be gathered in the morning, before the rising of the sun, by taking hold of the stalk between the thumb and finger, without touching the fruit, and laid gently on a bed of vine

leaves in a basket. When the baskets are filled, without the plums touching each other, they are removed to the fruit room, where they are left for two or three days exposed to the sun and air; after which, the same process is employed as for the others; and in this way the delicate bloom is retained on the fruit, even when quite dry.

The plum is usually propagated in this country by sowing the seeds of any common free growing variety,—avoiding the damsons which are not readily worked,—and budding them when two years old, with the finer sorts. The stones should be planted as soon as gathered, in broad drills,—as in planting peas,—but about an inch and a half deep. In good soil the seedlings will reach eighteen inches or two feet in height the next season, and in the autumn or the ensuing spring, they may be taken from the seed beds, their tap roots reduced, and all that are of suitable size, planted at once in the nursery rows, the smaller ones being thickly bedded until after another season's growth.

The stocks planted out in the nursery will, ordinarily, be ready for working about the ensuing midsummer, and, as the plum is quite difficult to bud in this dry climate, if the exact season is not chosen, the budder must watch the condition of the trees, and insert his buds as early as they are sufficiently firm,—say, in this neighbourhood, about the 10th of July. Insert the buds, if possible, on the north side of the stock, that being more protected from the sun, and tie the bandage rather more tightly than for other trees.

The English propagate very largely by layers, three varieties of the common plum—the *Muscle*, the *Brussels* and the *Pear* plum, which are almost exclusively employed for stocks with them. But we have not found these stocks superior to the seedlings raised from our common plums,—the Blue Gage, Horse-plum, &c.,—so abundant in all our gardens. For dwarfing, the seedlings of the Mirabelle are chiefly employed.

Open standard culture is the universal mode in America, as the plum is one of the hardiest of fruit trees. It requires little or no pruning, beyond that of thinning out a crowded head, or taking away decayed or broken branches, and this should be done before midsummer, to prevent the flow of gum. Old trees that have become barren, may be renovated by heading them in pretty severely, covering the wounds with our solution of gum shellac, and giving them a good top dressing at the roots.

The plum will grow vigorously in almost every part of this country, but it only bears its finest and most abundant crops in heavy loams, or in soils in which there is a considerable mixture of clay. In sandy soils, the tree blossoms and sets plentiful crops, but they are rarely perfected, falling a prey to the curculio, an insect that harbours in the soil, and seems to find it difficult to penetrate or live in one of a heavy texture, while a warm, light, sandy soil, is exceedingly favourable to its propagation. It is also, undoubtedly true, that a heavy soil is naturally the most favourable one. The surprising facility with which superior new varieties are raised merely by ordinary reproduction from seed, in certain parts of the valley of the Hudson, as at Hudson, or near Albany, where the soil is quite clayey, and also the delicious flavor and great productiveness and health of the plum tree there almost without any care, while in adjacent districts of rich sandy land it is a very uncertain bearer, are very convincing proofs of the great importance of clayey soil for this fruit.

Where the whole soil of a place is light and sandy, we would recommend the employment of pure yellow loam or yellow clay, in the place of manure, when preparing the border or spaces for planting the plum. Very heavy clay, burned slowly by mixing it in large heaps with brush or faggots, is at once an admirable manure and alterative for such soils. Swamp muck is also one of the best substances, and especially that from salt water marshes.

Common salt we have found one of the best fertilizers for the plum tree. It not only greatly promotes its health and luxuriance, but from the dislike which most insects have to this substance, it drives away or destroys most of those to which the plum is liable. The most successful plum grower in our neighbourhood applies, with the best results, half a peck of coarse salt to the surface of the ground under each bearing tree, annually, about the first of April.—*Downing's Fruit Trees.*

The Goose.

In Willoughby's Ornithology we find the following striking anecdote: "The following account of a Canada goose is so extraordinary, that I am aware it would with difficulty gain credit, were not a whole parish able to vouch for the truth of it. The Canada geese are not fond of a poultry-yard, but are rather of a rambling disposition. One of these birds, however, was observed to attach itself in the strongest and most affectionate manner to the house-dog, and would never quit the kennel except for the purpose of feeding, when it would return again immediately. It always sat by the dog, but never presumed to go

into the kennel, except in rainy weather. Whenever the dog barked, the goose would cackle and run at the person she supposed the dog barked at, and try to bite him by the heels. Sometimes she would attempt to feed with the dog; but this the dog, who treated his faithful companion rather with indifference, would not permit. This bird would not go to roost with the others at night, unless driven by main force; and when in the morning she was turned into the field, she would never stir from the yard gate, but sit there the whole day in sight of the dog. At last orders were given that she should be no longer molested, but suffered to accompany it as she liked. Being thus left to herself, she ran about the yard with him all the night; and what is particularly extraordinary, and can be attested by the whole parish, whenever the dog went out of the yard and ran into the village, the goose always accompanied him, contriving to keep up with him by the assistance of her wings; and in this way of running and flying, followed him all over the parish. This extraordinary affection of the goose towards the dog, which continued to his death, two years after it was first observed, is supposed to have originated from his having accidentally saved her from a fox in the very moment of distress. While the dog was ill, the goose never quit him day or night, not even to feed; and it was apprehended she would have been starved to death had not orders been given for a pan of corn to be set every day close to the kennel. At this time the goose generally sat in the kennel, and would not suffer any one to approach, except the person who brought the dog's or her own food. The end of this faithful bird was melancholy; for when the dog died, she would still keep possession of the kennel; and a new house dog being introduced, which in size and colour resembled the one lately lost, the poor goose was unhappily deceived, and going into the kennel as usual, the new inhabitant seized her by the throat and killed her."

American Ploughs in England.

In a late Number of the Mark Lane Express, we find the following:

"After maturely trying Mr. Slocum's plough against the best of ours, their performances were as follows: First, his ploughs tried against Adams' Northampton plough and Howard's Champion plough, on a clay soil, not very strong clay. Howard's plough at five inches deep by eleven wide, draught 31 stone: Adams' plough at the same width and depth, 30 stone; whilst the American at five inches by fourteen inches wide, drew only 26 stone. In justice to the American ploughs, I must say that they cut and turned their furrow quite as well as the others, at the same time breaking the land to pieces, making a capital preparation for either drilling or dibbling; indeed they are the most simple, light, strong, and efficient ploughs that it is possible to conceive. Yesterday, a gentleman farmer and myself put one of them on trial with one of Comtam and Hallet's dynamometers against the lightest drawing plough of my own upon a field, one of which is a very strong clay, and the other a clayey lea mold, which very few ploughs will clear themselves in; the middle a mixture of the two, with a little gravel in it. We first tried them at five inches deep, my own at 11 inches wide, which was as much as it would cut up and turn properly, in the strong clay, and it drew 44 stone; in the mixture, 48 stone; and in the lea mold 46 stone. We then tried it at 8 inches in depth by 11 in width, when we found on the strong clay 46 stone; on the mixture 44 stone, and in the lea mold 48 stone. We then tried the American plough at 5 inches deep and 14 wide, and found the draught—in the strong clay, 38 stone; mixture 40 stone; in the lea mold, 32 stone; the same width, and 8 inches deep in the clay, 42 stone; in the mixture 43 stone; and in the lea mold 36 stone."

Soil for Sheep.

The soil most suitable for the sheep is a dry one. It is emphatically an upland animal, and loves the short and varied herbage of hill and mountain slopes, provided the soil is not poachy from an excess of moisture. To no other domestic quadruped is water more repugnant, unless when necessary to lave its thirst, as will be seen in its aversion to crossing streams, and always selecting the driest points for feeding and rest. Whether it is thus, because it is endowed with the instinctive knowledge, that the presence of too much moisture in a soil engenders diseases too fatal to it, cannot conclusively be determined. But there is strong presumptive evidence that it is so, from the fact that this intelligent principle abounds in all the brute creation to that degree, when free from the restraints of man, which induces the formation of such habits only as conduce for the most part to their welfare and safety.

The chalky districts of England, on which so large a portion of the Down sheep are fed, causes a harsh and inelastic feeling of their wool. Blacklock says—"Soil, also, has much influence on the pliability of the wool. Chalky lands, which are so notorious for injuring the

fleece, are supposed to act in the manner of a corrosive, but the correct explanation is, not that the chalky particles attack the fibre in a direct way, but that they render it brittle, by absorbing the oily moisture with which it is naturally imbued. Moreover, the plants growing in such situations cannot but be injurious to sheep, owing to their impregnation, though a slight one, with calcareous matter; for grooms know well how soon a horse's coat becomes disordered by the frequent use of hard or well water, and prefer, therefore, the river for their steeds."—*Morrell's Shepherd.*

Youatt says: "When little cold has been experienced in the winter, and vegetation has been scarcely checked, the sheep yields an abundant crop of wool, but the fleece is perceptibly coarser, as well as heavier. When the frost has been severe, and the ground long covered with snow—if the flock has been fairly supplied with nutriment, although the fleece may have lost a little in weight, it will have acquired a superior degree of fineness, and a proportional increase of value. Should, however, the sheep have been neglected and starved during this prolongation of cold weather, the fleece as well as carcase is thinner, and although it may have preserved its smallness of filament, it has lost in weight, and strength, and usefulness."

THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

Philadelphia, Seventh Month, 1848.

With this Number, as our readers have been notified, the publication of the Farmers' Cabinet will cease. For twelve years its different editors have laboured to give to the farmers of the United States such information on the subject of their calling, as their extended means of acquiring it, placed in their power. During the several years that it has been under the control of the present proprietor and editor, he has yielded much of his time to its preparation, month by month, and he is now able to look over the volumes with no small degree of satisfaction. The pretensions of the Cabinet have never been very loudly proclaimed; we have been content to allow it to tell its own story, and quietly show that it meant to be a substantially useful and a matter of fact paper—practical in its lessons—not visionary in its theories.

The intercourse of the editor with his subscribers, has been pleasing and agreeable. The wide correspondence which it has led to, has been productive of an interchange of a multitude of kindly feelings, as well as kindly offices, and towards many, though he may never have seen their faces, he can entertain no other than sentiments of esteem and kindness. In taking leave of them, while he desires that their barns may be filled with plenty, and all their flocks yield their increase, he would also express the hope, that by and by, when the harvest is past and the summer is ended, and the great Husbandman shall have garnered his wheat, we shall all be gathered.

Recently in England, at a public sale of Short horns, belonging to the estate of Earl Spencer, we learn that eighty-eight were sold for the very handsome sum of £5,743 10*s.*, upwards of $28,000. Sixteen bulls averaged $450 each. One, "Upstart," sold for £210, and another, "Usurer," for £420, about $2,100. This does not look as if Durhams were less valuable in England now than formerly.

Our *Exchange* papers will please observe that we have no longer the Cabinet to send them:—they will therefore be discontinued.

Our subscribers may remit for the American Agriculturist, either to this office, or to the publisher in New York. The continuance of all is solicited.

The 9th and 10th No's of *Colman's Tour* have not yet been received. When they shall be, they will be immediately forwarded to our subscribers.

☞ Subscribers to the Cabinet, will please observe the Notice on the first page. There are a good many who still owe for this paper. Its publication in this city will cease with the present number, and as bills have been recently forwarded to those in debt for it, they are earnestly requested to remit the amounts due by mail. In order to make this *reasonable* request more impressive upon those for whom it is intended, we must repeat it; and ask all who are in arrears for the CABINET, to please do as they would be done by, and forward forthwith, the amount due.

The American Agriculturist, to which the subscription list of the Cabinet has been transferred, is edited by A. B. Allen, well known to our farming community all over the United States, as a man well qualified to conduct such a paper: and we trust our readers will very generally be disposed to continue their subscriptions; where, however, they determine otherwise, they will please not fail to comply with the recommendation in the *Notice* in the first column on the first page of this number.

The quantity of rain which fell in the 6th month, 1848, was ..... 4.43 in.

Penn. Hospital, 7th mo. 1st.

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By the decision of the Post Master General, the "Cabinet," is subject only to newspaper postage.

Joseph Rakestraw, Printer.