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THE

GENESEE FARMER,

A MONTHLY JOURNAL DEVOTED TO

AGRICULTURE, HORTICULTURE,

DOMESTIC & RURAL ECONOMY.

ILLUSTRATED WITH ENGRAVINGS OF

FARM BUILDINGS, IMPLEMENTS, DOMESTIC ANIMALS,

FRUITS, FLOWERS, SHRUBS, &c.

EDITED BY

DANIEL LEE AND JAMES VICK, JR.

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ROCHESTER, N. Y.

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VOL. XIV.

ROCHESTER, N. Y., JANUARY, 1853.

No. 1

THE FARM AS A MANUFACTORY.

THERE are some fourteen different substances which enter into the composition of plants and which must exist in an available form in the soil or the atmosphere surrounding it, before any crop can be obtained. A knowledge of the source, nature, and properties of these various substances, cannot but be interesting and useful to every inquiring agriculturist. Yet it is in looking at the farm as a manufactory of human food, and these fourteen substances as the raw material employed, that we can hope to arrive at correct notions of farm economy, or adopt any judicious system of rotation and general farm management.

Taking this view of the matter, we find that while every one of these fourteen elements enter into the composition of all our crops, yet, that they enter into them in very different proportions, and also that the quantity of them in the soil is very variable. Thus, in some soils we get more than a *thousand times* as much silica or alumina as of potash and phosphoric acid. Sulphur and lime are in many cases equally proportionally scarce. We have, therefore, not only to look at the amount of substances in the plant, but also at the quantity of these raw materials at command in the soil; and, what is still more important, the kind and quantity of substances necessarily removed from the farm in grain and animals raised from the soil. We cannot expect to treat such a subject satisfactorily in a single article and shall therefore continue it in subsequent numbers of the *Farmer*.

Of the fourteen elements which compose our commonly cultivated plants, ten are called inorganic or mineral elements, and are left in the form of *ashes* when the plants are burnt; the other four are termed organic elements, and are, in their natural unorganized state, *gases*. These four elements form from 84 to 98 per cent. of the dry substance of all our crops, and are dissipated by the burning process; the change from a solid to a gaseous form, eliminating both heat and light, as is well known to all. The form in which these various elements enter the plant, is not by any means well understood; it is true we have many very plausible theories on the subject, but what is really known—demonstrated by inductive philosophy—is very little. The four organic elements, it is generally admitted, enter the plant as carbonic acid and ammonia, the former containing carbon and oxygen, the latter nitrogen and hydrogen; so that carbonate of ammonia (smelling salts) contains *all* the organic elements of plants. It is well known that plants take up all their food in solution, and it has been ascertained by careful experiment that for every pound of organic elements organized in the plant, or, we will say, for every pound of carbonate of ammonia taken up by the plant, 200 lbs. of water are imbibed and evaporated through the leaves, &c.; and for every pound of the mineral elements organized, 2000 lbs. of water are imbibed. In this large

quantity of water, most of the mineral substances of plants are soluble. It is perfectly obvious to all, that if we wish to increase the fertility of a farm, or even to maintain it in a normal condition, and annually export crops and animals from it, we must restore, in some way, the elements so exported. Yet while this is so, it is not only possible, but is, in too many instances, the case, that a soil can, by cultivation alone, be made to produce large crops, without having any of the removed elements taken back as manure; and if this is the most *profitable* method of farming for the present generation, we have but little hope of effecting a reformation by preaching against the morality of the practice. We, however, by no means think this is the case, and we believe a new era is about to commence in our agriculture, and the New World will be as noted for her scientific farming as she already is for her ingenuity in mechanics and in the application of scientific principles to the great arts of civilized life.

The luxuriousness of a crop depends, within certain limits, on the amount of *available food* brought to the plants by the water they take up. Most soils, we may say all soils capable of profitable cultivation, contain all the mineral elements of plants, but they are in a dormant or latent condition, and are consequently incapable of being used as food for plants. Cultivation, or tillage, converts these dormant, latent resources of the soil into active available substances. The former may be considered as the farmer's capital *permanently invested*; the latter, the *floating capital* of the concern. The profits of the establishment will be in direct proportion to the amount of floating capital annually turned, without overtaxing the permanent investment; in other words, the crops and profits of a farm are in proportion to the amount of *available* substances of plants in the soil, without drawing too much on those lying in a dormant condition; that is, we should keep, in an available form, food enough for thirty bushels of wheat instead of only sufficient for fifteen; for not only do we lose money in not having thirty bushels to sell, but we also, in all probability, lose a considerable *portion* of available substances from the plants being unable to take them up, from lack of others equally necessary for their luxurious growth. It will therefore be our object to show what substances are most available in the soil, what are removed from the farm in a judicious system of rotation of crops and feeding of animals, and the best means to employ not only to keep the farm in its original latent capacity for producing food, but also how to keep substances sufficient for a *large crop* each year in an available condition. That this can be done scientifically, we have no sort of doubt; that it can be done economically, at present, when the farmers of the older settled States have to compete with the rich virgin soils of the west, and consequently comparatively low prices, is a matter which admits of some little doubt and which we will endeavor fully to investigate; for we well know that however interesting it may be to know what can be done under certain conditions, the vital question ever must be, *will it pay* under existing circumstances? This inquiry stares us in the face at every step of a scientific investigation in agricultural economy, and in the application of scientific principles to any of the great practical arts of life; we will not thrust it aside, but we will have an eye to the economic, as well as the practical and scientific, in examining our subject.

We shall probably express views that will not accord with the commonly accepted opinions on this subject; or, at least, that do not exactly agree, in some important respects, with the teachings of a certain class of chemico-agricultural writers. We shall, however, assert nothing but what we believe to have been demonstrated by a most laborious and extensive series of chemical investigations, connected with systematic experiments on various crops and animals with which the writer has hitherto for some time been engaged. We shall assert nothing that in any way conflicts with the common practice of enlightened practical agriculturists, who have, as we believe, taught by close observation and long experience, adopted that very system of rotation and general farm management which now is, or will be, indicated and *explained* by scientific research.

IRRIGATION AND DRAINAGE.

Nothing will contribute more to the advancement of agriculture in this country, than the proper use of water. It forms nearly half of the organized solids in all plants, and is the grand solvent of every element of their food, and the medium through which alimentary substances are conveyed into all living systems. Experience teaches that all cultivated plants are damaged, or destroyed, either by too little or too much water. Irrigation is the remedy for the first named evil, and drainage the proper curative means applicable to the last named malady.

Hitherto, neither irrigation nor drainage has received a tithe of the attention in the United States, which it deserves. New York alone has nearly a thousand miles of canals that might be very profitable in part for enriching all the improved lands near them. In the water of these artificial rivers there are millions of tons of the most desirable organic and inorganic elements of crops, now wasted, that might be turned to a profitable account. In many countries, canals are constructed exclusively for purposes of irrigation, and pay a large income from the investment. The correspondent of the *London Morning Chronicle* describes one in the valley of the Rhone, in France, where "the increase of production in the first season more than equalled the cost of the work." He adds: "The influence of this excellent canal is prevented from being extended to another barren plateau, by the obstinacy of two individuals, who refuse to allow the works to be carried across their lands, although they have been offered double the estimated worth of their entire estates." Farmers pay \$1.30 per acre per annum to canal companies for the use of water. Irrigation pays a high profit in the moist climate of England—giving two and three heavy crops of hay in a year, where only one was cut before water was used for manuring as well as moistening the earth. Manure is but the cream of the soil extracted in grass, grain, and roots; and all river, lake, and spring water, holds more or less of this cream, or manure, in solution. Why then not use rivers, lakes, canals, and springs, for manuring purposes? Is it a lack of enterprise? a lack of capital? or a lack of knowledge?

Farms so situated that they can not be irrigated by natural streams nor canals, may be watered in seasons of drouth nevertheless. Upon every square foot of ground in the United States there falls water and snow equal to 180 pounds on an average per annum. So much of this invaluable element as is needed for agricultural purposes, ought to be stored up in capacious reservoirs on elevated places where it falls, to be used, as in the Alps, and many hilly districts in Europe, to water all thirsty fields in summer and autumn. A farmer is not half a husbandman who has not sufficient forethought to husband a reasonable quantity of the most indispensable food of all his growing crops, for a few weeks or months. Providence drops down from the clouds from two to six thousand tons of water in a year on every acre of land. The excess that falls in one month should be kept on the farm, to make good any deficiency that may exist in another. So valuable is artificial irrigation found to be in Great Britain, that steam power and iron pipes are used for elevating and distributing water over hundreds of acres. This can be done at a cost varying from \$20 to \$35 per acre for permanent fixtures. After these are constructed, the cost of irrigation is but a few shillings per acre, as two hands irrigate by hose and jet-pipes ten acres a day—literally raining down seven or eight hundred tons of water a day, into which all needful manure has been thrown for solution. The water is propelled through iron pipes and gutta percha hose, and issues from a metallic nozzle which is wide and flattened, that the continuous stream may spread out and fall in drops like a shower. The suction and force-pump resembles a fire engine used in cities, only it is worked by a small steam engine instead of men. In the north of England, Mr. KENNEDY irrigates 400 acres of improved land, and has

added four-fold to its previous productiveness, by the assistance of an engine of six horse power, which pumps all the water seventy feet before it is distributed. In no other way can barn-yard manure be conveyed to fields so cheaply as dissolved in water and driven by steam. Warm water or cold may be used to wash and leach fermenting manure at pleasure; and the strength of the liquid rained down upon the land by steam, is regulated by an exact rule. It must be weak.

New York was the first State to set the example of using canals for commercial purposes. Let her now achieve for herself greater credit, and reap a larger profit, by wisely extending the service of her canals to fertilize her needy soil. Hitherto these public works, in all the States where they exist, have operated to impoverish the soil by transporting its elements of crops to distant markets, never to return. This ceaseless drain must result in deep and deplorable sterility, unless discontinued. The right use of water, whether rain, river, or from springs and canals, is an object of vast importance. Spring water often contains salts of lime, potash, soda, and magnesia, so indispensable to form the ash of plants, extracted from earth and rocks several hundred feet below the surface. This is drawing valuable alkalies, and alkaline earths, which are true fertilizers, from the deep bosom of mother earth. Spring water also contains crenic and apocrenic acids, both of which abound in available nitrogen.

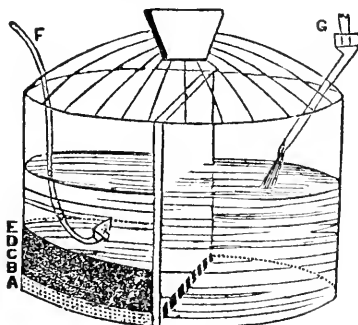
On the Duke of Portland's water meadows, (some 400 acres,) the water is distributed in rounded ditches, so that grass grows on their bottoms and sides, which saves land, and nearly all the expense of keeping them clear of falling earth. These meadows yield two good crops of hay, and considerable grazing every year. They were originally a bog swamp, and nearly worthless until drained.

Drainage, although not everywhere advantageous, like irrigation, is deserving of far more attention than it has yet received. Pipe-draining has the preference over all other contrivances now known. Pipes are made of good clay by a machine, and burnt hard in a kiln, like brick. They are placed end to end in a straight line, water coming in at the joints, and covered first with a layer of straw or sods turned grass-side down, and then with the earth excavated from the ditch. Ditches are now made much cheaper than formerly, by the use of a peculiar trench-plow drawn by an extra team of horses or oxen. Science, art, and system, have brought the operations of draining nearly to perfection. A good out-fall for water is the first thing to be secured, Without this, success is not to be expected; with it, no one need fail to render the wettest ground as dry as need be. The water that drains off from peaty land is generally unfit for immediate use in irrigation, on account of the free vegetable acid it contains. If the soil to be irrigated abounds in lime, the presence of humic or other acid in the water can do little or no harm. Lime is the proper corrector of all acidity in swamp muck, peat, or marsh mud. Aqua ammonia, caustic potash or soda in solution, is the proper chemical test of the presence of humic acid in any soil, or water that may be needed for purposes of irrigation. Humus or humic acid in the presence of an alkali, gives a colored solution of the humate of potash, soda, or ammonia, as the case may be. Humates of lime and magnesia are nearly or quite insoluble. When water charged with organic acids percolates through a soil without lime, it impoverishes the earth rapidly by decomposing the silicates of potash and soda, and removing their bases. The critical study of the organic and inorganic substances washed out of swamp lands full of muck and peat, out of clay deposits abounding in salts of iron and alumina, and from granitic and calcareous earths, has been sadly neglected in this country. Nothing is more common than for a farmer to damage his land to the amount of hundreds of dollars, without finding out his error until it is too late to avoid the evil. By a wise use of water, and a few additional fertilizers, he may improve almost any land in the world, at a small expense. There are one or two (and probably many more) springs in Western New York, that contain free sulphuric acid, and form gypsum as the water comes in contact with lime.

FILTERING RAIN WATER.

From the numerous inquiries we have recently received on the subject of filtering, we are glad to perceive that public attention is directed to the importance of having pure water, and to the injurious effects of any impurities, however little, when constantly taken into the system. It has been said that some men dig their own graves with their teeth. It is certainly true that many diseases that afflict our race, are caused by improper eating and drinking—improper as to quality, quantity, and manner. And though it is true that water is the least injurious of all liquids taken into the stomach, and is the drink appointed by the Creator for every living thing; yet, we have no doubt that disease and death are often caused by the use of impure water. It enters into every thing we eat; our bread, as well as our tea and coffee, are affected by it. This impurity may be so slight, and the injury so little, as to be imperceptible for a time; but it is the continual dropping that wears the stone, and the *continued* use of impure water must produce permanent injury to the human system. The young and tender tree may be driven to the ground by a sudden blast; but the genial influences of light, warmth, and air, seconding its natural disposition, it will again recover its erect position. Let the same tree be planted where it is subject to the prevailing and almost *constant* western winds, and it will be warped by it—trunk, branches, and foliage driven to the east.

Various filters have been invented for purifying water. Most of these have been too troublesome in their operation to be favorably received by farmers. It may be well enough for a man of leisure, whose main business is to do the "chores," to be filtering water by the pailful; but the farmer has other duties demanding his time and attention. The best we are acquainted with, is the one exhibited in the engraving. It is a cistern divided into two parts. G is the pipe for conducting the water into the cistern; F, pipe connected with pump, for extracting the filtered water; A, B, &c., layers of charcoal, gravel, &c.; the black dots are passages for the water from one part of the cistern to the other. The engraving, with the following description, is from *Allen's American Farm Book*:

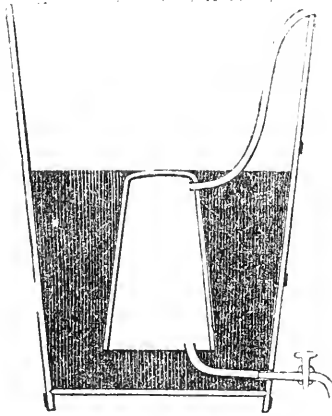


FILTERING CISTERN.

"They may be formed in various ways, and of different materials—stone, brick, or even wood; though the two former are preferable. They should be permanently divided into two apartments, one to receive the water, and another for a reservoir to contain such as is ready for use. Alternate layers of gravel, sand, and charcoal at the bottom of the first, and sand and gravel in the last, are sufficient; the water being allowed to pass through the several layers mentioned, will be rendered perfectly free from all impurities. Occasional cleaning may be necessary, and the substitution of new filtering materials will at all times keep them sweet."

The best portable rain water filter we are acquainted with, is represented in the accompanying cut. We have used one for some time, and can confidently recommend them. It is simply an oaken tub of any required size, three inches larger at the top than at the bottom. A hole is bored through one of the staves some four inches from the bottom, into which a piece of one-inch lead pipe, (tea-chest lead is best,) about ten or twelve inches long, which is pressed out by driving in a mandril to make it water tight. A layer of prepared charcoal, some two inches thick, is first put on the bottom and pounded down; then a layer of washed gravel, which will fill it a little above the horizontal pipe. A stone-ware crock, holding some three gallons, is then put mouth down, resting on the gravel, enclosing the mouth of the pipe. Coal and gravel, equal

parts, mixed thoroughly, are then pounded in around the crock, filling up the tub within six or eight inches; then a layer of clear gravel, with a flat stone or piece of zinc on the top, to prevent the water from displacing the packing. In adjusting the crock, there is a hole near the bottom, or rather the upper end, for the insertion of a small lead pipe through a cork, and passing out through the top of the stave, to admit the air. If one with this air-hole can not easily be procured, take a common crock, and let the pipe pass down under the rim, ascending to the top of the crock inside.



GILBERT'S FILTERING APPARATUS.

The filter being thus completed, place it in the cellar on a box or platform high enough to allow a pail to pass under the faucet; then put in a pewter or wooden faucet, and fill up with *rain water only*. The water for the first day will taste alkaline, and may be thrown away. The gravel should be all sizes up to as large as hickory nuts, and well washed. The coal is the same as prepared and used by distillers, and should be made of hard wood. They will last from two to four years, according to the size, when they will need repacking with new materials.

These filters are made in this city, by JOHN KEDZIE, who furnishes to order three different sizes, which can be forwarded almost any distance. Price, \$5, \$7.50, and \$10.

BRITISH AND AMERICAN AGRICULTURE.

(Continued from Page 372.)

B. I came up to have a little more talk about English farming. I have been thinking a good deal about our last conversation, and especially on what you say respecting the turnep crop and the great advantages the British farmers derive from it. You say that they cultivate one-fourth of their arable land with this crop and get a thousand bushels per acre. I should be at a decided loss to know what to do with them, if I had fifty acres of turneps or ruta bagas. Fancy 50,000 bu. of roots on my farm! — what could I do with them? There is no mistake about one thing, that they would winter an immense number of sheep and cattle, and make a prodigious manure heap. How do they feed them out in England?

A. We must recollect, in contrasting English and American agriculture, that not only are their summers cooler than ours, but that their winters are very much milder. There are very few days on which the ground is covered with snow, and many farmers turn their milch cows into the pastures for a few hours every day during winter.

B. Do they keep their milch cows principally on turneps during winter?

A. No; they seldom give them any, for the turneps impart a disagreeable flavor to the butter. They keep them principally on barley straw and on what little grass they find in the meadows, giving a little hay and bran immediately before and after calving. Some farmers give them mangel wurtzel and the leaves of turneps, which do not affect the taste of the butter.

B. What do they do with the turneps?

A. They use them mostly for fattening cattle and sheep. The common turneps are fit to commence on about the middle of October. They draw off about one-half the turneps and feed them to oxen and fattening cows in the barn yards or "cow houses;" the other half are consumed *on the land* by fattening sheep. In addition to the turnep, the sheep and cattle are fed with some dry food such as barley straw, clover hay, peas, oil cake.

B. When eating the turneps on the land, are the sheep turned on the whole field at once?

A. No; every farmer has a large number of "hurdles," as they call them, and with these, portable fences are made and the turneps apportioned off to the sheep in small quantities. On well managed farms a fresh portion of land is allowed the fattening sheep each morning, and they are not forced to eat the turneps very close, the breeding ewes, separated from the fattening sheep by hurdles, eating up all the turneps clean.

B. I should think this a good plan; but it must be attended with considerable labor, and in large fields a great many of these—what you call them?—hurdles would be required.

A. Eating them in this way, on the land, is attended with much less labor and expense than would be incurred in drawing them to the barn yard and hauling the manure back on the land. Besides their light sandy soils, what they call their best turnep and barley soils, are much improved and consolidated by treading with sheep. It is true, as you say, a great many hurdles are required; for as they are but seven feet long, it takes a considerable many to go across a twenty acre lot. A farmer of 200 acres cannot get along well with less than 500 hurdles. They were perfectly astonished when I told them we had no hurdles in America. They could not think how we managed to get along without them, "and timber so cheap too."

B. What age are their sheep when they commence fattening them.

A. That depends a good deal on the breed kept. The common sheep of the country, which, like our own, are a mongrel breed, are fattened for the butcher the winter before they are two years old. South Down wethers are often fully matured and very fat at from ten to fifteen months old. I have seen a large flock that would average twenty pounds a quarter at a year old; they had, however, been unusually well kept—I should say extravagantly so—and, as the owner told me, "had eaten their heads off." They had been allowed one pound of American oil-cake per day, for which \$45 per ton was paid.

B. I recollect the time when I could get as much linseed oil-cake here as I wished for \$10 per ton, but now it sells readily for \$22. I suppose it is the large demand for it in Europe, and the increased facilities of transportation, that has so enhanced the price.

A. I think even at that price it is the cheapest food we can feed to cattle; cheaper than corn at 60 cts. per bushel. I mix a little of it with corn meal for my horses, and they do exceeding well on it, never better. The English farmers think that pound for pound, oil-cake is worth more than any other substance used as food; while the manure made by the animals taking it, is of the richest and most valuable kind. There was considerable discussion when I was there, which was best economy,—to purchase guano to manure the land, or to purchase American oil-cake for feeding cattle and sheep, and thus make a greater quantity of manure of a much improved quality. I cannot say which is the cheapest, but from the increasing quantity of guano annually used, I am inclined to think that public opinion is in favor of guano. Fancy 160,000 tons of Peruvian guano sold last year in England.

B. What crops do they generally use it for, and how do they apply it? I see some of the papers recommend mixing it with plaster previous to sowing.

A. English farmers do not mix anything with it. They break it up fine and sow it broadcast, *harrowing it in*. They sow it on wheat in the fall, on clover, turneps, potatoes, mangel wurtzel, and, in fact on almost all their crops. From 200 lbs. to 400 lbs. per acre is the usual quantity. I have seen at least a difference of ten bushels of wheat per acre on land guanoed and unguanoed. It is a most powerful fertilizer, but I think the price is too high for us to use it in Western New York.

B. They use large quantities of it in Virginia, Maryland, Delaware and other Atlantic States. It is stated to have a miraculous effect on their worn out soils, enabling the farmer to grow good crops of clover, wheat, and corn, where before white beans would die of actual starvation. I see, too, from the last number of the *Genesee Farmer*, a gentleman near Rochester got an *increase* of ninety bushels of potatoes per acre from applying 300 lbs. of guano, at a cost of \$10 per acre.

A. The greatest benefit I ever saw from applying manure was in Norfolk, on ruta bagas. On part of the field 400 lbs. of superphosphate of lime was sown, and on this part there was at least 1000 bu. per acre; while on the part not dressed with it, there was not a hundred. They usually drill the manure with the seed, and in places where the drill had clogged and not sown any of the manure, the turneps were not quarter so good. I observed this in very many cases. The farmers who have used it, all say that it is the greatest manure in the world for turneps, and immense quantities are annually sold. It is now manufactured in New York, and I intend to try some of it for ruta bagas next summer. They charge more for it in New York than they do in England, but it may be of a superior quality.

B. What is it made from, and does it do as much good for wheat, corn, and potatoes, as for turneps?

A. In England it is made from what is called coprolites, or brown stones that look just like gravel. They are ground by machinery to a fine powder and treated with sulphuric acid, which makes the valuable portion of them soluble, and therefore directly available for the plant. Some farmers make the article themselves from ground bones, and it is said that made from bones is much the best. As regards its value as a manure for wheat, I took considerable pains to inquire on that point, and from all I could learn, it has never been known to do much good on either wheat or barley. One thing is certain,—and it is a significant fact,—it is never used as a manure for wheat, and is not recommended for that purpose by the manufacturers.

B. I can, from your account of English farming, easily understand the cause of their superior agriculture. The winters are not anything like so severe as ours, so that they can winter their sheep out of doors, and by growing so many turneps keep a vast number of them; and with the use of oil-cake, guano, and this stone, bone, or what manure it is,—superphosphate?—they certainly ought to raise large crops. Besides, too, they don't pay half so much to their hired help as we do, and money is not worth more than half as much as with us; so that it pays better to invest money in improvements there than it would here. But from what you say, many parts of England are most wretchedly farmed, and an industrious, wide awake Yankee would make great improvements and do well there.

A. I think many of the farmers pay as much for a given amount of labor as we do. It is true we give double wages per day, but a smart, well fed Yankee will do as much again work in a day as some of these English laborers who live on nothing but beer.

B. I suppose they do drink prodigiously. I have an Englishman working for me that has just come over, and he complains most bitterly that we have no beer; and he is so home sick, or love sick, or work sick, or beer sick, that I believe he would go back again if he could get money enough.

A. Before I went to Europe I was much puzzled to account for the apparent discontent and disappointment of English laborers with our institutions; but I can now readily understand how it is. As I have said, in England they do not work so hard, or so many hours, as we do here; in the summer months they have long evening twilights; it is light and delightfully pleasant for three or four hours after the sun has gone down. They quit work at six o'clock and spend the evening in some kind of sport or games, and appear as happy as the day is long. They think America is a perfect paradise, where people live without work, and have as much beer, and beef, and butter, and brandy, as they want, for little or nothing. When they come here they are of course disappointed; they find, as they express it, "nothing but work, work, work, from daylight to dark, with nothing to drink but water and tea, and nothing to eat but pork, pork, pork, three times a day." It is true they obtain much better wages, and if they are steady, saving, and industrious, they can improve their condition and secure a competence for themselves and a good education for their children, neither of which they can get in England. But I verily believe that if the English laborers thought that American farmers did not allow their help beer, they would give us a wide berth.

B. I recollect that HORACE GREELEY, in one of his letters from England, says that though every one drinks, ladies and ministers, saints and sinners, high and low, rich and poor, there was not any more real drunkenness than with us.

A. It is a pretty difficult matter to tell what is understood by drunkenness. Some think that so long as they can manage to stand and speak at all, they are quite sober; others, when they see two candles burning in the same stick, are only comfortable. If a man must be wallowing in the gutter before he can be pronounced drunk, I will admit there is no more of such drunkenness there than with us; for as every one drinks regularly and habitually it is not a little that will upset them, for they are "mighty to drink strong drink." In many parts of England the common allowance to the men during harvest time, is six quarts of strong beer per day, and one farmer told me he had known his men to drink *nine quarts per day*, when allowed as much as they liked. Fancy! Quite as much barley is grown in the country as wheat, and nearly all of it is made into beer and "drank on the premises."

B. Did you see McCORMICK's or HUSSEY's Reaping Machines at any of the trials in England. I suppose John Bull begins to see that we Yankees are some pumpkins; certainly the papers do not speak of Brother Jonathan in such a supercilious, contemptuous manner now as they did a few years ago.

A. I was at two of the trials, and I wish you could have seen the sturdy, red-faced, self-satisfied

looking farmers, with a "you don't fool me" expression of countenance, before the machine was put in motion; but the moment they saw that the machine would not only work, but cut the grain better than it could be done by hand, the expression of "humbug" gave place to one of enthusiastic admiration and surprise, and they gave three spontaneous hurrahs, such as none but John Bull can give.

B. I understand John Bull wishes to claim the Reaper as his invention, *improved a little* by Bro. Jonathan.

A. Some of the papers have taken that view of the subject, but the great mass of the people believe no such a tissue of nonsense. They know that a Reaper had not been used or heard of in England till this "cross between an Ashley's chariot, a flying machine, and a tread-mill," was sent to the World's Fair, and that this American Reaper has cut the grain better than it could be done in any other way.

B. I will come and have another talk in a few days.

THE STRUCTURAL FORMATION OF VARIOUS BREEDS OF CATTLE.

(CONDENSED FROM THE NORTH BRITISH AGRICULTURIST.)

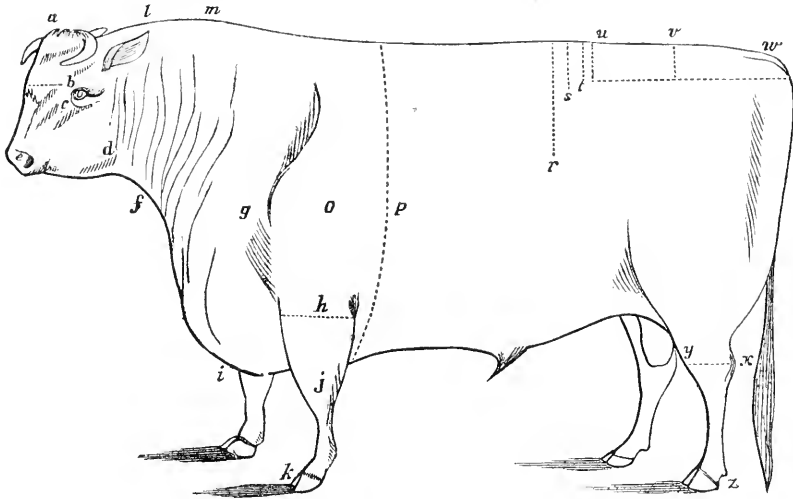
THE anatomical structure of an animal for the purposes of secreting milk, fat and flesh, is necessarily somewhat different from the structure of an animal whose energy is expended on motion or draught. As yet there is little known in the animal economy of the processes of gestation, development and progressive growth. These are in part dependent upon organs, fluids, and other agencies, among which electricity is believed to exercise a considerable influence. The mutual relations, and the peculiar definite power of the individual agencies, are, however, almost wholly unknown. Observation and experience have, indeed given some definite information, which science has in some points confirmed. By them, the practical man has been taught that certain peculiarities of structure are connected with certain results, and his knowledge of these regulates his method of breeding, rearing, and feeding animals. The somewhat wedged-shape cow indicates a high power of secreting the lactic fluid, while the parallelogram-shaped animal, that of secreting fat and flesh. Indications such as these, even apart from any scientific explanation, are now every day made practically useful, and in the following article we will point out as many of these indications as popular opinion, or the judgment of the best breeders confirms, occasionally introducing explanations which go to establish the popular belief.

The first breed we will consider is the Short-horn, which stands confessedly first, as an early maturing and flesh-producing animal. As most of our readers are aware, the Short-horn is a cross, and not a pure bred animal, such as the West Highlander. It is principally to CHARLES COLLINGS that the Short-horns owe their fame; he having introduced the Galloway blood with a red heifer, which was employed to give greater compactness of form to the then known Teeswater or Short-horn, and the descendants of this Galloway heifer were in a short time duly appreciated, and became the improvers of COLLINGS' most celebrated stock. One cow, Lady, at fourteen years old, sold for \$1,030, and her daughter Countess, nine years old, for \$2,016. Comet, a bull, sold for \$5,040. Mr. COLLINGS' stock of forty-seven in number, realized \$34,152.

We will first consider the distinguishing qualities of the male; and we again wish strongly to impress upon our readers the indispensable importance of the muscular power being fully developed in the male of the ox, as well as of the horse. However apparently perfect in form the male is, if he shows somewhat the points of an ox, he should be rejected, as vigor of constitution and muscularity of form are always conjoined. It is a fact worthy of the serious consideration of all breeders of high bred stock, that there has scarcely ever been a Short-horn breeder who has been equally successful as a breeder of males and a breeder of females; and that the successful bulls at Exhibitions are generally of a different blood from those animals which are successful as prize takers in the classes of cows and heifers. There is another fact connected with breeding, that few breeders long maintain their position, there being some causes, not well understood in operation, against a high state of excellence being long perpetuated, and that the introduction of new blood into a herd appears always to have a most marked influence on the conformation of the produce.

There has been much controversy on the question of breeding *in-and-in*. The necessity for the introduction of new blood, *well selected, from a good stock*, is, we think, now pretty fully established. It is somewhat remarkable, that many of the most vigorous animals which have perpetuated their distinguishing points on their progeny, and stamped their general appearance so that good observers at once recognize the descent, had not full pedigrees. We

give as a striking illustration, Sir THOMAS FAIRFAX. The pedigree of the dam of this celebrated bull was defective. There are almost always to be observed in a well selected stock, distinguishing features, so that judges can at once determine from what blood they are descended.



SHORT-HORNED BULL.

In giving a description of the points which should distinguish the structural formation of the Short-horn, we will take the aged bull, namely, three, or above three years old, giving the appearance when viewed in different positions.

Viewed from behind, there should be a breadth of carcass, a levelness and squareness above, and along the quarters and back. The ribs should appear to be in nearly a straight line with the shoulders and hind quarters; the thighs or *twist* should descend in nearly a straight line; the muscles of the thighs should be fully developed in the inside, the thighs being united to one another well down towards the hocks. The hocks should be broadly formed, straight and large, and the legs straight and delicately formed beneath the hock. The whole appearance should give a general symmetry to the frame of the animal.

Viewed sideways, the animal should appear moderately long, height and size corresponding. The head should be rather low set, upon a strong, broad, deep, and muscular neck. The head long, and tapering towards the muzzle, the forehead broad between the eyes, line *b*, with the bones for the sockets raised, giving a concave appearance between the eyes. The eyes should be large, lustrous, and prominent, pressed outward, with the fatty bed below. This is, in all animals, a certain index of facility of secreting fat. The skin around the eye and muzzle should be of a delicate orange tinge; the nostrils wide; the jaws moderately clean; the ears long, well set, near the crown of the head, and covered with silky hair in the inside. The horn should be short, not too thick, somewhat smooth, rather pointed, and the color white or slightly tinged with brown, corresponding to the color of the skin. The throat should be clean, with the skin loose down towards the brisket. The muscles along the neck should be raised and strongly developed. If so, the muscles along the back, loins, and down the whole extremities will almost invariably be correspondingly developed. The shoulder blades should be short, covered with muscles, the top of the shoulders broad; and there should be little or no perceptible hollow or depression behind them. This point is very often faulty in the Short-horn. The ribs should be well arched from the spine, and appear to be wide apart from one another. Towards the hookbone the bony frame should be wide, and the parts well clothed with flesh, and straight along to the top of the setting on of the tail. Across the loins there should be an indentation over the spine, the hookbones moderately developed, and the space marked between the last rib and the hookbone should be short. Behind the hookbone and towards the tail (the quarters), the muscles should be well raised, embedded in fatty cellular texture, and thus feel soft, and elastic to the touch. The breadth between the hocks, (hips,) line *t*, should correspond to the length between the points of the hock and the point of the fat and fleshy rump *t*, towards rump. In a full sized bull this will be about 2 ft. 2 in. to 2 ft. 6 in. The tail should be gracefully set on, small towards the point

and somewhat long. The chest should be deep, wide, and circular; the ribs forming a circular cone. The brisket should descend towards the knees, and protuberate before the forelegs. The skin of the brisket loose and flexible. The forelegs should be broad and muscular above the knee, line *h*. Before the point of the shoulder, *g*, there should be a deposit of fat palpable to the feel. The shoulder blades should feel to the touch as if covered with soft cellular muscles. Over the ribs the same soft elastic touch should be felt. One of the chief points of excellence in the male is, that there should be nowhere any patches of flesh or fat, but that the whole frame should be evenly clothed with flesh, presenting to the touch a soft oily feel beneath the skin. The skin should be elastic, soft, pliable, and velvety to the touch, not too thin. When touched the resistance should be so delicate as to give pleasure to a sensitive hand, yielding to the fingers. It should feel loose along the ribs, and particularly on the neck, shoulder-blades, &c. The hair is also of the greatest importance—it should be close, mossy, and furry. Single hairs should present to the eye not the ordinary straight line of hairs, but something of the curl of long wool, without being absolutely curled. The waving of the coat should also be delicately marked. The length of hair is dependent upon the season, condition, and the manner in which the animal has been housed.

Color we do not deem of great importance, provided it is not black, or has not a black or blue tinge. Some object to those colored red and white, when the patches of red or white are large. A still better grounded objection is to those having small indistinct spots of mixed hair about the size of a shilling to half-a-crown, along both sides of the spine. These are generally understood not to be kindly feeders. But colors of deep red, dark roan, or delicate roan, strawberry-spotted, cream color, or white, are all good. White is regarded by many, as an indication of delicacy of constitution; the very opposite we believe to be the fact. If a white color is an index of delicacy of constitution, how is it to be explained that animals exposed to cold, such as in the arctic regions, are generally white; and what is equally remarkable, that in the interior of Africa the domesticated ox is generally white, while the sheep are almost always spotted with brown or black spots?

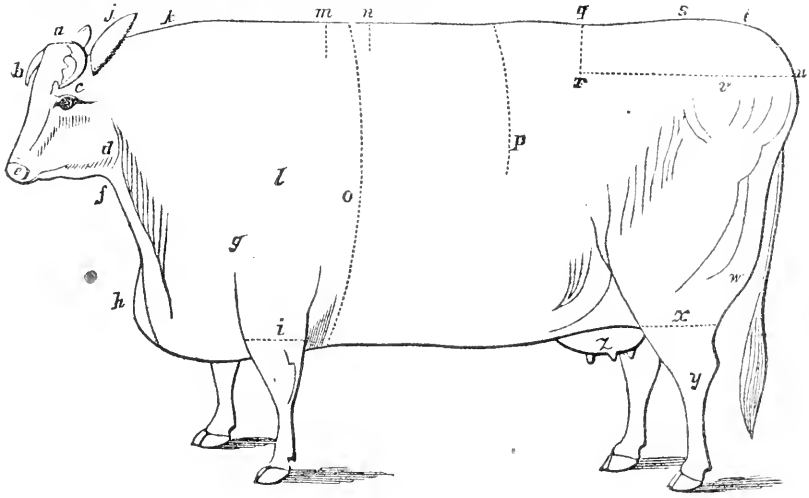
Viewed in front, the animal should present the same level appearance, with brisket deep and well forward. The point behind the shoulder can be here well observed, and there should be little or no falling off on this point. The feet should be circular, with the hoof strong and upright. Good hoofs are of great importance for cattle travelling. The animal, when walking, should have a somewhat gay, elastic step.

Before determining which is the best animal, both sides should be examined, as it is not uncommon, in some breeds, particularly the highly pampered Short-horn, to find one side more delicate to the touch and better clothed with fat than the other side. We have heard various reasons assigned for this somewhat strange anomaly. The most common is, that if the animal gets the habit of lying always on one side, that side will be more clothed with fat. We believe, however, that it is chiefly owing to a defect in the structural formation, possibly in the nervous system. But whatever is the cause, we look upon it as a very serious objection in all animals for breeding.

The following is a scale of points in the bull:—

1. Pedigree on the female side.
2. Pedigree on the male side.
3. Eye large, clear, and prominent.
4. Muscles of the neck full arched, but without being coarse or heavy.
5. Chest deep and circular.
6. Barrel well arched from the point of the short ribs; circular, and rather light at the flank.
7. Touch—skin soft, velvety, and moderately thin, yielding to the touch.
8. Hair thick, soft, silky to the touch, and twisted.
9. Back straight from point of the shoulders to the setting on of the tail.
10. Point behind the shoulder, *g*, full and level with the shoulder.
11. The whole surface of the bony structure of the body evenly clothed with cellular muscle and fat.
12. Hooks broad, level, and well clothed with muscles and fat.
13. Head fine and tapering; cheek moderately clothed with flesh.
14. Forehead broad and concave.
15. Muzzle fine; color, orange tint.
16. Throat clean, with the skin loose down towards the brisket.
17. Brisket full, well forward, and deep.
18. The shoulders not coarse, but clothed with soft cellular flesh.
19. Hooks large and clean, with flesh descending down near to the joint—legs below the hock, clean and delicately formed.
20. Well-ribbed home.

21. Legs somewhat short and squarely placed.
22. Fore-legs above the knee-joint broad, with swelling muscles, and fine below the knees.
23. Color distinct, rich without a shade of blue or black.
24. Horns moderate in size, not thick at the roots, soft-looking, grisky, *i. e.*, not polished looking.
25. Hoofs round, and moderate in size.
26. General appearance gay, and docile looking.



SHORT-HORNED COW.

The cow and heifer should present a somewhat different form from that of the bull, being more feminine and less robust in the development of the joints and muscles. In the females of all animals, there is a greater tendency to deposit fatty matter between the muscles, and also more immediately under the skin—this gives a greater roundness and compactness of form. The pelvis and hind quarters should be more fully developed than in the male, and the point called the stifle joint should be more out to allow room for the development of the fœtus. The cow, unlike the bull, should stand rather higher behind than before; and should also present a more rounded and broader appearance, particularly behind the chest, than the bull. It is important to observe that the cow is properly formed here, as there is no other animal, with the exception, perhaps, of the human species, with which there are more casualties during the progress of gestation and parturition; abortion being the most common, and the most serious of all the accidents that animal is subject to, as a breeding animal.

The power of secreting milk, and also of laying on fat and flesh, is dependant, to a considerable degree, on the development of the vascular system, and the common way of examining a milk cow by feeling what is termed the milk veins, *viz.*, those which pass along the belly before the udder, is a certain sign of this. The udder should be handsome, large, well formed on the belly; the teats evenly placed, and moderate in size; but as the property of giving milk is not one for which the Short-horn is esteemed, the udder should not be overlarge, as it requires to be in the Ayrshire, or other dairy breeds. The tail should be rather longer than in the male, and tapering towards the point. The eye should be large, soft, and expressive of docility. The head should be fine, tapering towards the muzzle, and the neck should be less muscular than in the male. The horn smaller and more turned in or upward than in the bull. The cow should present a more deep, rounded, and punchy form than the male. The parts termed points should be more distinctly marked than in the male. The point of the hook bone should be raised, and present to the eye an openness in the bony structure. On each side of the tail, flank, and point before the shoulder, there should be deposits of fatty matter, corresponding to the state of condition in which the animal is at the time. Also the fat on the short ribs, and along the back, should be somewhat less uniform and more in patches than in the male. This grand distinction, which we have already alluded to, of the fat, in the female being more on the surface than in the male, is apparently not well understood by judges, as it is not uncommon to see a cow placed first, with some of the points which should distinguish the male; and, again, the bull well forward in the list with some of the points which should

characterize the cow or stot. Another distinction we deem of the greatest importance, viz., that the bull should have all the masculineness which belongs to his sex, while the cow and heifer should have all the feminineness of the female, and none of the peculiar or masculine appearance of the bull.

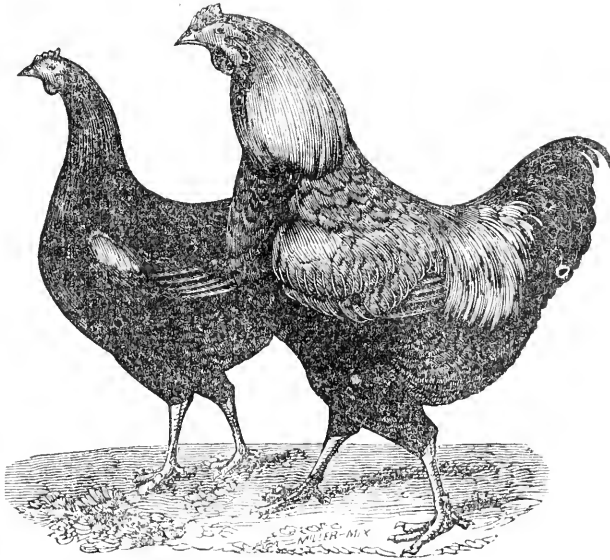
The preceding outline of a three year old Short-horn cow gives a fair representation of one made up for exhibition. The points are marked nearly the same as in the bull. The point *p* is one of greater importance in the cow and heifer than in the bull. The distance between the hooks *r*, *q*, should correspond to the distance *r*, *u*—this will vary from 2 ft. to 2 ft. 8 in. The breadth between the forelegs, with the swelling out of the brisket, are fully brought out in the cut—this, with the depth, width, and roominess of the hind-quarters, is essential with perfection of the cow.

The following are the points of perfection arranged in the order we consider the most essential. In the cow we reverse the order of the pedigree with that of the bull, placing the pedigree of the bull first, as we think we are justified, from close and studied observation, in believing that the produce of the female partakes more of the qualities of her sire than of the female, or the sire or dam of the male; that is, the produce of a female will be more like the sire of that female, than either the dam or sire of the male, or the parents themselves. Even, independently of this, the influence of the dam on the character of the progeny we hold to be greater than that of the sire; this being, however, subject to certain influences, upon which we cannot enter at present.

1. Pedigree on male side.
2. Pedigree on the female side.
3. Eye full, placid, and intelligent looking.
4. Head fine, tapering towards the muzzle; nostrils large, with the orange tint round the muzzle and eyes, and in the inside of the ears.
5. Touch soft, elastic, yielding to the touch as if the skin covered a fatty fluid between the muscles and skin.
6. Chest deep, well arched, and circular.
7. Hooks broad, raised, and open-looking at the points.
8. Quarters long, wide, and fully developed down towards the stifle and hock joints.
9. Neck well set, straight, somewhat long, fine, without any appearance of coarseness.
10. Cheek small and clean.
11. Throat clean and well developed.
12. The points of the bone projections more or less covered with fatty matter, corresponding to the state of the condition of the animal.
13. Back broad, straight from the top of the neck to the setting on of the tail, and the tail at right angles to the back.
14. Shoulders short, light, and clothed with muscles and fat, the shoulders widely set at the points.
15. Point *n*, behind the shoulders, full, and in line with the shoulders and back. If so, the whole back will be correspondingly clothed with flesh.
16. Barrel hooped, arched and moderately deep in the cow, rather light in the heifer.
17. Well-ribbed home, space moderate between the last rib and hock.
18. Hair thick, furry, fine and silky.
19. Udder, in the cow, moderate in size. In a line with the belly, and well up behind. Teats medium size and properly placed. In the heifer the udder loose behind, and developed before, corresponding to condition.
20. Legs squarely placed, with full knee and hock joints broad and muscular above, and moderately broad below the hocks and knees.
21. Horns smooth, not too thick at the base, white or tipped with light brown, corresponding to color of the skin.
22. Ears moderately long, oval shaped, clothed with silky hair in the inside.
23. Color rich, dark or light roan, white and red, or white. Dark small spots on a white skin is particularly objectionable, especially when the hair is white and the spots dark.
24. Tail well set on, thin towards the point, long, down to near the hock joints.
25. Feet sound, moderate in size, and round in shape.
26. General appearance lively, gay, docile, and *stylish* looking.
27. Growth moderate. In young animals if over-large, there will be tendency to coarseness. We have endeavored to be as distinct and minute as space would permit in the description of the properties of the Short-horns. Those who, with the aid of the cuts, may find difficulty in fully understanding the description given, would be greatly assisted by going over the points with a live animal, even of any breed—if a high bred Short-horn, of course more of the points will be observed.

Condensed Correspondence.

THE HONG KONG FOWL.—The originals of this splendid variety of fowls were brought from the port of Hong Kong, in China, by Capt. FULLER, of the ship *Vancouver*.



The accompanying engraving is a true likeness of the pair I have been breeding from the present season. Their color is buff and red, interspersed with blue and black feathers. The chickens generally have smooth and dark colored legs and black bills, and have proved themselves to be the descendants of a hardy and thrifty race. Dr. BENNETT, of Great Falls, N. H., the most extensive fowl fancier in the United States—having thirty varieties of gallinaceous fowls—says they are the “Mandarin Fowl of China,” and “are, all things considered, the best fowl in America.” In a letter from him, of November 22d, 1851, he calls them “splendid Hong Kongs,” and says “they are prime ones, and no mistake.”

Dr. EBEN WIGHT says, in a letter to me, of January 22d, 1852, “I think them one of the very best varieties which have come out from China, both as sizeable and laying fowls.” The hen has proved herself worthy of this high commendation. Since I have owned her she has laid almost daily, and continued to lay daily while rearing her chickens. In a letter to me from A. WHITE, Esq., of East Randolph, Mass., a careful and scientific fowl breeder, after having thoroughly tested the merits of this variety, says: “They are prime layers. As to their setting qualities, they can’t be beat when they get started.” They are large, compact, and symmetrical in form. I think they possess the good qualities of many breeds of fowl combined. SAMUEL McINTOSH.—*Canoga, N. Y.*

LEACHED ASHES AS A MANURE.—Three years since I purchased a farm on which had accumulated a large quantity of old leached ashes that were considered by the former owner of no value. They lay in an exposed, slovenly manner, and by no means increased the good appearance or value of the property. Wishing to ascertain whether they were of any value, I drew several wagon loads and spread them on a light, sandy lot I was fallowing for wheat. I could not say how much I put per acre, but should think about 300 bushels, spreading them in a breadth about two rods wide, the length of the field and right across the lands.

Now for the result. The wheat on the whole field was about an average crop, yielding 20 bu. per acre. On the breadth where the ashes were spread, the wheat all through the fall and summer was much stronger and of a darker green color than on the rest of the field, and at harvest the straw was at least four inches higher, and several good judges who saw it agreed with me in thinking that the yield on the ashed part was 28 bu. per acre, or about 8 bu. per acre better than where no ashes were applied. I seeded down the land with clover and timothy, and the effect of the ashes on the clover was equally striking and beneficial as it was on the preceding wheat crop.

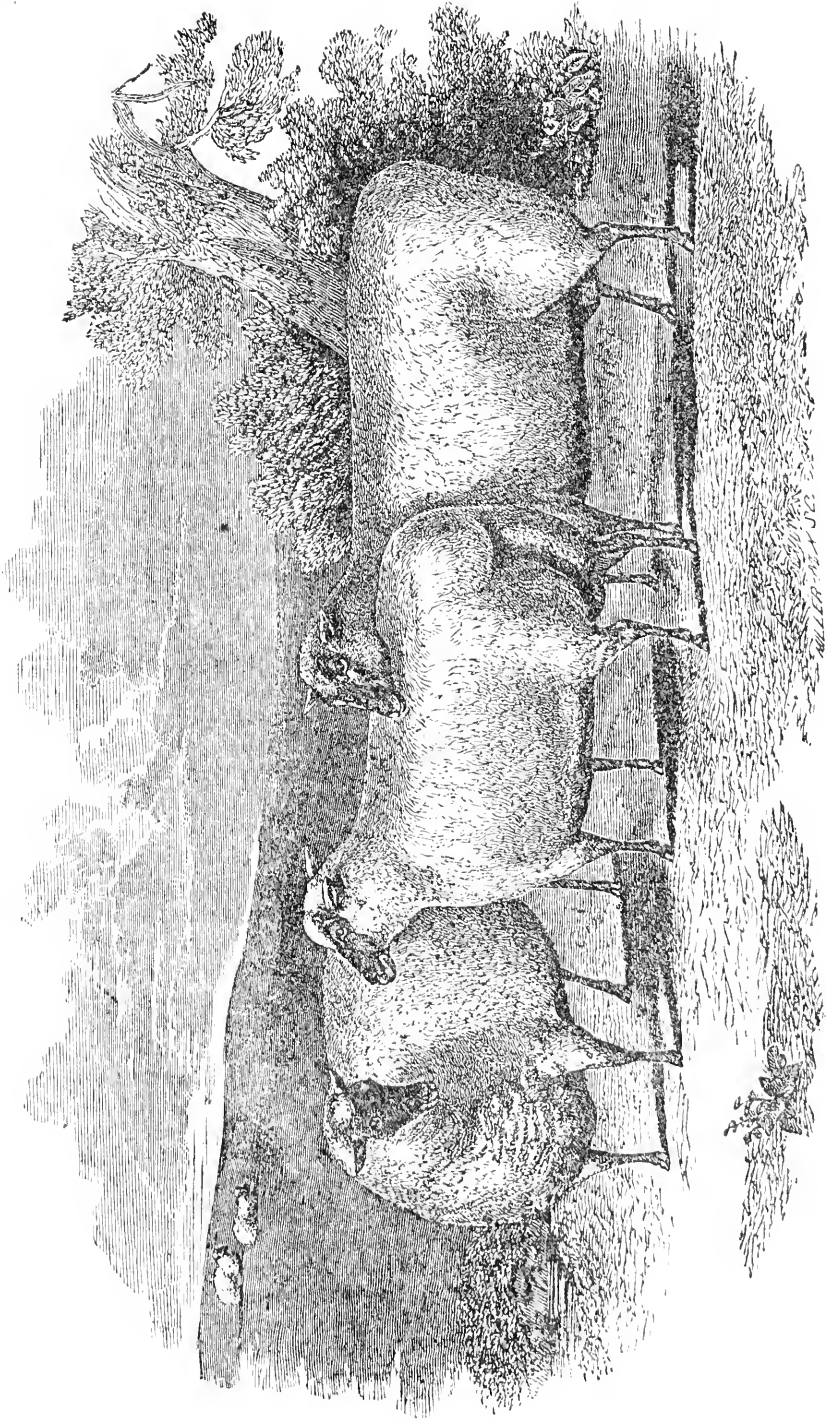
In the fall of 1851 I spread a quantity of the same ashes on another lot I was preparing for wheat. The soil was a heavy clayey loam, and yields good crops of wheat when well summer fallowed. I could see very little benefit from the ashes. J. D.—*Pendleton, N. Y.*

SOUTH DOWN SHEEP.

It is a fact well worthy of our serious consideration, that while our agricultural implements and labor-saving machines, and, indeed, everything connected with the *mechanical* objects of agriculture, for lightness, simplicity, efficacy, and adaptedness for the purposes intended, are very far superior to the most advanced nations of the old world; our domestic animals, as a general thing, are very inferior, and will not bear comparison with those of nations less advanced in other matters than ourselves. The reason of this is probably to be found in the peculiar circumstances in which we are, or at least have been placed. Ours is a new country. We have had primeval forests to subjugate, crops to raise, cities to build, canals to dig, railroads to construct, and all the appurtenances of civilized life, to be raised from crude elements, *in just no time*. It was to be expected that ingenuity thus taxed would enable our mechanics—in devising and constructing machines that should accomplish the various objects in the most economic and expeditious manner—to excel all others; but the reverse of this is true in regard to the rearing and management of domestic animals. Our restless, enterprising, unfix'd, and changing habits, are ill-calculated to enable us to excel in this important branch of agriculture, in which time and long continued persevering attention to the principles of breeding can alone accomplish any great improvement, and we cannot but think it is wise in our agricultural societies (although considerable objection has been raised against the custom) to appropriate a larger sum for prizes to be awarded to improved animals than for agricultural implements and machines, and to do all in their power to advance this too much neglected branch of domestic economy.

We hope none of our readers will suspect us of thinking that the only valuable and profitable breeds are the so called improved imported animals, for we do not. Those who have read our article on “the improvement of our common sheep,” in the October number of the last volume, will see that we place our principal hope on the increased care and attention which our farmers will bestow on their common native *acclimated* flocks and herds, in accordance with correct principles of breeding, and not to the importation of improved foreign breeds. But though this is our opinion, we believe it cannot but interest our readers to have an occasional chapter on the various improved breeds, accompanied with engravings of such as are considered the best specimens of their respective kind.

The cut on the following page represents three beautiful specimens of South Down sheep, and affords a good illustration of what man can accomplish by judicious management and long continued attention in moulding the plastic elements of animal nature into a form more agreeable to his object, and to the artificial requirements of society. It may be owing to the fact that we have had more to do with this breed than any other breed of *mutton* sheep, that we hold it in such high estimation; thinking that for this climate, and in situations where fine, high flavored mutton meets with that appreciation which it undoubtedly deserves, the South Down is, of all the various breeds of sheep, the best. We are aware that it is not so large as the Lincoln, Cotswold, Leicester, &c., &c., and that it will not, in all probability, increase so rapidly, and lay on as much fat for a given amount of food, as these large breeds; yet the mutton is so decidedly superior, the wool is shorter, more compact, and heavier, enabling the sheep to stand cold and wet weather, and an occasional scarcity of food, that for this climate, at least, they are preferable to the large breeds, which require rich alluvial meadows, and an abundant supply of food without having to walk much in search of it. In such situations, and where *long* wool and tallow, rather than superior mutton, is in demand, the Cotswold and Leicester are doubtless the best breeds for the farmer to keep. Again, where fine wool is required, and mutton and tallow is of little value, the Spanish and French Merinos will be found the most profitable.



SOUTH DOWN SHEEP,

OWNED BY WM. HIGDEN, OF HOVE, NEAR BRIGHTON, FOR WHICH THE FIRST PRIZE OF \$100 AND SILVER MEDAL WERE AWARDED AT THE SMITHFIELD CUTE CATTLE SHOW.



J. FRASER ELMHURST, N.Y.

FRANK WALSH, S.C.

A SOW AND PIGS OF THE LARGE BREED,
OWNED BY JOSEPH TULEY, YORKSHIRE, ENGLAND, FOR WHICH THE FIRST PRIZE OF \$50 WAS AWARDED AT THE ROYAL AG. SOCIETY'S MEETING, AT YORK.

HOGS.—LARGE AND SMALL BREED.

IN the December number of the *Farmer* we gave a portrait of three beautiful specimens of a small breed of pigs, as exhibited at the Smithfield Club Cattle Show. On the preceding page will be found a good representation of a breeding sow of a large breed. A better specimen of the improved Yorkshire and Leicestershire breed could not be given. The only fault we find with the sow is, she is much too fat for breeding purposes; for, while we think that many breeding sows are kept too thin—being in many instances half starved when they require the most nourishment—there is such a thing as having a breeding sow, as well as all other breeding animals, much too fat.

We are often asked which breed of hogs we think best adapted to our climate, circumstances and requirements. In answer we would say, it is impossible in the present deficient state of our knowledge on this subject, satisfactorily to decide. We do not know which of the various breeds produce the most pork, and the least offal and bone, for a given amount of food: and even if we did, we could not then decide which would be the most economical or profitable breed; for it is not the absolute, but the circumstantial value determined by taste, fashion, and demand, that makes this or that kind of pork and pigs most sought for. Where bacon and large hams, rather than pork, are required, the large breeds will be the most profitable. In the neighborhood of our Atlantic cities, where *fresh* pork is in demand, the small breeds will doubtless be the best; as small, delicate, fine flavored pork commands high prices.

In improving our present heterogenous acclimated breeds of pigs, all that is necessary is judicious selection of sows to cross with some old established valuable breed having the particular qualities desired strongly developed. If it is desired to reduce the size of a common breed, and at the same time to increase its early maturity and disposition to lay on fat, with a small proportion of offal and bone, there is no better breed, in our opinion, than the Chinese. The valuable characteristics of this celebrated breed—early maturity, rapidity of fattening, delicacy of flesh, fineness of bone, heavy hams, broad shoulders, and deep, well rounded sides—have been long and permanently fixed; so that they are the more surely impressed on the progeny than would be the case were the breed of a more recent origin. The improved English small breeds have all more or less of Chinese blood in them, and owe their best points to this and other judicious crosses. Pure blooded Chinese hogs would probably be too tender and delicate in constitution to stand the rigor of our northern winters, but their crosses with our acclimated breeds are hardy; and it is better for us to make a good breed in this way, than to import from England a breed which has been so produced there, and which, however good they may be for that climate, do not, as we are informed, give very good satisfaction here. This is the case with the Berkshire. A better breed, where neither a very large or small hog is required, does not exist in Great Britain. Here, however, it is by no means a general favorite. The same rules will apply to the improvement of our large breeds. Get, if possible, a boar of one of the long established improved breeds, such as the Leicester, Lincoln, Sussex, or Yorkshire, and place him with carefully and judiciously selected sows of the breed to be improved. The fecundity of pigs gives the breeder a greater facility in improving his breed of hogs, than he possesses with any other large domestic animals; hence nothing is easier than to improve any of our breeds, and also in a short time to extend the improvement from Maine to Georgia. Our common hogs in this neighborhood are a miserable, long-legged, slab-sided, lop-eared, bristly race, affording abundant room for improvement. We recently saw a train of hogs passing down the N. Y. & Erie Railroad, that were much superior to anything, as a whole, we have before seen. They appeared to be a cross between the Berkshire and grass breeds, and came from Ohio.

Horticultural Department.

CONDUCTED BY P. BARRY.

THE AILANTUS, OR "TREE OF HEAVEN."

WE well remember, some fourteen or fifteen years ago, the *Ailantus mania* in New York city. Hundreds of well grown, stately horse-chestnuts, lindens, and other good old fashioned trees of that sort, were torn from the sidewalks in the "up town" districts, in the most unceremonious manner. No backwoodsman was ever more merciless than were those New Yorkers. These trees had been carefully planted, nursed, and watched through their tender youth, until they had arrived at ample, elegant, shady tree-hood. They had converted the arid pavements into refreshing and pleasant avenues, and their wide-spread heads had thrown cooling shadows on the walls and windows and porches of those New Yorkers' dwellings, rendering a summer life in town far less execrating than it had been. Rents were raised in consequence of the increased comfort, and the fashionable, suburban air which these trees imparted, and often was it said, "What a *paradise* we have here now with these beautiful trees!" But, alas! human admiration and human friendship are sadly fickle. These trees offended—offended *grievously*—and that, too, in the very prime of their beauty and usefulness, when all eyes were upon them, and their praises, like rhapsodies, upon every lip. It is all at once discovered that they harbor insects. A lady has been startled with a caterpillar in her drawing-room; another lady has been very much annoyed with similar visitors; and a third has been tormented daily with perfect showers and swarms of insects of various kinds, blown into the open windows upon her elegant furniture. The newspapers take up the subject, and the insect story is told, and re-told, until it becomes so aggravated that one's flesh crawls to read it, and the whole race of trees that occupied the sidewalks are unanimously pronounced a *nuisance*. The shade and beauty which they imparted, were all forgotten in the general, and we might almost say foolish, outcry about *insects*. So go people to extremes.

Just at that period, the *Ailantus* was *growing* into notice. It was represented as being from China, of exceedingly rapid growth, with smooth, erect trunk, and long, feathered foliage; indeed, every way so noble as to be styled "The Tree of Heaven." Its great recommendation, however, just at that time, was its complete exemption from insects of any and every kind. Well, the *Ailantus*, as every body knows, is not a slow grower, and it was not long until it had reached the top of fame's ladder. Every one who inquired about street trees, was told of "the magnificent *Ailantus*;" "it out-grows everything, making eight or ten feet in a year; its leaves are four or five feet long, and it has noble spreading branches; but, above all, no insect will come near it." "Good! that is just the tree for streets," and so one street after another, old streets and new ones, were planted with *Ailantus*, until "up town" had become completely orientalized with this famous tree of the Gods, ("*Gotterbaum*,") as the Germans called it. So popular did it become, that people were not satisfied to have it merely in the streets and public promenades, as at first recommended, but it must be in the *garden*, in the *door-yard*, in fact everywhere. The nurserymen exerted all proper industry in propagating it; seeds were imported by the hundred weight; suckers were saved; and in a dozen years or so the country was pretty well supplied. It had become decidedly *common*. The *Ailantus* had had its day—poor, doomed *Ailantus*! With all your good qualities, you must become an outcast, and the same voices that in former days were wont to speak your praises, must now cry "down with you." Poor *Ailantus*! But the *Ailantus* need not complain; it is the way of the world.

A year or two ago somebody who had had an Ailantus closer to their dwelling than it ought to be—perhaps the branches intruding into the chamber window—and whose olfactories were quite sensitive, discovered that the blossoms emitted a disagreeable and sickening odor. The fact was instantly communicated to the neighbors; every body held up their heads and snuffed at the Ailantus, and sure enough they were found to emit a most disagreeable odor. The newspapers took it up, (as they take up everything calculated to produce excitement,) and so the Ailantus is written and talked into an unendurably bad odor amongst the refined portions of the community, until latterly the cry almost universal is “down with it.” Our national authorities at Washington feeling in duty bound, as the conservators and exemplars of taste, have pronounced and executed capital punishment on all the unfortunate Ailantus found in the capital grounds. Brave men! Long may you live!

Now this is a much more serious thing than it would at first sight appear to be. See how many streets and public places are every where planted with this tree. To cut them down or dig them up, what an inconvenience!—what a loss! And how dismantled those streets will look without them. We shall all be old, and perhaps dead and forgotten, before other trees can be brought to yield such shade, and produce such an effect as these do. We advise caution at any rate. In the streets they may be spared. If the flowers are really offensive, have them cut off before they open. A pair of shears attached to a pole will clear the largest tree of all its flowers in a few minutes. We should say down with them in door yards; they never had any business there. It is a fine tree for streets, and grand in its proper place in a landscape. Among all our trees we have none that resembles it. Our sumach is a mere shrub in comparison. Then its rapid growth, cleanly habits, and total exemption from insects, are great recommendations surely. We have never yet said much in its favor, nor shall we now join in the hue and cry against it. We regard it as a great acquisition to our hardy trees, one that in the hands of those who know where to put and how to use trees, may be turned to a great account. That people misuse a thing is no argument against it.

These remarks have been suggested by the reading of some proceedings had in regard to this tree, by the Cincinnati Horticultural Society, which we find in the September number of the *Western Horticultural Review*. We give the following extracts from the discussion, to show the various views, opinions, and tastes, on the subject.

“The discussion on the alleged poisonous qualities of the Ailantus, was opened by Mr. BUCHAMAN, who held in his hand a fine branch of the female variety, with numerous panicles of seeds, cut on the grounds of Mr. SROEDER. Mr. B. observed that he had been the first to introduce this tree to Cincinnati; he considered it a noble tree, and worthy of a place in ornamental grounds. It was, in the male variety, objectionable while in flower, on account of the smell of the pollen; and it had also the fault of throwing up suckers from the roots, which, in the country, would make it troublesome; he had never found it poisonous.

“Mr. ERNSR imported this tree early, like Mr. B., and had still the two parent trees growing luxuriantly on his grounds. He always considered it a beautiful tree in any situation, and eminently useful as a city shade tree, from its rapid, upright growth, exemption from insects, and entire hardness under every state of our climate and soil. During a long experience, he had never known any poisonous effects to proceed from it; and, without positive evidence that it was poisonous, he would never consent to discard it, merely to gratify some few sensitive noses during the short period of its flowering.

Mr. FOOTE said that he had, on one occasion, felt ill from having, during the evening, remained for some time under the Ailantus trees while in flower; and remarked that it occurred before the tree was talked of as having any deleterious properties.

“The President, Dr. MOSHER, said he considered the Ailantus unrivaled as an ornamental or shade tree. The rich green and luxuriant growth of its foliage, its erect stem and palm-like head, gave an oriental character to our scenery. It belonged to a family of plants, (Xanthoxylaceæ,) which were remarkable not for poisonous, but for tonic and other medicinal qualities. He had never known the least ill effects to proceed from the smell of its flowers, except the annoyance to the olfactories. He supposed, from analogy, that habit might make the smell agreeable to some noses. Its wood, seasoned, was said to be extremely hard, fine grained, and susceptible of a high polish. It may be found a valuable tree for cabinet-makers, etc., and may soon be profitably grown for fire-wood.

"MR. GRAHAM said he had lived much in proximity to those trees; considered the effluvia of the flowers so great an objection that he would not plant the tree in the city; it was so disagreeable to ladies that they avoided the street where it was planted, while it was in flower. We had other trees, such as the Paulownia, of equally rapid growth, and equal beauty, whose flowers were fragrant; why not plant such? He admired the promptitude of the authorities at Washington, in extirpating the Ailantus trees from that city.

"MR. HATCH thought it a very valuable tree for city planting, to those who could bear the odor. It would grow in situations where other trees would not.

"R. M. MOORE objected to the smell, and also to the manner in which the roots heave up the brick pavements.

"Somebody hinted that all other trees have the same effect on brick pavements.

"MR. HEAVER—after enumerating the various qualities which entitled the Ailantus to public favor—stated that he had Ailantus trees surrounding his residence for years; had never found them prejudicial to health; believed with Dr. MOSHER, that the smell of the flowers, although unpleasant, was rather beneficial to health than otherwise, as all his family and laborers could prove by their appetites during the time of flowering. He recommended the female Ailantus to those who objected to the smell of the male, but would on no account condemn the Ailantus, as the smell was a very temporary evil at most.

"MR. KELLY called attention to the now well-ascertained knowledge among scientific men, that the idea of poisonous effluvia proceeding from the Upas and other trees was a delusion. He had himself grown the Upas tree in a hot-house, and never supposed it capable of injury except through the absorption of its juices; had never known any poison to exist in the sap or flowers of the Ailantus; had grown thousands of them; it never poisoned the hands of any of those who worked amongst it; believed it harmless; found the female, to a great extent, destitute of smell, but far inferior in grace and beauty to the male; believed it the best shade tree in the country; it created no dirt, as its leaves all fall at once after the first severe frost; said that few of the plants would sucker if grown from seed, and that if the fallen flowers were swept up and the trees shaken, the effects of the bad smell would not last more than ten days.

"MR. ANTHONY stated, as far as he was able to learn, the great objection to the Ailantus might be found in the odor of its flowers, which was so disagreeable to many persons, and that those who were willing to raise a crusade against the Ailantus did it with the same feeling, and upon the same principle, that they would present a petition to the council for the removal of those soap and candle factories in the north-western part of our city. For his part he was not partial to the smell of the tree, but that, in consideration of its beauty, its rapid growth, and its useful properties, the objection might be very easily overruled. And that it possesses poisonous qualities, has never yet been authentically proved.

"MR. BUCHANAN asserted that a single flower of great fragrance, as the Cape Jessamine, placed in a room, will sometimes produce a slight sickness of the stomach. He thought that there were many persons of such peculiarly delicate organizations that they would be disagreeably affected by even the most agreeable perfume, in strong quantities; and as far as the Ailantus is concerned, he thinks the weight of evidence and opinion is fully in favor of retaining it. He has it in his avenue, and about his house, and would hardly be willing to dispense with its beauty and usefulness for so trifling an objection. Another quality is its hardiness—being able to stand our winters much better than the White Mulberry and many others."

POMOLOGICAL DISCUSSIONS.

WE continue our extracts from the proceedings of the American Pomological Society. The subjects of the following discussion are varieties of apples that attract much attention—the *Smoke-house*, *Melon*, *Hawley*, *Canada Red*, *Northern Spy*, and *Autumn Bough*.

"DR. ESHLEMAN, of Pennsylvania—I propose to put on the list for trial, the *Smoke-house* apple. It originated in Lancaster county, and is like the *Vandervere* in its general appearance. It is very excellent for cooking, and will keep until April. If I were confined to one variety it should be the *Smoke-house*.

"MR. HEWES, of Pennsylvania—I have known it for eleven years.

"MR. TAYLOR, of Virginia—I am acquainted with it, and think it the most crooked growing tree I ever saw.

"MR. PIERCE, of Washington, D. C.—It is very crooked in growing, but has fruited very well with me. It was highly recommended to us, and I have known it for twenty years.

"MR. CORSON, of Pennsylvania—I have known it for forty-eight years. It is a constant bearer in the section of country where it originated, and no one should start an orchard without it.

"MR. MILLER, of Pennsylvania—So far as I have seen the *Smoke-house* tested on every class of soils, I have never seen it otherwise than a good apple.

"Mr. SPANGLER, of Pennsylvania—In relation to that apple, I have it growing and consider it unsurpassed for culinary purposes.

"The question was taken, and decided in the affirmative.

"Mr. ERNST, of Ohio—I move that the *Melon* apple be placed on the list for trial.

"Mr. BARRY, of New York—I think it should be placed on that list; it is a good bearer.

"Mr. SAUL, of New York—It is a remarkably poor grower, so far as I have seen it, otherwise I think there is no better apple.

"Mr. J. J. THOMAS, of New York—Last winter, at Rochester, there was an informal vote taken on the flavor of this apple, compared with others, and it received the largest vote.

"The motion to admit this apple on the list of those promising well was carried.

"Mr. WATTS, of Rochester, N. Y.—I would propose the *Hawley* apple, for trial, and call on Mr. BARRY for his opinion.

"Mr. BARRY, of New York—It is very highly esteemed, and I think worthy to be placed on the list for trial. It is productive, the tree is a good grower, and the quality is very good, though perhaps not first rate.

"Mr. HOVEY, of Massachusetts—From the specimens I have seen, I should class it among the very best apples we have. It is tender and refreshing, with an agreeable mixture of acid and sweet.

"Col. HODGE, of New York—I think very well of this apple, and have never heard anything disparaging said in relation to it.

"Mr. HOOKER, of New York—I have known it for some years, and there is but one opinion expressed in our vicinity, with regard to it. It is considered first rate.

"Mr. J. J. THOMAS, of New York—I have known this apple a great many years, growing on old and young trees, on light and heavy soils, and the fruit is uniformly good and fair.

"The vote being taken on Mr. WATTS' motion, it was decided that the *Hawley* apple be admitted in the list of those promising well.

"Mr. WATTS, of Rochester, N. Y.—I propose the *Canada Red*, which is the Massachusetts *None-such*, for general cultivation.

"Mr. J. J. THOMAS, of New York—It has been widely cultivated, and I think it is almost worthy of it. It has proved good in Ohio, and in New York, but whether or not far south I am unable to say.

"Mr. WATTS—At Rochester, it is considered one of our best western growing apples, and is particularly fine as a desert fruit. (Mr. WATTS here presented a painting of the apple beautifully colored.)

"Mr. ROBERT PARSONS, of Long Island—On Long Island, we think it is one of the best we have.

"Mr. BARRY, of New York—It has been tried a long time, and is an excellent apple.

"Mr. WALKER, of Massachusetts—All I have heard has been favorable to it. It is very excellent, but overbears itself.

"Mr. GOODALE, of Maine—It is well known in our Markets, and it is almost uniformly spotted, and is the last fruit we should want there.

"Mr. DOWNING, of New York—I am told that is the case through the State of Connecticut.

"Mr. HOOKER, of New York—In Western New York, three-fourths of the crops have been worthless, but under good cultivation it is excellent.

"The motion was amended so as to read that it be recommended for general cultivation, in certain localities, and then unanimously adopted.

"Mr. SAUL, of New York—I would suggest the *Northern Spy* as worthy of trial.

"Col. HODGE, of New York—There is but one opinion in regard to that apple with us. We consider it one of the very best winter varieties. It has been said to be spotted, but with us it is not so. I esteem it so highly, that for two or three years I have been planting out large orchards of it.

"Mr. MILLER—It has been fruited in Pennsylvania, and has become knurly.

"Mr. WALKER, of Massachusetts—It has not proved in the neighborhood of Boston what we expected of it. When I first saw it I thought it the best apple I had ever eaten, but now I think it suited only to certain localities. I hold it in the highest estimation, but think it wants the warm, generous soil of Western New York.

"Mr. GOODALE, of Maine—My father has it, and it is pretty fair.

"Dr. JONES, of Ohio—It has with us all the reputation given it in regard to quality, though it is not so great a bearer as I supposed it to be.

"Mr. WATTS, of Rochester, N. Y.—One day previous to my coming from home, I went ten miles from Rochester, where there were twenty-three trees growing. I found the trees full of fruit about half grown. It generally bears well, and is a thrifty grower. Those that do not grow on the end of the limbs of the tree, or where the sun cannot get at them, are often inferior. About Rochester, they are commencing to cultivate it very extensively, and orchards in the vicinity of Lockport, have been all grafted with this fruit. They have been known ten or fifteen years with us, and the price farmers receive in market for them is two dollars and a half per bushel,—and they will sell sometimes for five dollars,—in the spring some sent to New York brought nine dollars. The reputation in Western N. Y. is high, and if the gentleman saw it growing, they would be perfectly satisfied with it.

"It was voted that it be recommended for general cultivation in certain localities.

"Mr. ROBERT PARSONS, Long Island—I should like to recommend for trial the *Autumn Bough*. We find it one of the very best of apples.

"Mr. DOWNING, of New York—I consider it one of the finest apples eaten in October.

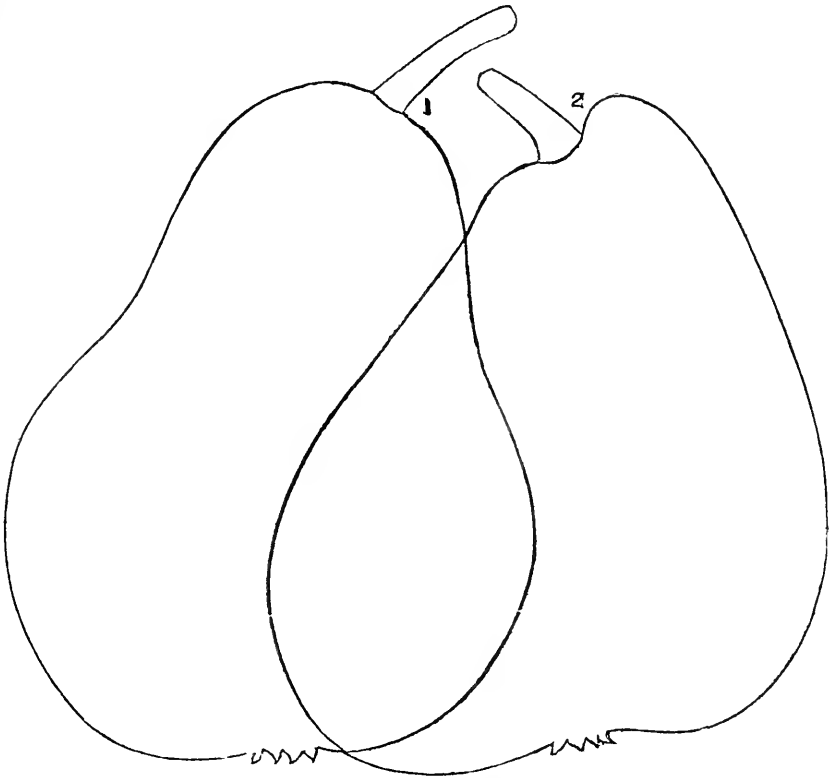
"On motion, it was decided to place it on the list with those that promise well."

NEW FOREIGN PEARS.

BY B. DESPORTES, OF ANGERS, FRANCE.

POIRE DES CHASSEURS. (*The Hunter's or Sportsman's Pear.*) Fig. 1.—I am not certain where this variety originated, but am inclined to think in Belgium. *Fruit*, medium size, pyriform, contracted at about two-thirds its height. *Stalk*, about an inch long, rather stout, and obliquely inserted on the surface. *Eye*, small, placed in a wide, shallow basin. *Skin*, green, sprinkled thickly with small dots and large russet patches. *Flesh*, coarse, yellowish white, melting, juicy, sugary, perfumed and agreeable. First quality. Ripens in Sept. and Oct. The tree is vigorous, and its form quite pyramidal.

This variety has fruited with us the first time this season.



CADET DE VAUX PEAR.—I am also ignorant of the origin of this variety. It bore here for the first time in 1851. It is an excellent winter pear, and a valuable addition to our present list of varieties for that season. *Fruit*, large, turbinate, irregular, very large toward the eye, and diminishes abruptly towards the stalk. This is short, stout, and planted obliquely in a deep cavity. *Eye*, quite large, and almost on the surface. *Skin*, yellow, sprinkled with patches of russet and washed on the side exposed to the sun. *Flesh*, fine, melting, a little gritty around the core, yellow, buttery, juicy, sugary, relieved with a slight acidity. Excellent. Ripe in December to February.

NOTE.—We insert these notices of new varieties more particularly for the benefit of nurserymen and others who may be engaged in *experimental* culture. We shall continue, in future numbers of the *Farmer*, descriptions of such varieties as have been tested in this country, and are adapted to

general culture. Our advice to amateurs, and all who desire to make their culture *profitable*, is to avoid all *novelties*, no matter how tempting and irresistible may be their fame. We have, surely, well tried sorts enough to suit all tastes and purposes. It is an expensive undertaking, this business of testing new sorts. We have seen a row containing upwards of fifty new varieties, and not more than half a dozen, if so many, have proved worthy of cultivation, or are likely to become useful and popular.

CIRCULAR OF THE AMERICAN POMOLOGICAL SOCIETY.—The following Circular came to hand after a large portion of the *Farmer* was made up. It speaks for itself, however, and we have no doubt but that it will meet with a cordial response in all parts of the country. Thousands will rejoice at the opportunity this will afford them of showing their appreciation of the great services rendered the country by the much lamented DOWNING.

"The undersigned were appointed a Committee by the *American Pomological Society*, at its late meeting in Philadelphia, (with power to add to their number,) to solicit from individuals subscriptions, each of *one dollar or upwards*, to procure such testimonial as the Committee may deem suitable and expedient, in memory of the lamented ANDREW JACKSON DOWNING.

"His private virtues, his great worth and important services in Horticulture, Rural Architecture, and the various branches of terra-culture, and his numerous and valuable publications, justly entitle him to this distinction.

"In discharge of the duty imposed upon us, we transmit to you this Circular, and earnestly request your prompt co-operation in fulfilment of this benevolent design.

"Associations, as well as individuals, who may receive this Circular, are requested to transmit, by mail or otherwise, their contributions to either of the subscribers who will register their names, residence, and subscription.

"MARSHALL P. WILDER, Boston; ROBERT BUST, CALEB COPE, Philadelphia; H. W. S. CLEVELAND, Burlington, N. J.; BENJAMIN HODGE, Buffalo, N. Y.; F. R. ELLIOTT, Cleveland, Ohio; LAWRENCE YOUNG, Springdale, near Louisville, Ky.; W. H. BRECKENRIDGE, Washington, D. C.; JOHN A. KENNICOTT, Northfield, Ill.

"The several Vice Presidents of the American Pomological Society, and the Chairmen of the various State Fruit Committees, are hereby constituted members of the above Committee, with authority to appoint associates in their respective States and Territories.

MARSHALL P. WILDER, Chairman."

IMPROVE YOUR ORCHARDS.—If there be any reader of the *Genesee Farmer* whose ground is cumbered with trees that yield indifferent or worthless fruit, we would suggest to them now, at this leisure season, to look over the lists of choice sorts which have been noticed in our last year's volume, procure scions of them, and have them ready when the proper time comes to graft. In the course of three years a large tree may be changed from a worthless into a valuable condition. Scions can be sent by mail almost any distance, wrapped tightly in oiled silk. Covering the cut end with sealing or grafting wax, is also a good precaution. The scions may be buried in sand or earth in a cold cellar, or in a dry place in the open ground, till wanted. It is a great satisfaction to know what one cultivates, and proper measures should, in all cases, be taken to preserve the names which accompany scions, until they are set, and then a record should be made for future reference. Labels suspended on the tree or branch ought not to be relied upon, as without constant watching they drop off and are lost, or they girdle and injure, if not ruin, the tree.

A GOOD OLD APPLE TREE.—Mr. D. M. HOTCHKISS, of Cheshire, Conn., writes us that he has an apple tree but a few feet from his door which is about 120 years old. It measures, at the root, 14 ft. 6 in. in circumference; centre of the trunk, 11 ft. 4 in.; where the limbs commence to spread, 9 ft. 4 in. The whole tree covers a surface of not less than five or six rods in diameter. Three of the main limbs bear one year and produce from thirty to forty bushels; the other five limbs bear the year after, and produce seventy to eighty bushels. Thus these three and five limbs continue to bear in alternate years. A person who once had charge of the farm has gathered 100 bushels from under it in one season. Can this be beaten? Mr. HOTCHKISS wishes to know.

Ladies' Department.

THE ROCKET LARKSPUR.

THE *Rocket Larkspur* was introduced into England, from Switzerland, 1573. It is of a compact habit of growth, and its blossoms appear set around the raceme, forming a dense mass of blossom; and its beauty has made it a great favorite for more than two hundred and fifty years. It requires a rich soil to bring it to perfection, and an addition of leaf mold from the woods will tell a good story when the plants are in bloom. The seed should be sown in drills, where the plants are intended to blossom, as they will not bear transplanting. When the young plants come up, they will require but little thinning, and may be left standing within two inches of each other; as from their compact habit they require but little room, and should be seen in masses to produce a fine effect. These plants are of such a neat and symmetrical growth, that any device, such as a name, can be well made with them. The time for sowing is in April.

Last season we presented to all our female readers whose application reached us, a package of flower seeds, containing from twelve to eighteen varieties of the best annuals grown, which we obtained from M. VILMORIN, of Paris. We have taken some pains to raise and preserve flower seeds the past summer, and we hope to have something new for the ladies before another spring. The agent of M. VILMORIN is now at our elbow, and soon returns to Paris, and authorizes us to say that the seeds to be sent to us this year will be extremely fine. With this addition to our own, we hope to have a good assortment of the best annuals grown, and of which our female readers shall have the benefit.

To the wife or daughter (and indeed we are not very particular as to the relationship) of every subscriber, who may apply before the 1st of March next, we will send a package of these flower seeds before the 1st of April. We are much gratified with the success of the ladies in cultivating flowers the past season, as expressed in the many very pretty letters we are constantly receiving. We should be pleased to publish extracts from many of these, but have only room for one:

"There is a voice in the gentle, silent, and fragrant flower, that addresses itself to our hearts in tones though dumb, yet eloquent, and awakens a flow of holy pleasure, such as is occasioned only by the communion of our better nature with the great Fountain of Purity. I cultivate these little links, therefore, between the earthly and the heavenly, not only for the pleasure they impart to the eye, but the elevation and purity they give to the soul."



Editor's Cable.

OUR JANUARY NUMBER, the first for the new year, 1852, is now before you, kind reader; and it is a specimen of what we intend our Journal shall be each month; differing in this wise only, that we intend to make each number better than its predecessor. We invite all to show this number to their friends and neighbors, and we will supply extra numbers to those who may desire them, and replace any that may in this way become damaged.

Already we have received largely increased clubs from many places, and our friends in all sections of the country are doing even more, perhaps, than we had a right to expect. Without such generous aid from the friends of Rural Progress, we could not furnish the *Genesee Farmer* at such a low price; with it, we intend to give our readers at least one of the best agricultural papers in the world, for the small sum of THIRTY-SEVEN AND A HALF CENTS a year to clubs of eight or more.

We often receive letters inquiring on what conditions we send to clubs—whether all are required to be sent to the same office, &c. The *only rule* we have, is to send our Journal to clubs in such way and manner as will *best suit the convenience of our subscribers*.

WE are anxious that all should preserve the numbers of the *Farmer*, to be bound for future reference. Those who have not convenient access to a bindery can stitch them together in a few minutes, so as to effectually preserve them. We take particular pains in mailing the *Farmer* so that every number should reach our subscribers, but it would be strange if some among the *five hundred thousand* papers we send every year should not fail to reach their destination. To those who may not have received all the numbers, or whose copies may have become damaged or lost by lending to neighbors in the hope of inducing them to subscribe for themselves, we shall take pleasure in supplying the numbers necessary to complete the year, without charge. We can at all times supply back volumes and missing numbers.

WE are indebted to numerous friends for pamphlets containing addresses, &c., and other favors, which we shall notice next month.

REAPING AND MOWING MACHINES.—A friend has written us, asking us to state, for the benefit of purchasers, which is the best Reaper and Mower now offered for sale. If we really knew *beyond question* which is the best, we should have no hesitation in stating the fact for the benefit of our readers. Justice to those who would depend on our judgment, as well as to the manufacturers, requires that there should be no *doubt* on the point. While witnessing the operation of some nine or ten reaping machines at the trial at Geneva, in the operation of several of which, with the closest observation we could give, we could see but little if any difference, we were sensibly aware of the difficulty of the task undertaken by the committee. We have seen *Hussey's Reaper* at work in the harvest field, not for *trial*, but for *work*; not under the direction of the inventor, or a machinist, but a plain, practical farmer, and its owner; and as the grain fell before its onward motion, and the farmer related the difficulties that attended former harvests, and the ease and satisfaction with which it was now done, we have been ready to exclaim, this is a *perfect reaper*. Again we have seen the work done apparently as well, and with as much ease, by *McCormick's*, and *Seymour & Morgan's*; and we have always found that the farmer that used either pronounced it *the best machine*. With these facts in view, we have always regretted that the manufacturers of different Reapers should say so many bad things of each other's machines.

We have seen excellent mowing done with *Ketchum's Mower*. We once recommended a farmer in this county, who usually cuts about thirty acres of hay, to get one; who, after a season's trial, informed us he cut all his own hay without help, and no ordinary sum would tempt him to do without one.

By reference to an advertisement in this number, it will be seen that H. L. EMERY & Co., of Albany, are about to add another to the list of Reapers and Mowers offered for public favor. Mr. EMERY is well known to the public as a skillful inventor and manufacturer of agricultural implements, and we have no doubt but his new Reaper and Mower will be well worthy the attention of farmers. A description of the new Reaper is promised in season for next month.

OUR friends ordering the *Farmer* will be particular in giving the name of the Post Office, County and State; also, in writing names plain, as by this much perplexity may be avoided to ourselves and subscribers.

TERMS—FIFTY CENTS a year for single copies; five copies for \$2, being *forty cents each*; and eight copies for \$3, being *thirty-seven cents each*, and any greater number at the same rate.

ADVERTISEMENTS, to secure insertion in the *Farmer*, must be received as early as the 10th of the previous month, and be of such a character as to be of interest to farmers. We publish no other. Terms—\$2.00 for every hundred words, each insertion, *paid in advance*.

Inquiries and Answers.

I have been greatly profited by reading your valuable paper, and have admired the courtesy and patience with which you have answered the inquiries of those less advanced in the science and art of agriculture than yourselves. Pardon me for asking a few questions in a time of need:

1st. I have a quantity of scraps of leather which a thoughtless shoe manufacturer carted into the street. How can I best decompose them, and to what purpose can I best apply them? Would ashes, leached or unleached, assist in the work? What is the best food for Grape vines, and how should they be planted?

2d. I have a considerable quantity of settlings of white lye, or undissolved black salts; in what manner can I apply them to the soil, and to what, in the fruit or vegetable line, will they furnish the best food?

3d. I have a large quantity of leached ashes, also of barnyard manure.—How can I best apply these articles, separately or mixed? If I apply the ashes unmixed, shall I leave them on the surface or plow them in?

4th. Have not leached ashes, when applied in considerable quantities to a clay soil, a tendency to make it more compact? W. W. W.

1st. Unleached ashes, or caustic lime, will greatly facilitate the decomposition of all animal or vegetable substances, but we doubt the policy of using them for this purpose, for these alkalis neutralize any acid that may exist or be formed during the fermentation, and the mixture is either neutral or alkaline, so that the ammonia formed from the nitrogenous substances, not being arrested by any fixed acid, passes through the compound and is lost. That such is the case you may satisfy yourself by mixing any highly nitrogenous substance, such as guano, blood, fish, or liquid excrements, with unleached ashes or quick lime and allowing the mixture to stand a short time in a warm place. Ammoniacal gas will be rapidly evolved, and the well known "hartshorn" be perceptible. In this fact lies the difficulty of decomposing insoluble animal substances without much reducing their intrinsic value; and they must be decomposed before they can serve as food for plants. A compost might be formed by mixing the leather, &c., with horse manure and covering the heap with peat or clayey mold. The

ammonia generated by the horse manure would act on the leather and assist its decomposition, and the peat or loam would do considerable towards retaining the gases. It is possible that the most economical way of using them would be to soak them some time in the liquid of the barnyard and apply them to the soil, where they would gradually decompose and little of their fertilizing properties would be lost, though they would not have so beneficial an effect the first year as if in a more available form.

2d. If mixed with muck or peat, they will make a good compost and will be most valuable as a manure for beans. Will do good on a worn out, mossy meadow, or as a manure for potatoes.

3d. Plow in the manure and spread the ashes on the surface and drag them in.

4th. Yes! They do most good on light sandy soils. If you have any light knolls put the leached ashes on them, as a manure for wheat.

GUANO AS A MANURE FOR HOPS.—I wish to inquire through the pages of the *Farmer*, of which I have been for years a constant reader and subscriber, your opinion as to the propriety of applying guano to our hop fields, in the place of our barnyard manure, as we are in the habit of using the contents of the barnyards yearly on the hop fields, which practice makes rather a severe tax upon the resources of the farm and if persisted in cannot fail to impoverish our land. Unless some other and better system than the one now employed, can be adopted by hop growers, I think every sensible man will have to abandon the business, which we don't like to do as long as hops are worth 20 to 25 cts. per pound, and 600 to 800 lbs. can be produced to the acre. Any information respecting the above inquiry will be thankfully received. JAMES L. YEOMANS.—*Portlandville, N. Y.*, 1852.

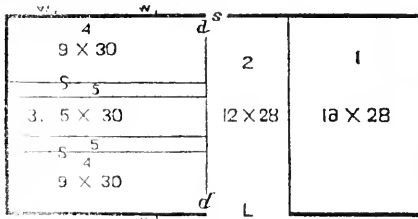
Guano is used to a great extent in England as a manure for hops. The immediate effect of its application is very beneficial, though it is not so lasting as rich barnyard manure. Woolen rags, refuse leather from tanneries, horn shavings, blood, fish, hair, and other animal substances, have all been found by experience very valuable as a manure for hops, and in fact for all crops. The secret of their great benefit lies in the fact that they contain some 17 per cent. of nitrogen in dry matter, which, by decomposition in the soil or the compost heap, forms, by uniting with hydrogen, the most needed of all fertilizers and chemico-agricultural agents—ammonia.

The great value of guano consists in the high per centage of ammonia it contains in a soluble and readily available form; in addition to this, it contains, comparatively, a large amount of phosphoric acid, the inorganic substance of which our soils are *naturally* most deficient, and of which crops most commonly cultivated remove the greatest quantity from the farm.

Hops are gross feeders and need high and repeated manuring, or the soil will be soon ex-

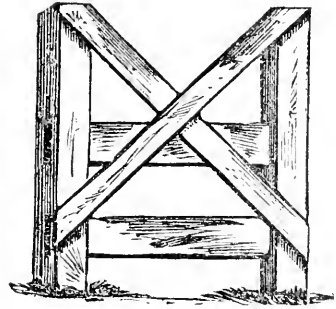
hausted and incapable of yielding good crops, however well it may be tilled, and the vinyard managed. We have never known guano applied to hop vinyards in America, but have little doubt that it will be found of great benefit to the plants. We will take up the subject in a future number, and give some results of experiments with guano and special manures, as obtained in England. If any of our readers have used guano for the hop, they will benefit many by giving the result, pro or con, to the public through the pages of the *Farmer*.

BARN AND COW STABLE.—Noticing the requests of Mr. LEVI PADDOCK, in the November number, I will endeavor to answer a few of them. The following ground plan of a barn is 58 feet by 28 feet. If too large, you can leave out the space No. 2, and fill your barn from the outside, but it would not be so convenient. You will want stable doors, which are not marked in the plan, as they should be arranged according to the location of the building. Stanchions are the most convenient for cows if they are to be milked in the stable. Make your stanchions three feet from center to center, and your cows will have room sufficient. They may be kept up sixteen hours out of twenty-four, in cold weather, with benefit.



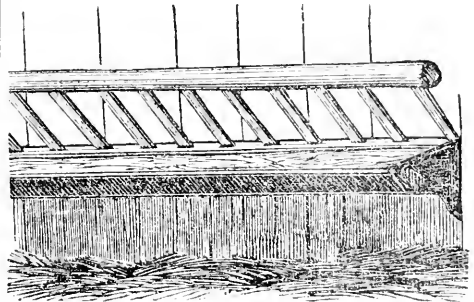
Explanation of the Plan.—1, Bay; 2, Space for drawing in hay; 3, Feeding alley; 4, 4, Cow stables; 5, 5, Mangers, two and a half feet wide; *d*, *d*, Slip-doors; *s*, Small Door; *L*, Large Door; *w*, *w*, *w*, *w*, Windows. On the lines marked *s*, *s*, stanchions for ten cows on each side, the cows to stand facing the alley. The bottom or bed-piece of the stanchions should be eight inches high by four thick, which may form the front part of the manger; the back part may be made of boards. The bottom of the mangers, and floor where the cows stand, should be raised four inches, so as to form a gutter close behind them. Have a cellar under the cow stable, for manure, by all means. A. L. W.

FEEDING BOXES FOR CATTLE AND SHEEP.—In answer to Mr. BAINBRIDGE, on page 259, I forward a sketch of a box and feeding-rack for cattle and sheep—the best I know of. The box for cattle stands in the open yard, and is well constructed to feed poor hay, straw, and other coarse fodder.



FEEDING BOX FOR CATTLE.

It is six feet square, and the four posts the same in height. The four sides alike. You will see that four cattle can eat out of the box, one on each side; and as their heads come in competition, it makes them more greedy. By this means they work up considerable coarse fodder during the day.



SHEEP-RACK.

The sheep-rack is the same as used in France, under cover, and is fastened to the building. I use them altogether now, and consider them superior to all others which I have seen. They are built similar to the common horse-rack and manger. The trough in front of the rack is to catch the hay that may drop from the rack, and for feeding them their grain. It stands two feet high, and is seven inches wide on the bottom. The slats, or uprights, are of good oak timber two inches wide, three-fourths inch thick, and twenty-six inches long. They stand three inches apart in the rack. No hay is wasted in this manner, and the wool is not worn off the head and neck of the sheep. S. W. JEWETT.—*Middlebury, Vt.*

HORTICULTURAL.

(R. R. W., Picton, C. W.) Your compost is excellent, but will not be the worse for a liberal admixture of old stable or barn-yard manure, unless your ground should already be in a very high state of culture.

PLANTING TREES.—Prune off carefully and smoothly all bruised and broken roots; spread

these out in their natural position and fill in finely pulverized surface mold among them, so that there will be no empty crevices. The collar of the tree should be an inch or two below the surface to allow for settling. In the case of dwarf pears on quince stocks, all the stock should be below the ground. We would advise you to consult some treatise on this subject for more ample detail than we can give here.

"Is there any danger of putting too much soap suds around trees?" Certainly. There is nothing so good for trees but that they may have a *surfeit*. An application of soap suds once a fortnight, or once a month, in the growing season, will do very well, but a dose every washing day would be dangerous.

THE CURCULIO.—It is not a *certain* way to avoid the curculio, to plant your plums in a hog yard, but it will greatly lessen their depredations, for the hogs consume the fallen fruit and thus prevent the increase of the insect; but the trunks of the trees must be well protected from the hogs or the remedy will be worse than the disease.

The *Baster Beurre* pear is perfectly hardy here, and we think would succeed with you. Give it a trial, especially on the quince. *Princess St. Germain* is an excellent *hardy* winter pear for profitable culture.

The blotches on the leaves of the pear sent, is a *fungus*, and we have not before seen it in such a highly developed form. In breaking the surface of some of the larger patches we found them quite powdery, like a common "puff-ball." The leaves of trees, and even the fruit, are attacked by this fungus, more in some seasons and localities than in others, as wheat is by the "rust." We can offer no specific remedy, but may remark that *vigorous*, healthy trees are less liable to it than those in a debilitated condition.

OSAGE ORANGE.—We are inclined to think that it would not prove hardy enough with you to make an efficient, successful hedge plant. You might try it on a small scale. One or two seasons will determine the question for you satisfactorily. We can recommend you the *Buckthorn* as to entire hardiness.

(J. F. P., Havanna, Chemung Co.) **THREE BEST FALL PEARS ON QUINCE, FOR MARKET.**—*Louise Bonne de Jersey*, *White Doyenne*, and *Beurre Diel*.

THREE BEST WINTER PEARS ON QUINCE, FOR MARKET—*Vicar of Winkfield*, *Glout Morceau*, and *Easter Beurre*.

BEST QUINCE STOCKS FOR THE PEAR.—The French cultivators use two sorts, the *Angers* and the *Paris* or *Fontenay*. We use both also, and con-

sider them equally good in most respects. The *Angers* is the most vigorous grower when young, but the other is the hardier and probably continues to increase in size with the pear better than the *Angers*.

We find it impossible to answer questions by letter.

(J. A. N., Mercer Co., Pa.) We cannot give you a satisfactory reply, and have inserted the substance of your question to call the attention of others to it. Our opinion is that the disease proceeds from the effects of freezing and thawing in winter. It is not uncommon in young trees, even in the milder climates, and very common in the west, for the bark to be ruptured at or near the ground or snow surface. We observed more of this here last winter than ever before.

"Can you or any of your correspondents explain the cause, or give a remedy, for a disease that has attacked my orchard apple trees in the following manner?"

"Along before harvest, I discovered on examining my trees that the bark for a foot or two above the surface of the ground was dying, on some trees all around, and on others half around or in large spots. It was at first scarcely observable without cutting into the bark, but now you can readily see a great difference. The trees above and below the affected parts are quite green and growing, while on the dead part the trees are smaller and the bark dry and adhering to the tree or coming loosely off. The ground has been in clover and hog pasture for three years back. Last season I followed it and sowed wheat on it. I thought at first the rubbing of the hogs might have produced the disease, but it has appeared higher up than the hogs could reach, and other orchards here are similarly affected. The soil is high and dry, with a south-east aspect." J. A. N.—*Mercer Co., Pa.*

Will some of our correspondents look into this?—Ed.

Seeds.

FOUL MEADOW GRASS SEED. Genuine; Fine Lawn Grass; English and Italian Ray Grass; White Clover, &c., for sale by RALPH & CO., Union Ag. Warehouse and Seed Store, 23 Fulton St., New York. [11-21]

Valentines,

FOR ST. VALENTINE'S DAY, FEB. 14, 1853.

D. M. DEWEY, Rochester, N. Y., Wholesale and Retail dealer in Valentines, in order to supply distant customers by mail, and to accommodate the young ladies and gentlemen, has put up in a case a nice variety of Valentines, &c., called the *VALENTINE CASKET*, for *One Dollar*, which contains—

1 Sentimental Valentine,	33 cts.
1 " " "	25 "
1 " " "	13 "
3 Sheets Lace,	18 "
4 Comic Valentines,	25 "
6 Fancy Envelopes, to match,	25 "
1 Valentine Writer,	6 "
Box and Postage,	20 "
10 Valentines—Retail Price for all, \$1.70—all for \$1.00.	

Upon the receipt of \$1.00 by mail, post-paid, I will mail the Casket to any part of the United States, free of postage. If \$2.00 or \$3.00 worth of Valentines are desired, I will select them and mail as above, so as to go safely and promptly.

Dealers supplied, for Cash, with Cases assorted as above, containing \$5, \$10, or \$15 worth, at a discount of 40 per cent. from the retail prices. Address

D. M. DEWEY,
Arcade Hall, Rochester, N. Y.

The Valentines are now ready to send.
January, 1853.

**NEW PATENT
MOWING AND REAPING MACHINE,
BY HORACE L. EMERY,
Albany, N. Y.**

THE attention of the public is invited to a newly invented and patented Mower and Reaper recently completed by the subscriber, and which is believed to combine as many desirable points of excellence as any, if not all which are valuable in the best of those of other makers now in use, beside many of equal or greater importance not before attained by any of them; while at the same time it is believed every objectionable feature which appears more or less in all others, is, in this, wholly avoided. It was the intention to illustrate this machine with a set of fine engravings which have been under the hands of the artist several weeks, but being still incomplete they cannot appear until next month. It will suffice, therefore, now to say it is by far the most simple of any in use, one internal gear and pinion performing all the operations of the machine without cranks and connecting rods. It is readily adjusted by the person driving the team, to cut high or low, by elevating or depressing the frame work at its attachment with the center of the main propelling wheel, and always maintaining the cutters in a horizontal instead of an inclined position, whether high or low, or can readily be thrown out of gear when desirable in traveling about the farm. It travels entirely upon its own wheels, which are so placed as to maintain a uniform elevation from the ground when traversing ridges or dead furrows, and all undulations of the surface. It is readily moved about the farm, and is capable of turning square corners without loss of travel or time.

In cutting grain, the raker stands erect face forward and directly behind the center of the platform, thereby enabling him, with perfect ease, to deliver the grain to one side in suitable gavels for binding, and clear from the machine in its next load. The cutter beam being made of thick plates of wrought iron rolled into ribs, and so fitted together as to form a strong, stiff, and hollow beam, while it is at the same time lighter than the ordinary wood beam in use. This hollow beam serves also to protect a shaft or axle inside, running through its whole length, and which is connected by a crank axle to a supporting wheel at its extreme end.

For housing it, all that is necessary is to remove the cutting beam, and the whole will occupy but two feet by eight feet on the floor and three and a half feet high.

The main propelling wheel is eight inches on the face and thirty-nine inches in diameter, and cannot sink into soft or wet ground, or require unnecessary power to overcome its own resistance. When complete the whole machine will not exceed 500 lbs. in weight, and will be furnished, at Albany, for as low a price as any other, while it is believed to be intrinsically worth 50 per cent. more to the farmer than any other now in use. For further particulars address
HORACE L. EMERY,
Care of Emery & Co., Albany, N. Y.

January, 1853.

Important to Farmers.

IT IS generally conceded by all intelligent farmers that cutting the food for cattle will save from 25 to 30 per cent. Berthoff's Oblique Rotary Corn Stalk, Hay and Straw Cutter, is conceded by all that have used it to be far superior to any other, as it destroys all hard substances in the stalk leaving it soft and easily eaten. It turns very easy and is not liable to get out of order, and, with care, will last an age. It has been awarded Four First Premiums and a Silver Medal, by the American Institute. For further particulars address (post paid) the patentee, H. W. BEANBOLD, Sugar Loaf, Orange Co., N. Y., or LONGETT & GRIFFING, 25 Cliff St., New York, who are agents.
[11-31] Patent Rights for sale.

Premium Dahlias.

THE subscribers offer for sale this Autumn and the ensuing Spring, 10,000 Dahlia Roots, which have proved to be the choicest collection in the States and Canadas. [See records of the Fairs for the last four years.]

Persons commencing the Nursery business, and Amateurs, will find it to their advantage to give us a call, or make enquiries before purchasing elsewhere.

C. J. RYAN & CO.,
Rochester and Charlotte Plank Road Nurseries, Rochester, N. Y. [11-4]

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The Practical and Scientific Farmer's own Paper

THE GENESEE FARMER,

A MONTHLY JOURNAL OF

AGRICULTURE AND HORTICULTURE,

ILLUSTRATED WITH NUMEROUS ENGRAVINGS OF

Farm Buildings, Domestic Animals, Implements, &c.

VOLUME XIV, FOR 1853.

DANIEL LEE, JAMES VICK, Jr., & JOSEPH HARRIS, Editors.

P. BARRY, Conductor of Horticultural Department.

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DANIEL LEE,
Rochester, N. Y.

November, 1852.

POSTAGE LAW.—By the new Postage Law, which took effect on the 1st of September last, the postage on the *Genesee Farmer* for one year is as follows,—when paid quarterly in advance:
Anywhere in the State of New York, . . . 3 cts.
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DURING the year 1852 the editors of the GENESEE FARMER circulated over Eight Hundred Dollars worth of the best Agricultural Books published in the country. These works, in addition to *Forty Thousand Copies Monthly of our own Journal*, scattered all over the land, even to Oregon and California, we believe have exerted, and will continue to exert a very beneficial influence. Their influence is not confined to those who receive them, but is felt by their children, their friends and neighbors. They must increase the knowledge, and consequently the power, and the wealth of those for whose especial benefit we labor. It is our intention to increase the circulation of these works. We do this for the good they accomplish, as well as a slight compensation to our friends—the friends of Rural Improvement—particularly Post-Masters throughout the country, who act as voluntary Agents, without the expectation of pecuniary reward. Below we give our List of Premiums for 1853.

PREMIUMS TO INDIVIDUALS.

1st. THIRTY DOLLARS in AGRICULTURAL BOOKS, to the person who shall send us the largest number of subscribers, at the club prices, before the 10th day of April next, so that we may announce the successful competitor in the May number.

2d. TWENTY DOLLARS in *Agricultural Books*, to the person who shall send us the second highest list, as above.

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In order to make the circulation of *Good Agricultural Books* MORE GENERAL AND BENEFICIAL, and to reward EVERY ONE of the friends of the Genesee Farmer for their exertions in its behalf, we will give to those not entitled to either of the above premiums, the following *Books*, free of postage, or *Extra Papers*, as may be preferred:

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2d. To every person sending for TWENTY-FOUR Copies, as above, any Agricultural Book valued at 50 cents, or two extra copies of the Farmer.

3d. To every person ordering THIRTY-TWO Copies of the Farmer, any Agricultural Book worth 75 cents, or three extra copies of the Farmer.

4th. For FORTY, any Agricultural Book valued at \$1, or four extra copies of the Farmer.

5th. For FORTY-EIGHT, any Agricultural Book worth \$1.25, or five extra copies of the Farmer.

For larger numbers. Books or papers given in the *same proportion*. To save cost to our friends, we *pre-pay postage* on all Books sent as premiums, and persons entitled will please state whether they wish Books or extra papers, and make their selection when they send orders, if they desire Books; or if they have not obtained as many subscribers as they intend to, we will delay sending until the club is full, if so requested. We do not require that all the papers of a club should be sent to one Post Office. If necessary for the convenience of subscribers, we are willing to send to as many different Offices as there are members of the Club. We write the names on each paper, when a number is sent to the same Office, if so desired, but when convenient Post-Masters would confer a favor by having the whole number ordered at their own office, sent to their own address.

COUNTY PREMIUMS.

To aid as much as possible in establishing *County Agricultural Libraries*, we offer the following Premiums, which we hope will aid in the more general establishment of County Libraries:

1st. We will give an AGRICULTURAL LIBRARY worth FORTY DOLLARS to the County in which the *greatest number of copies of the Genesee Farmer is taken by the 10th of April next*. This Library to be kept as a County Agricultural Library, under the care of the Agricultural Society.

2d. To the County in which the next greatest number is taken, an *Agricultural Library* worth TWENTY-FIVE DOLLARS, on the same conditions as above.

As the above two premiums will probably be taken in the *State of New York*, and as we wish to give our friends in other States an equal chance in the competition, we offer the same premiums to COUNTRIES OUT OF THE STATE OF NEW YORK, thus:

1st. To the *County out of the State of New York* in which the greatest number of copies of our paper is taken, an *Agricultural Library* worth FORTY DOLLARS.

2d. To the next *County out of N. York*, a Library worth TWENTY-FIVE DOLLARS.

As all Subscriptions commence anew with the year, places where the Farmer was never before taken will stand an equal chance in the competition for premiums. Individuals will receive the premiums to which they may be entitled for their individual benefit, as a compensation for their personal exertions, and the numbers they send will be credited to the Counties where the papers are sent, so that the premiums to individuals will not at all interfere with the County premiums, or the County with individuals.

BACK VOLUMES of the Farmer will be furnished, if desired, and counted the same as new subscribers. We shall keep a correct account of the subscribers sent by each person and county. In the May number we shall announce the premiums. Libraries will be forwarded per order, immediately after the announcement, and persons or societies can select their own books, or leave the selection to us. Specimen numbers, show-bills, &c., sent to all post-paid applicants. All letters must be paid or free. Subscription money, if properly enclosed, may be mailed at our risk.

THE HORTICULTURIST,

A Journal of Rural Art and Rural Taste.

THE melancholy death of A. J. DOWNING deprived the readers of the *Horticulturist* of the labors of one whose essays they had so long read with unmingled pleasure and profit. Since that sad event became known, the great question among the Horticulturists of the country, who have evinced a deep interest in the matter, has been, who should succeed to this important post. With singular unanimity, it has been assigned to P. BARRY, of Rochester, who has been urgently solicited in various ways, both publicly and privately, to take charge of the work. This, from the nature of his engagements, he could not do while the *Horticulturist* was published at Albany. The subscriber, who has long been connected with Mr. BARRY, as one of the editors of the *Genesee Farmer*, has therefore purchased the *Horticulturist*, and after the conclusion of the present volume it will be PUBLISHED AT ROCHESTER, and

EDITED BY P. BARRY,

assisted by many of the best Horticulturists of the country, whose communications will materially add to its value. The ARCHITECTURAL DEPARTMENT will be conducted by gentlemen of ability and reputation.

To render the work accessible to a greater number, and consequently more beneficial, the price will be reduced to Two DOLLARS per year, *in advance*, and at the same time various improvements made. Each number will contain a full page engraving of some new, rare, and valuable fruit or flower, drawn from nature, and engraved in a style not excelled.

Still further to add to the value of the work, and meet the improving taste and increasing wants of the horticultural community, we shall also publish an edition with COLORED PLATES, each number containing a full page engraving of some new, rare, and valuable fruit or flower, correctly colored from nature, by the best living artists in this line. This will be a new and important feature, in this country, and must command the attention and patronage of both professional and amateur Horticulturists. As the number of colored plates we can furnish will be limited, from the care and time required in their preparation, those who wish the *Colored Edition of the Horticulturist* for 1853, will do well to order immediately. Price with colored plates, Four DOLLARS, *in advance*.

All who cultivate fruit or flowers should read the *Horticulturist*, as it is devoted entirely to Horticulture and its kindred arts Landscape Gardening and Rural Architecture, and will keep its readers advised of everything new on the subject, either in Europe or America.

It will be our aim not only to make the *Horticulturist* superior both in style and matter to any work of the character in this country, but equal to any of the Horticultural Journals of Europe; and we confidently ask the aid and co-operation of the Horticulturists of the country. The work is published monthly, and contains forty-eight large pages, without advertisements, stitched in a beautiful and appropriate cover. The January number will be issued early in December, and specimen numbers will be sent to all who will interest themselves in its behalf. The volume to commence on the 1st of January, 1853.

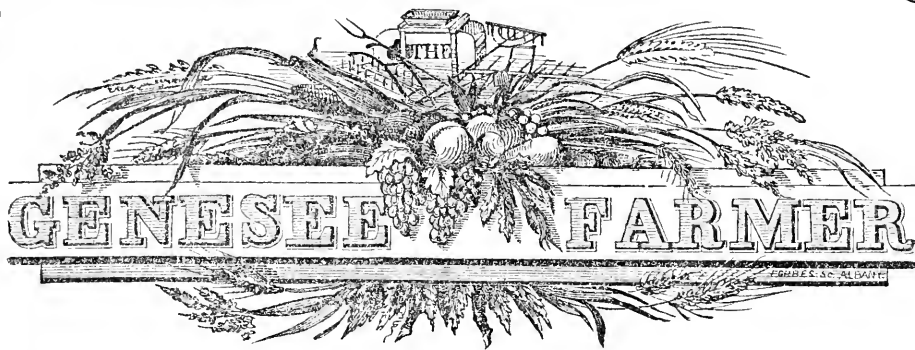
All Agents for the *Genesee Farmer*, Post Masters, and our friends generally, are invited to act as Agents for the *Horticulturist*, who shall receive an extra copy of the plain edition for ten dollars sent us according to our terms, and two copies of the plain edition or one of the colored for twenty dollars. Those who prefer, may retain twenty per cent. on all subscriptions, to compensate them for their trouble.

November, 1, 1852.

Address

J. VICK, JR, PUBLISHER,

Rochester, N. Y.



VOL. XIV.

ROCHESTER, N. Y., FEBRUARY, 1853.

NO. II.

THE FARM AS A MANUFACTORY.

NUMBER TWO.

THE benefits derived from a judicious rotation of crops are now all but universally admitted. The reasons assigned for the necessity or advantage of rotation are very various. A very plausible theory advocated by DE CANDOLLE, attributed the necessity of rotation to a supposed excretion from the rootlets of plants. These vegetable excrements were said to be very injurious and even poisonous to the same kind of plant that excreted them, but were of great fertilizing value to other plants of a different character. Many experiments have been made to test the truth of this beautiful theory, the results of which are adverse, and force us to believe that though some plants may excrete matter that is not suitable food for them, our commonly cultivated plants, as wheat, maize, potatoes, meadow grasses, &c., do not thus excrete injurious matter; but that if the land be kept clean and the required fertilizers or constituents are supplied, these plants can be grown annually on the same soil as long as desired.

Another theory, advocated by many of the ablest chemists of the age, refers the advantage of rotation to the variable amount of inorganic constituents required by the different crops forming the rotation. The generally adopted system of rotation in the best farmed districts of England, and which an experience of fifty years has sanctioned as being judicious and beneficial, is as follows: First year—wheat after clover. Second year—turnips, partly eaten on the land by sheep. Third year—barley or wheat seeded with red and other kinds of clover. Fourth year—clover, mown for hay or eaten on the land, followed by wheat in the fall at one plowing; and so on as before. The advocates of this theory point to this well established system of rotation as practical evidence in support of their chemical deduction, and reason thus: The ash of wheat contains 50 per cent. of phosphoric acid, the ash of turnips only 11 per cent. We can not grow wheat after wheat, because the land is exhausted of available phosphoric acid; but turnips, requiring only a small quantity of phosphoric acid, will do well after wheat, as experience proves.

In answer to this, we say that experiments show that an application of an ammoniacal salt containing not a particle of phosphoric acid, will cause the wheat plant to grow luxuriantly and yield successive *annual* crops of thirty bushels per acre, while on the same soil turnips will not grow larger than radishes, though dressed with every kind of manure in which phosphoric acid is not a constituent; but an application of available phosphoric acid produces annually good crops of turnips. These experiments, extending over nine successive annual crops, together with the fact that phosphoric acid is not used in general practice as a manure for wheat, while it is applied to an enormous extent and with the most beneficial results as a direct manure for turnips, are sufficient to dis-

prove the correctness of the above theory even though they gave no other in its place. We conclude from these facts and others of a similar character, that the relative proportion of any of the constituents of plants is in no case a certain indication of the relative proportion in which these ingredients should exist in an available condition in the soil or be supplied in manure. This can only be determined by inductive field experiments.

The theory we have adopted, though not so plausible as the one under discussion, is far more in accordance with the observations and general practice of intelligent agriculturists, and we know of no well ascertained facts that throw doubt on its correctness. It is in brief this: The principal requirement of the wheat and other cereal plants is ammonia; that of turnips, phosphates and carbon. Wheat *destroys* a large quantity of ammonia during its growth, and *collects its carbon from the atmosphere*. Turnips and clover, if supplied with available phosphates and carbon, *collect their ammonia from the atmosphere*. The turnip crop contains a large quantity of nitrogen thus obtained from the atmosphere. Its consumption on the land by animals destroys the greater part of the carbon and abstracts considerable phosphoric acid, while nearly the whole of the nitrogen is left on the land in the excrements of the animals, and thus supplies the following grain crop with the required ammonia as well as a large amount of potash and other mineral constituents. The same remarks apply to the succeeding clover crop. It collects its nitrogen from the atmosphere, and leaves it on the land in the roots of the plant and in the excrements of the animals consuming it, and so affords the indispensable ammonia for the following wheat crop.

We have considerable doubt in respect to agricultural plants collecting, to any great extent, ammonia and carbonic acid from the atmosphere through their leaves. We are inclined to think that what they obtain from the air is brought to the roots in rain. The fact that broad-leaved plants obtain a large amount of organic matter from the air in some way, is not necessarily opposed to our view, inasmuch as these plants, having large surfaces exposed, evaporate a proportionably large amount of water, and so take up more and with it imbibe more organic matter, which is retained in the plant. It has been justly supposed that if plants obtained their organic matter from the atmosphere through their leaves, a manure that would increase the size of the leaves would increase the amount of organic matter obtained by the plant from the air, and enable it to dispense with the organic matter of the soil. An ammoniacal salt applied to the turnip crop greatly increases the quantity of leaf per acre, but it does not increase the amount of organic matter in either leaf or bulb, which should be the case did increased leaves enable the plant to collect an increased quantity of organic matter from the air. On the other hand, an application of superphosphate of lime, which greatly increases the underground collecting apparatus, or lateral fibrous roots, gives a very small proportion of leaf and a very large quantity and high proportion of organic matter in bulb and leaf. This would indicate that the power of agricultural plants to collect their food from the air is dependent more on the extension of roots than on an artificial extension of leaves. What we wish to be understood, therefore, when we say that plants of certain orders collect their nitrogen from the atmosphere, is not that they inhale it either as nitrogen, ammonia, or nitric acid, through their leaves, but rather that they retain that which is brought to them from the air in the rain water which they take up and evaporate.

In our opinion, the whole theory of the English rotation of crops hangs on the destruction of ammonia during the growth of wheat and other cereals, and on the non-destruction or retention of the ammonia by other orders of plants, such as the Cruciferae and Leguminosae, and possibly of all plants containing but little silicic acid or starch. If we admit the truth of this theory, and examine the effect of our too common system of rotation—such as corn, barley, wheat, timothy, with perhaps a little clover—we can easily perceive that our soils would be sooner impoverished of nitrogen than of any other element. This would not be the case if there was no destruction of ammonia during

the growth of cereals, for the ammonia brought to the plants by rain is probably quite as much as that which a large crop of wheat, &c., contains. The soil under such circumstances would be first impoverished of the mineral elements or inorganic constituents of plants, and man would possess the power of *utterly exhausting* the soil, which under existing laws is mercifully withheld from him. We know that he can impoverish to an alarming extent the soil he tills, but he can not exhaust it in such a manner but what a skillful farmer can restore it to fertility without, in most cases, the direct application of the removed inorganic ingredients. That is to say, the cultivation of our common crops, from exhausting the soil of its organic matter and its available inorganic ingredients, impoverishes it to that degree when crops can no longer be grown without serious loss; yet at the same time there is lying latent in the soil sufficient inorganic constituents of plants for large crops, and which a better cultivation and a more scientific rotation of crops would render available and the farm productive. We admit that were a cheap source of ammonia discovered, it would then be not only possible but quite easy to exhaust our now fertile wheat soils, so that they could not be restored without carrying back the mineral elements removed in the crops and animals exported from the farm. But such a state of things does not exist, no cheap means of affording ammonia to plants having been discovered; and at present, in this country at least, we know of no way of supplying our cereal crops with the required ammonia without at the same time increasing the available inorganic constituents. Thus, if we grow clover, turnips, beans, or peas, or purchase oileake, bran, &c., to be consumed by cattle, we supply ammonia, but at the same time we also supply the necessary available minerals: and, as we have said before, these nitrogen collecting plants require more available mineral matter to exist in the soil than do wheat, corn, &c.; so that when the soil became only partially impoverished, clover and turnips would not thrive, but little ammonia would be supplied for the cereals, and their yield would be so small that the soil could no longer be cultivated with profit; and this while there was still a large amount of the inorganic constituents existing in the soil. Hence, so long as our lands will produce good crops of clover, peas, beans, &c., we may rest assured that there is no lack of available inorganic constituents in the soil for a very large crop of wheat. If, under such circumstances, we obtain by good tillage not more than twenty bushels of wheat per acre, we may safely conclude that all that is required to raise it to thirty-five or forty bushels, is 75 or 100 lbs. of ammonia in any available form. If clover, peas, turnips, &c., do not thrive, the soil is probably deficient in available inorganic matter; and in such circumstances an application of bone dust, superphosphate of lime, unleached and leached ashes, containing as they do the deficient substances, will be attended with much benefit for these crops. These clover and pea crops will in their turn furnish the required ammonia and minerals for the succeeding crops of wheat and corn; and so, in this *indirect manner*, an application of inorganic ingredients is followed by increased yields of the cereal crops. We are aware that there are many well recorded experiments in which ashes, lime, &c., have given greatly increased crops of wheat and corn, yielding, in instances that have come under our own observation, fifty bushels of wheat per acre; yet these instances, however numerous they may be, by no means disprove the correctness of the principles here laid down; they rather, to our view, confirm them.

It is well known that ashes, lime, &c., greatly accelerate the decomposition of organic matter; and that in many of our lands there is much organic matter lying latent in the soil in such a condition that plants can not take it up. An application of lime or ashes to such soils would give vitality to this organic matter; the nascent gases would act on the mineral matter of the soil, and both inorganic and organic matter would be rendered available to the plants. In the instances mentioned where ashes and lime have yielded fifty bushels of wheat per acre, the increase was most undoubtedly dependant, not on the manure supplying the actual inorganic constituents of the wheat plant, but in de-

composing the organic matter of the soil, and thus supplying the required ammonia. The gases eliminated by the action of the alkaline matter would in their nascent state act on the minerals of the soil, changing their composition, rendering them soluble, and in a proper condition for assimilation by the plants. There is nothing, therefore, in the occasional benefit derived from an application of ashes to the wheat crop, that at all militates against our theory.

POTATO CULTURE.

THE following interesting experiments were made by H. H. EASTMAN, of Marshall, Oneida county, N. Y., in consequence of the premium offered by the New York State Agricultural Society. Mr. EASTMAN will continue the experiment next season, and valuable results are anticipated. The experiments are published in full detail in the December number of the *Journal* of the Society, from which we extract the most important results.

The potatoes were planted on the 18th of May, in hills three feet apart each way, one whole potato in each hill. Thirty hills were taken for each experiment. The weight of the potatoes planted was 6 lbs. on each portion, or about 16 bushels per acre. They were hoed twice—once on the 18th of June, and again about a fortnight afterwards. The following are the selected results :

Description of Manure.	Quantity manure used, and how applied.	Bushels of potatoes obtained per acre.
	No manure,	166
Hog manure,	Half shovelful in each hill,	271
Equal quantities of hog manure, ashes, lime, and gypsum,	Handful in each hill,	163
Long unfermented manure,	Two-thirds shovelful in each hill,	208
Compost,	do. do. do.	209
Fermented or rotted manure,	Two-thirds shovelful in each hill,	211
do. do.	do. do. on top of mill,	183
Manure of fowls,	Large handful in each hill,	229
do. do.	do. on top of hill,	174
Ashes,	Handful in each hill,	159
do.	do. on top of hill when up,	146
Lime,	Half handful in each hill,	141
do.	do. when up,	144
Sulphate of lime (gypsum),	Tablespoonful in each hill,	163
do. do.	do. when up,	156
Sulphur,	Teaspoonful to each hill after potatoes up,	116
No sulphur, .....	.....	140
Saltetre, (nitrate of potash),	Teaspoonful to each hill when up,	139
No saltetre, .....	.....	143
Gypsum,	Tablespoonful when up,	156
No gypsum, .....	.....	130

Hog manure applied in the hill gives the largest return—271 bushels, or 105 bushels more than the unmanured lot. This is in accordance with the common opinion among practical farmers, that hog manure is the best of all manures for potatoes.

A large handful of fowl manure applied in each hill gives the next best increase—229 bushels, or 63 bushels more than the no manure lot.

Fermented or rotted manure gave 211 bushels, while unfermented gave but 203 bushels. We must be careful how we reason from this result, for the same quantity

of rotted manure was used as of unfermented, whereas in fermentation the manure was probably reduced one half; so that instead of each receiving the same amount of manure, the hills dressed with the rotted dung got twice as much as those having the raw manure. To make the experiment satisfactory, the hill dressed with the rotted manure should receive no more than what would result from the fermentation of the amount given the hill dressed with the raw dung.

The mixture of hog manure, ashes, lime, and plaster, gives three bushels less than no manure. Such a compound is very well as an experiment, but should on no consideration be adopted in practice. Many farmers we know still adhere to the barbarous custom of mixing lime and unleached ashes with their barnyard manure, and by so doing drive off nearly all the ammonia, thus rendering the manure nearly valueless. For nearly all our cultivated plants ammonia is the most valuable ingredient of a manure; and to thus foolishly expel it, is, to say the least, supremely ridiculous.

The application of ashes, lime, sulphur, and saltpetre, is attended with no benefit.

It has been supposed from the fact that the ash of potatoes contains a large proportion of potash, that potash supplied as manure would be of great value. The above experiments do not sustain this theory. The great benefit attending the application of Peruvian guano (which contains scarcely any potash) to potatoes, is also another fact opposed to this idea. If further experiments corroborate these results, we must conclude, not that potatoes do not require a large amount of potash, but that potash relatively to other constituents is present in the soil in an available condition in sufficient quantity, and that the increase of the potato crop depends on the application of other substances, probably ammonia and phosphates.

DECENNIAL LIMEING.

In our recent travels through Pennsylvania, we received an interesting account of a farm in Lancaster county which has been one hundred years under cultivation, and during the last fifty has been limed every ten years. It was much exhausted when the use of lime was first resorted to for its renovation, but the application of ten bushels per acre developed elements of fertility before unavailable in the growth of agricultural plants. After the lapse of ten years, the good effects of the lime disappeared, and a new dose of ten bushels of caustic lime was again administered to each acre. The soil is a gravelly loam, and now yields thirty bushels of wheat per acre. Clover is grown in rotation with wheat, and either turned under with the plow, or the land is manured with dung formed by the grass and hay consumed by domestic animals.

The fact most interesting to practical farmers, is the great benefit derived from the average application of a bushel of lime per acre per annum for a half century, without intermission. Explain this fact as we may, tens of thousands of the best agriculturists in New Jersey, Pennsylvania, Delaware, and Maryland, periodically apply calcareous matter to renovate their partially impoverished fields. Long and successful experience has taught them the permanent (so far as anything relating to the soil can be permanent) advantages of decennial limeing pastures, meadows, and tilled lands. Some require much more lime to correct all acidity, and decompose the phosphates of iron and alumina, which in that form are worthless to the farmer. Combined with lime, phosphoric acid forms the earthy part of the bones of all animals; and as this acid very often abounds in soils united with iron, or alumina, or both, from which lime extracts it, forming bone-earth, we see why lime operates the same as pulverised bones. It is true that ground bones contain considerable organic matter from which ammonia is formed, which is exceedingly valuable; nevertheless, experience seems to prove that by

growing clover and peas on limed land, the soil may be supplied with the elements of ammonia from the atmosphere, and perhaps in sufficient quantity to produce a good crop of wheat every other year.

How much artificial aid an acre of fair common earth really needs in the course of a century, to maintain its fertility, if constantly under the plow, is the most important problem in husbandry. We have always regarded with suspicion, and as of little value, every theory on this subject. What we contend for is the test of reliable experiments in ordinary farming. Truths thus established will be invaluable to the great farming interest; and, sooner or later, the cultivators of the soil will see and acknowledge the necessity of experimental farms, to determine what amendments, and how much of each, a farmer should use in the production of any crop. Lime is only one substance needful in arated earth; and what is true of it may apply with equal force to potash, magnesia, soda, ammonia, carbon, and chlorine. The comparative cheapness of lime, however, renders its use more general, and its merits are the best known of all mineral manures. For fifty years its consumption for agricultural purposes has steadily increased in this country, and is likely to continue so to do for a century to come.

EDITORIAL CORRESPONDENCE.

FARMING NEAR THE CAPITAL OF THE UNITED STATES.—The District of Columbia has a climate happily exempt from the protracted winters and cold of the North, and the uncomfortable and parching heat of the South. It is the golden mean between extremes, and combines a large share of the advantages regarded by many as peculiar to distant latitudes. Fig trees rarely fail of bringing two crops to full maturity in a year; while every fruit grown in Maine, flourishes, if properly planted and cultivated. Near the federal metropolis, the cotton plant of the South and the timothy grass of the North find their respective boundaries. The same is true of persimmons and cranberries, apples and figs, currants and peanuts, plums and sweet potatoes. In no other climate do the peach, pear, quince and vine, attain a more perfect development. Nature encourages the planter, the farmer, the gardener, and the orchardist, with equal bounty. The record of the rain-gauge, for a half century, shows that injurious drouths are rare indeed; while the thermometer tells of lengthened seasons for the abundant growth of every agricultural staple, and every horticultural luxury.

If the soil were generally rich, the water would be less pure and salubrious, and the country comparatively unhealthy. Happily the land is not over-charged with decaying vegetation. The air, away from stagnant streams, (which are not common,) is remarkably pure, and the water all that can be desired of this important element of universal consumption. Although not fertile, when compared with the soil of the West, the land near Washington is kind, easily cultivated, and very susceptible of permanent improvement. It lacks calcareous matter, and liming is the *sine qua non* with skilful farmers, who wish to bring all their fields into the best possible condition for the application of manure. Sand, clay, and oxides of iron, without sufficient lime, compel the husbandman to waste manure if he would render such earth permanently productive, or even temporarily so. Flint, alumina, and iron, have as strong claim to be called manure, and treated as such, as lime. The former are staple ingredients in all soils, and so is the latter; but calcareous matter is less abundantly diffused in the geological strata which constitute the outer crust of the planet, than compounds of silica, alumina, and iron. There are soils, however, in which soluble silica or flint is deficient; and others that lack either iron or alumina, or both.

To be successful and profitable, farming near the Capital of the United States should be conducted on scientific principles; for the cheapest manure costs now \$50 per ton, which is Peruvian guano. Raw material so expensive, must be worked up with skill and knowledge, or the producer of crops will lose money in the operation. At present, prices are so high that one may buy manure at almost any rate, and realize a profit. Hay is \$30 per ton; milk, 8 cts. a quart; fresh butter, from 30 to 40 cts. a pound; and fresh pork, \$8 per 100 lbs. These prices have operated to bring into the District, and the adjacent, counties in Maryland and Virginia, more immigrants from the North in the last twelve months, than had come in the previous five years. Congress is expending over

\$5,000,000 dollars on the enlargement of the Capitol; the Patent office will have cost \$2,000,000 when completed; and the other public buildings at least \$7,000,000 more. By the Susquehanna railroads (to be completed in a few months) both Rochester and Buffalo will be thirty miles nearer Baltimore than New York; and only eight miles farther from Washington on tide water, than the great commercial metropolis.

The heart of this wonderful Republic has been more neglected, in an agricultural point of view, than any other part of it. Baltimore has a population larger by 30,000 than Boston. Washington contains 50,000 souls, to say nothing of the old cities of Georgetown and Alexandria. The best crop grown is hay; and by going from ten to fifteen miles from the city, fair grass lands may be bought at from five to twenty dollars an acre. The dairy business is capital; and potatoes are seldom worth less than \$1 a bushel. Nine months in the year there is a great demand for cream in Washington, for making ice creams, and farmers get a dollar a gallon for all they can produce. Eggs and poultry are proportionally high. Men born and reared on tobacco plantations, naturally, and perhaps wisely, abstain from engaging in these thousand and one small matters. They understand planting, and it gives them wealth and enjoyment; while the multifarious trade of the northern farmer is to them Greek and Hebrew.

Labor is not high. The writer owns and cultivates a farm in the District, and gives a good hand \$150 a year, who boards himself, but is found a house and firewood. Men who hire by the month or year, and are boarded, get from \$75 to \$125 per annum. Market gardening and fruit growing pay remarkably well near the city. Wood sells at from \$5 to \$6 a cord, and many have bought land so that they make enough on the wood to more than clear the land of all encumbrance. Such bargains are becoming scarce, although some, doubtless, may yet be found up the canal and river. The Chesapeake and Ohio canal is rarely closed a day by ice, and carries a volume of water five feet by fifty; or it is some 60 per cent. larger than the un-enlarged Erie canal.

Oyster shells make the cheapest lime for agricultural purposes, and cost only a cent a bushel in Washington. Stable manure is sold at a dollar a load. Night-soil ought to be all consumed as a fertilizer, but it is scarcely used at all. Gypsum costs from \$3 to \$5 per ton; it is brought as ballast from Boston and Nova Scotia. On land properly treated, clover grows finely. Proper treatment consists in draining where it is needed, in liming and tillage, not forgetting to manure if the land happens to be quite poor. Good clover never grows on a soil that is really exhausted, or naturally sterile.

Excellent crops of wheat and corn have been grown in Montgomery county, north of Washington, in Maryland, and in Fairfax county, in Virginia, during the past season. Corn pays much better than wheat, for the forage obtained in cornstalks, blades and shucks, will sell in market for more than the cost of making the crop. In skillful hands, no other plant is so prolific in food for man and beast as the indigenous Indian corn. The amount of forage that may be raised on an acre is, to the uninitiated, almost incredible. Deep subsoil plowing, liberal manuring, and seeding in drills, present an outline of the system of culture for green feed, or hay, to be consumed by dairy cows. Mr. CHARLES CALVERT, President of the Maryland State Agricultural Society, grows some 30,000 bushels of turnips a year for his milch kine, which are fed with cut straw, hay and corn fodder. Mr. C. is the principal proprietor of the largest hotel in Washington, which he supplies with milk, cream, and garden vegetables. He is the lineal descendant of the first governor of the province of Maryland, by the name of CALVERT, (a near relative of Lord Baltimore,) and his estate contains nearly 3000 acres, having a beautiful mill-stream running over four miles through it. Milk and hay are the leading products sold from this magnificent farm. The dairy consists of improved Short-horns, with a sprinkling of Ayreshires and Alderneys. "Riversdale" is on the railroad to Baltimore, and near Bladensburg. Mr. CALVERT will give 200 acres not far from the railroad stopping place, for an Agricultural College, provided there is public spirit enough in the country to endow one institution of the kind, in a nation of farmers. Of the \$50,000,000 annually paid into the federal treasury by the American people, not over half is really needed for the wise and economical administration of the government. The people know this, and know also that their children greatly need a thorough education; nevertheless, they do not lift a finger to apply the surplus in the treasury to educational purposes.

"Arlington," on the Virginia side of the Potomac, and opposite Washington, is the residence of GEORGE WASHINGTON PARK CURTIS, the adopted son of Gen. WASHINGTON. The farm contains 1100 acres, and its venerable proprietor is one of the Vice Presidents of the United States Agricultural Society, the President of the Alexandria County Society, and the devoted friend of the great farm-

ing interest. Mr. FRANCIS P. BLAIR has a well improved farm, as that of Mr. RIVES, proprietor of the *Washington Globe*, soon will be. We must, however, take another occasion to describe the practice of the best farmers near the Capital of the United States. Suffice it now to say that a spirit of industry and improvement has been awakened, which promises the most auspicious results. Vineyards and extensive orchards are being planted, and the promising commencement of a new order of things is everywhere visible. The Metropolitan Mechanics' Institute will hold its first fair, commencing on the 24th February and extending beyond the 4th of March, in the hall of the east wing of the Patent Office, which is 270 feet long and 70 feet in width. The building for the steam power is already up.

If the farmers and mechanics of the District are true to their own fame, and true to the great classes to which they respectively belong, they will soon lay the foundation of an Industrial University worthy of a self governing people—worthy of the most advanced stage of human progress—and worthy of the brilliant future of this republican empire. The United States Patent Office is now a school of applied sciences, and not a bad one. The Smithsonian Institution offers to the student many, and some peculiar, advantages. All the essential elements of a National University abound in Washington and the District. Let 100 acres be highly cultivated by students, and they may board themselves comfortably at a cost of 75 cts. a week. For such, we have 109 acres near the city, on which are a good stone quarry, three fine and durable springs of water, and oak and chestnut timber enough to cut from 900 to 1000 cords of wood. To overcome the expense of board and bring learning and science near to, or upon the farm, and into the workshop, are objects which the writer has studied and cherished from his childhood. Knowledge of a commanding character, and honest manual labor, are soon to be united in this country. The hope of the world demands the perfect union of the best physical with the best mental training or education of youth. From the sweat of his face man can never be wholly exempt; nor is it possible for universal suffrage to govern wisely in ages to come, without that intellectual culture which science alone confers. King Numbers holds his court at the federal metropolis, and there, of all places should public opinion be in perfect harmony with the highest interests of the farmer and the mechanic. These interests involve something more than dollars and cents, and we can never prostitute either our pen or journal to any mere mercenary considerations. Agriculture is a means, not an end; and it would be well for a person to understand for what good purpose he is living. Not to know this, is to be ignorant indeed. Are we here to scratch the earth a few years, consume its fruits, waste its elements of fertility in cities and villages, and then leave it that another and more numerous generation may do likewise? This is a narrow and unsatisfactory view of humanity. Our capabilities scorn such grovelling companionship with the brute; our rising aspirations seek, and instinctively claim, a nobler destiny; our *duty* exacts not impossibilities, but an earnest and ceaseless effort to leave the world better than we found it.

BRITISH AND AMERICAN AGRICULTURE.

(Continued from Page 17.)

B. I have several times been on the eve of coming up to have a little more talk about the old country, but it has been so remarkably mild for the season, hitherto, that I have been uncommonly busy fixing fences, and making and hanging new gates. There is always plenty of work on a farm, if it is kept in anything like decent order, and such a winter as this gives one a good opportunity of putting things straight and lessening the amount of work necessary in the spring and busy season. I suppose this is some such a winter as they have in England.

A. Up to this time we have indeed had comparatively no winter, and it is a mercy we have not, for such was the scarcity of fodder in many places, last year, that if we have a very severe winter it would be next to impossible for the farmers to winter their cattle. I have let my sheep run out into the meadow, where they find some little grass, sweetened by the frost, which they eat and do first rate. This is very similar to what last winter was in England. It did not freeze hard enough for the water to bear, more than three times all the while I was there, and then it did not last but a few days. The English appear to be remarkably fond of skating, and make the best use of what little falls to their share. I recollect one morning while in London, when the water would bear—

and but barely bear—the cockneys turned out in thousands to skate on the “sarpentine” in Hyde Park. The ice broke in several places, but there were plenty of police on hand, and though many were well ducked none were drowned, and the rest kept on, men, women and children, playing various games and enjoying themselves first rate, apparently thinking nothing of the risk they ran of taking a cold bath or of finding a watery grave.

B. Well, I much prefer our ordinary old fashioned eastern winters with three or four months steady sleighing, to this miserable, muddy, misanthropic weather, even if it is English.

A. The English farmers dearly love a hard winter. They are in the habit of plowing their land in the fall and throwing it up into ridges, so as to have as much surface as possible exposed to the meliorating influence of frost. If they get some good hard frosts, most of the worms are destroyed, the growth of weeds is checked, and the land works well in the spring, which is often not the case when they have a very open winter.

B. I suppose they plow at intervals, when the weather will permit, all through the winter months.

A. Some farmers are in the habit of doing so, but the most intelligent do not. They think it is advisable to stir the soil only when it is in a fit condition. If plowed during the winter, when the land is wet, it is always, as they express it, “unkind” in the spring and requires much more labor to bring it to a fine tilth. Some farmers were even beginning to doubt the economy of plowing their light turnip soils at all in the fall. A farmer with whom I spent some time, in Shropshire, directed my attention to a portion of a field of turnips that looked much superior to the turnips adjoining. On inquiring the reason for this difference, he said they had all been treated alike, except that the part which looked the best was not “pin-fallowed”—fall plowed. He thought that the fall plowing had not only injured the crop, but that the land required more working in the spring than that which lay untouched during winter. It was the custom of the country, however, to fall plow, and his landlord would think him a very slovenly farmer if he did not fall plow. From what he said I gathered that this was his greatest reason for working his sandy soil during winter. Oh, preserve us from a large land-owning gentry and their old foggy lawyer agents. They are the curse of “merrie England.” But free trade is gradually undermining this and other institutions, and slowly reforming some of their more glaring abuses.

B. I think fall plowing of heavy clayey soils is a good practice, and attended with many advantages; but though it is sometimes convenient to fall plow light soil for corn, I think it is not to be generally recommended. It is getting quite common with many farmers to fall plow all their land for hoed crops.

A. I think we do not suffer so much from washing during winter in the North-Eastern States as they do in England. There the land is not frozen, and a continued washing goes on all winter. With us the land is locked up with frost and is not washed at all till the frost goes, and then a greater part of the winter's fall of water passes off before the soil thaws. So that I do not think fall plowing light soils so injurious with us as with the English farmer.

B. I suppose the English farmers use lime as a manure, to a very great extent.

A. I was told that not a tithé as much was used now as ten or fifteen years ago. The introduction of guano and of superphosphate of lime, revolutionised English farming in this particular as well as in many others. Many old fashioned farmers still lime, as formerly, but the practice is generally abandoned. Lime costs much more than guano, and is not apparently so beneficial, tho' probably more lasting.

B. I thought lime was very cheap there and did not cost anything like so much as guano and artificial manures, and that the use of lime and the practice of under-draining were the great causes of England's superior farming.

A. That is probably true to a certain extent, yet it is doubtless true that the use of lime as a direct manure is not so extensive as formerly. Lime is nearly as high there as here, and as they use from 150 to 300 bush. per acre, and as it takes considerable labor to cart and spread it on the land, you can see that it is a very expensive manure.

B. Why do they apply such large quantities at once. I should think smaller doses, oftener repeated, would be better economy.

A. Several good farmers told me they had found by experience that it did not pay to apply less than 150 bush. per acre; land once limed did not require it again for 20 years. Thirty bushels of wheat do not contain more than a pound of lime. A bushel of lime would certainly supply all

that a very large crop would require, so that the benefit of lime appears to be from other reasons than that of supplying the crop with its constituent lime.

B. To what do you think the value of lime in agriculture is owing? I have always supposed that the superior wheat-producing qualities of Western New York lands were owing to the large amount of lime they contain; and that the reason why the eastern counties of the State were not so well adapted for wheat, was because they contained so little lime.

A. I am not much of a chemist, though I have read all the works on agricultural chemistry that I have met with. There appears to be a great difference of opinion as to the cause of the good effects of lime on the soil. Some think that it is owing to supplying an actual and indispensable ingredient in all our cultivated plants. But, as I have said before, if this is the reason, it is foolish to apply such large quantities, a bushel an acre being amply sufficient for any crop. Others think it is owing to the fact that lime, when mixed with soil, renders the potash which it contains soluble and immediately available to the plants. Others, again, think that the value of lime is chiefly owing to its rendering the organic matter of the soil—especially the nitrogen—readily available as food for plants, and therefore say that it is useless to lime land that has been exhausted of organic matter by long cultivation and tillage. Which of these various theories are right, I do not know, but am inclined to think that all of them are more or less true; that lime in itself furnishes food for plants, and that it renders the potash and ammonia of the soil immediately available. It is also of great use on soils, containing sulphate of iron (green vitriol) which is injurious to vegetation; the lime decomposes this salt and renders it innocuous.

B. I had no idea that the reasons for applying lime to land were so many and various. This part of agricultural science alone appears to be a subject for deep study and investigation. For my own part, I know very little about chemistry, except what I read in the *Genesee Farmer* and other agricultural papers. I suppose the English farmers are well posted up in rural science.

A. As a general thing English farmers know less about science than we do: nine-tenths of them do not take any agricultural paper at all. There are but three or four agricultural papers published in the country, and they have but a very limited circulation. The lowest price of an agricultural paper is \$5 a year. I believe the *Genesee Farmer* has a much greater circulation than all the English agricultural papers put together, and I think it would pay some of our enterprising publishers to go there and start a cheap monthly paper. England has more and abler scientific men, more wealthy, educated gentlemen, who give their attention to rural science, and who make experiments and endeavor to search out the hidden principles of agriculture, than we have; but for the number and proportion of intelligent, industrious, enterprising farmers, we are ahead of any nation I have visited. We know far more of any discoveries that are made in England than do the English themselves. If anything sufficiently important is discovered, a Collins steamer will bring it across the ocean in a little over a week, and the electric wires will convey it from one end of this great continent to the other in a few seconds. Our innumerable presses deal it out to their millions of readers, and thus it is known and acted on here before more than a few learned individuals are aware of the affair in Great Britain. This is neither imagination nor exaggeration: it is literal fact. We know everything that transpires in England; the English know little or nothing of what is invented or done here. Look at the excitement caused by the appearance of the American Reaper in England, after it had been in successful use here for years and had got to be quite an old story. Then again, our dirt scraper, or, as the English called it, the "American Horse-Shovel," was equally new and valuable to them. At one of the monthly meetings of the Royal Agricultural Society, Lord Clive, and several other eminent agriculturists, alluded to this great invention, with highly commendatory remarks.

B. How do they level down banks and throw up roads, &c.

A. Either with wheel-barrows or lifting-carts drawn usually with two horses tandem. For a distance, those carts are probably better than our lumber-waggons: but for a few rods, it is an expensive practice.

B. I suppose carts are very common there. The Englishman I have working for me was wishing a short time since, when I was drawing out some manure, that we had some English carts. He said we could do it in half the time.

A. For drawing manure, and a few other purposes, carts are doubtless better than wagons; but before we can use carts to advantage, we must have a heavier breed of farm horses, for a light horse cuts a sorry figure in the thills of a large cart.

FIRST EFFORTS AT FARMING—MY FIRST CROP OF CORN.—I became a subscriber to the *Genesee Farmer* about eight years ago, and from that time read with increasing interest each successive number, until a strong desire to engage in practical farming was gratified in the purchase of a small farm situated two and a half miles south of the village of Middleport, Niagara Co. I moved my family and effects to the premises in April last, (1852,) and prepared to commence the practice of farming, as a student, of course, and a boss from necessity. My help consisted of a son about sixteen years of age, and a hired man who was as green as the island he came from.

The neighbors and experienced farmers of my acquaintance, as might have been expected, looked upon the success of such an attempt at farming, under such circumstances, as extremely doubtful. And I confess I was haunted by misgivings as to my ability to conduct the multifarious operations necessary to a favorable result. But having joined issue I determined to prosecute the trial to judgment. Entirely destitute of practical experience, my dependence rested upon what theoretical knowledge I had gleaned from the pages of the *Farmer*, the *Cultivator*, and a few other agricultural publications. It will readily be seen, therefore, that with whatever success my effort may have been attended, the credit is justly due to that hackneyed phrase, "book farming." I had carefully preserved all the numbers of the *Farmer*, and the *Cultivator*, and had them bound in separate volumes, constituting a fund of invaluable information from which I might be enabled to draw instruction, whenever embarrassed, (as I often have been,) in conducting the intricate and ever-varying operations of the farm.

Thus circumstanced, I commenced my operations upon a field of three acres, which had been seeded with clover and mown the previous year. The soil is a loam mixed slightly with clay, which had been much exhausted by excessive cropping. Upon this I spread twenty two-horse wagon loads of raw yard manure to the acre. I then proposed to invert the surface by the use of a three-horse power attached to one of VAN BROOKLIN'S No. 10 Plows (which, by the way, I think is a very efficient instrument). But here were difficulties which had to be met and overcome—adjusting the power in the proper manner, gauging the plow to the desired width and depth of furrow, placing the wheel and attaching the coulter at its place and requisite angle. In experienced hands these are trifles; but to a novice, somewhat formidable. However, after some little vexatious delay, I was enabled to put my power and apparatus in motion, and made a cut through the field about twelve inches wide by eight deep, and, after a few rather unsteady revolutions, I got the power and machinery so well under control, that in the course of about three days I succeeded in inverting the surface of the whole field nearly to my satisfaction. I then made free use of the roller and drag, until the ground was in a suitable condition to receive the seed. Next, with horses and wagon, I cleared the surface stone—an operation indispensable if a corn cultivator is to be used in tilling the crop. The field was then furrowed three and a half feet apart, with a corn plow, and marked at right angles three feet distant. The barnyard was then scraped and a shovelful of its contents deposited at the angles of marks and furrows. Next, my vault of night-soil was emptied and thoroughly incorporated with four times its bulk of dry dust from the middle of the highway, and well-rotted chips. This dust is a grand absorbent and a good deodorizer, and being so finely pulverized is in first rate condition for the use of plants; it should be secured in a dry time and at the middle of the day. A half shovelful of this compost was deposited in the same manner and adjoining the yard scrapings. The aviary was then cleared of domestic guano and composted in the same manner as the night soil, and a half shovelful deposited at the angle adjoining. And lastly, the pig-pen contribution was turned over and an equal quantity of surface loam and rotten chips added, and a shovelful deposited at each angle adjoining the domestic guano compost.

Twelve-row Dutton corn was planted from 17th to 31st of May, care being taken to move the manure in the center so as to drop the kernels to the soil, and then both corn and manure well covered with mellow earth. I would here observe that it took at the rate of twelve two-horse wagon loads to the acre, where a whole shovelful was deposited at each angle as above stated. Being ignorant of the quantity required to treat each hill in this manner, I fell short and was enabled to prepare only two of the three acres in this way, the third acre receiving only the raw manure turned under.

As soon as the rows could be fairly seen, RUGGLES, NOURSE & MASON'S most excellent corn cultivator was run twice in a row both ways, which operation was repeated at the first and second hoeing, at both of which the corn was slightly hilled. No further attention was given until cut, drawn off, and stocked—the 13th of September. While growing, no perceptible difference was manifest upon the two acres manured in the hill with the various kinds mentioned. In the early part of the sea-

son, the third acre, treated only with raw manure, looked poorly. For fear of a failure, I planted white beans in each alternate row, but later it came forward, and at husking gave 80 bush. of ears and 5 bush. of white beans. The two acres gave a trifle over 320 bush., or at the rate of 80 bush. of shelled corn to the acre. Now I do not claim that this is an astonishing yield, but to me it is quite satisfactory, and the operation has demonstrated to my mind the following facts:

1. That yard scrapings is a good manure for corn.
2. That either night soil or domestic guano, as compared with yard scrapings or cattle manure, bulk for bulk, is worth, for a like purpose, eight times as much; and that hog manure, compared as above, is worth at least twice as much. And
3. Two facts made manifest, although personal, perhaps, in some measure, I will venture to mention. I have found that the yield of my neighbors' corn has not exceeded my own; and that a little knowledge of farming gained from books is not wholly useless. GEORGE W. GAGE.—*Middleport, N. Y.*

MEXICAN POTATOES.—The Mexican wild potatoes, which have been cultivated by Mr. A. HALE, of Alloway, and first offered for sale last spring, have done extremely well in this region. Most of them were planted on light soil, without manure, but have yielded very abundantly and maintained that pearly whiteness and mealiness which make them so desirable. I do not know of a single farmer who does not intend to plant double or three-fold the amount planted last year. I have seen only one lot where they were manured in the hill, and they did not have quite as smooth skin as those planted without manure, but have exhibited no signs of rot. Mr. HOFFMAN, who lives a few miles south of this village, planted one bushel and a half, and dug fifty-seven bushels; Mr. GEER planted one bushel, and gathered thirty-seven; two other gentlemen planted two bushels, and dug over one hundred; Mr. BRAYDEN gathered thirty bushels from one-half bushel planted. As near as I can ascertain, they have averaged fifty bushels for every one planted. When properly cooked, they resemble, in flavor and appearance, the White Carter potato, as I used to find it in the mountains of N. E. fifteen years ago.

The four potatoes originally planted by Mr. HALE, were about the size and length of a man's thumb; now many of them are six or seven inches long and about the same in circumference. Should they do as well in other localities as they have done here, this variety will prove a valuable acquisition to our vegetable stock. They have the smallest vines of any potato I have ever seen.

A paper was read before the Academy of Science, in Paris, France, on the 3d of May, by M. DECANOLLE, describing a new potato which some farmers of Ain had procured from Mexico, and had cultivated for two years. The exterior resembled Mr. HALE's Mexican, but the inside was "intensely yellow." They were found to have an excellent flavor, and had not rotted. SYLVESTER.—*Lyons, N. Y.*

GOOD HOGS.—I wish you would give us more information in relation to the best breeds of hogs. This is a branch of the farmer's business that might be made to pay well, but it is at present too much neglected.

I have for several years kept a breeding sow. In March, 1852, she had a litter of eleven pigs, ten of which were sold, when six weeks old, to ten different individuals, all mechanics. The average age of these hogs when butchered, was eight months; their aggregate weight was 3797 lbs., or 345 lbs. each. The largest weighed 403 lbs.; the smallest, 300 lbs. I have looked in vain to find some statement in the papers to match this, but have not yet found any. I would now say, farmers beat this. G. W. GILBERT.—*Plymouth Hollow, Ct.*

As you gave in the last *Farmer* an engraving of some beautiful hogs, I must tell you of some pigs in my neighborhood. Mr. WILLIAM STEBBINS has a sow that had a litter of ten pigs on the 20th of last April. One was butchered when about six months old, and weighed when dressed 170 lbs.; two were killed when 7 months and 9 days old, and weighed when dressed 389 lbs.; one, 8 months old, weighed 258 lbs.; six, butchered Dec. 29th, when 8 months and 9 days old, weighed, when dressed, respectively 260, 258, 248, 244, 215, and 209 lbs. I cannot tell what breed the above pigs were, but the sow has a small mixture of grass breed. The pigs were fed no grain until the 1st of October. They were fed principally on milk, and some of them did not have enough of that through August and September. J. RANDALL.—*Masonville, Del. Co., N. Y.*

POTATO DISEASE.—Last year we determined to do our utmost to produce a crop of sound potatoes. On examining the *Farmer*, we fixed upon Prof. FRESSENIER's plan as our mode. The position and quality of the ground was not what we desired; the soil was quite heavy, clay preponderating, with a considerable southern inclination; land much worn. On the 8th of May we plowed and harrowed it three or four times. We made the furrows for rows thirty inches apart. In six of these, we put a shovelful of rotten barnyard manure in each hill, about thirty inches apart; the balance of the manure was put on top of the hills as soon as planted. We planted a little over a bushel of seed on an eighth of an acre. In each hill we put a tea-spoonful of the composition recommended by the Professor, except of ashes. We took the quantity suggested by you—200 bushels to the acre. A heavy shower washed away about one-fifth of them, which we gathered and re-planted. Of sixteen rows, about two were wanting. We plowed, hoed, and kept them clean. Sometime in August the potato-bug came, and we (six in number) spent two half days in stamping and crushing them. About the 1st of September a part, that were then growing vigorously, all at once looked as if the frost had hurt them. My wife feared the rot was the cause, but I had so much confidence in the mode prescribed by the Professor, I could not believe the rot could effect them. However, a few days more and one-fourth were found affected. We dug them, fed the affected ones to the hogs, and eat away as hard as we could. We now have but a few bushels left of about thirty-five. The yield was about 260 bushels to the acre,—quite good. I do not believe any remedy can be found for the evil. New sandy land with a northern inclination, seems best adapted; but I have recently found three cases on which the rot, even on such localities, did injury. Sound seed, land strongly silicious, in a dry situation, and new or fresh, with early planting and digging, seems to be the best we can do.

We had much trouble in this section to raise corn. The last winter was so severe that it killed the vitality of the germ. The first part of the season was too wet, and about earing time, too dry; yet the crop was middling, and in the river bottom, good. From six acres we raised about 200 bu., but we had everything adverse to contend with. Never did so much work for the same quantity of corn. The wheat was much hurt, while in the milky state, by the red insect. For this, I fear no preventive can ever be found. ABRAHAM BAER.—*West Carlisle, Cosh. Co., Ohio*,

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LARGE PIG OF HIS AGE.—At the request of my friends, I offer the following for publication in your valuable paper:

This pig was one of a litter farrowed on the 10th of last March, and killed on the last day of the year, making him nine months and twenty-one days old. His weight was 432 lbs., exclusive of 18 lbs. of lard taken from the intestines; which shows, in pork and lard, an average of over 1½ lbs. per day. His food has been a mixture of corn, barley, buckwheat meal, (unfermented,) with sour milk. I still keep the mother of our *hero* as a brood animal, being now in the prime of life—being five years old the past autumn. She has had ninety pigs, at eight litters. She is a grade Berkshire, of small bone. R. R. COLLINS.—*Morris, Otsego Co., N. Y.*

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CELERY.—Two years since I cultivated my celery with home made superphosphate of lime, and the flavor was much improved, though not growing as large as I could wish. This year I cultivated it with gein liquor, (swamp muck and ashes soaked in water—See Dr. DANA's muck manure,) and have succeeded better than ever before. The celery has over two feet of branch, is stocky, and of the most delicate flavor. Let those who love this luxury try gein, and I think they will not raise any more manure-flavored celery. SYLVESTER.—*Lyons, N. Y.*

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VEGETABLE POISON.—I sent you a remedy for vegetable poison, some months ago, which was considered very excellent. I have discovered another, which is exceedingly valuable and ought to be universally known; it is simply the frequent application of Sweet or Olive oil. It has been of very great service to me for a few months past. ETHAN S. FOX.—*Athens, N. Y.*

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A CURE FOR SCRATCHES ON HORSES.—Take white or red lead, mix it with oil, and rub it a few times on the part diseased, and a cure will be effected. The scurf should be washed off clean every day with warm soap suds, and the lead thoroughly rubbed in. A couple of spoonfuls of sulphur given to the horse twice a week, will be of service to him. I have found this to cure when everything else failed. W. H. CHATTERTON.—*Beekmantown, N. Y.*

THE MATCHLESS COW.—Believing, for a year past, that I have a cow possessing extraordinary qualities for milk, butter, and stock, I resolved on giving a short history of her productions: The cow is of the native stock, large, perfect in form, and is seven years old. On the 23d of March she cast a pair of calves, male and female; they had all the milk of the cow for three months, except what was wanted in the family. From that time to the present, (January 10th,) we have made 280 lbs. of butter, besides supplying a family of four persons with buttermilk and cream, of which no account has been kept. We make from seven to nine pounds per week at this time, besides supplying the family. The cow has had no other food but good pasture and hay. She gave, in the leafy month of June, from 65 to 70 lbs. of milk per day for several days in succession, from which were made $3\frac{1}{2}$ lbs. of butter per day. This is the cow that produced the famous native steer, weighing, when just two years old, 1865 lbs. The twins are large and fine, and will weigh 1150 lbs. If any one can beat this, I should like to hear from them. S. N. FRANKLIN.

HEAVY OATS.—This day I was shown oats, of which two bushels, fair measure, weighed *ninety-nine pounds*. Can any Genesee Valley farmers produce oats that will beat this? N. NORTH.—*Ancaster, C. W.*

THE STRUCTURAL FORMATION OF VARIOUS BREEDS OF CATTLE.

(CONDENSED FROM THE NORTH BRITISH AGRICULTURIST.)

THE Ayrshire BREED.—The milk-producing breeds of cattle are more widely diffused than the flesh-producing ones. Much of the soil in this country (Scotland) is naturally so inferior, or is kept in such poor condition, that the herbage is inadequate to sustain, profitably, the fat-secreting breeds; hence those breeds which yield a return in the form of butter and cheese, are preferred to those which require richer pastures. Among the many valuable breeds for the dairy, the Ayrshire takes a prominent place; and, as a milk-producing breed, is inferior only to the Alderney. By some it is considered equal—by most dairy farmers in Scotland even superior. When the butyraceous deposit is stopped by the cows becoming dry, they are easily fattened. Oxen of the Ayrshire breed, when well fed in youth, grow to good weights at two and a half to three years old. If crossed with the Short-horn, they are valuable animals for the grazier. The Ayrshire breed, for these qualities, is therefore more widely spread over the country than any other.

The origin of this valuable breed can not now be traced. It would appear to be the result of a cross of the West Highland with some less hardy breed. This breed has, we believe, within these few years, slightly deteriorated, having become more delicate in constitution. This is not willingly admitted by breeders, but we think there is no doubt of the fact. Probably this delicacy of constitution can be traced to the change of form produced by breeding in-and-in, as many of the most esteemed herds have a close affinity with one another, and many breeders never introduce a change into their stock. The breeding of them simply for their milk-secreting qualities has produced a smaller animal, with a somewhat contracted chest, and enlarged pelvis. The bull is selected more from being the calf of a good milker than from symmetry of form, or pedigree—indeed, the last appears to be little regarded. The quey calves of the best milkers are also reared to supply the place of their dams; hence the milk-secreting powers are propagated more by hereditary qualities, than either by selection of animals from particular herds, or the selecting of animals of a peculiar formation. There are, however, certain forms indicative of certain qualities, which are so far a guide in judging of such milk-producing breeds as the Ayrshire; and these should be more carefully studied by breeders in general.

Lately a gentleman named FRANCOIS GUENON, a Frenchman, professed to have found by close observation that certain distinguishing marks were unailing signs of quantity, quality of milk, and the period a cow would retain her milk-giving qualities after calving. The subject was taken up by several agricultural societies in France, and opinions pronounced highly favorable to the theory. We can not, without a series of cuts, explain the distinguishing marks; but they are such as are commonly observed by those who come in close contact with dairy stock. We have seen both keepers of cows, as well as dairymaids, point out nearly the same signs which M. GUENON has done, in judging the milk-giving qualities of an animal with which they were not familiar.

We will, in proceeding to describe the most prominent features of the best kind of cattle

for producing milk, confine ourselves to the Ayrshire, as these are the only breed in Scotland that are reared principally for their power of secreting the lactic fluid. The particular points in the structural formation can be understood by those having a knowledge of stock, without giving cuts. To those who do not understand stock, we refer them to the cuts previously given in describing the Short-horns. (See January number, pp. 18, 20.)

The head of both male and female should be small, rather long, and tapering toward the muzzle, which should be *darker* than the color of the skin. The eye large, lively, but not too prominent. In both bull and cow the jaw-bone should be strong, and open behind, to admit of the throat being fully developed where it passes from the head into the neck. The horns should be small, clean, crooked, and placed at considerable distance from one another at the setting on. The ears rather large, and orange tipped in the inside. The neck long, slender, tapering towards the head, and having the appearance of hollowness; the skin and throat loosely attached to the lower part of the neck. The point of the wither or shoulder should be thin. The shoulder blades should be close above, with a very slight covering of muscle. They should be developed outwards to the point of the shoulders, and should appear to the eye as detached from the structure of the chest. The chest, fore quarters, and neck should be light. The hind quarters large, and somewhat heavy. The back should be straight, gradually widening from the point of the shoulders toward the hook bones. These should be wide, raised at the points, and presenting a somewhat scraggy look. The ribs toward the pelvis should be wide and circular. These, with the joints, should appear open. The carcass should gradually deepen towards the hind quarters, and these should be deep. The length of quarters should exceed the breadth between the hocks. Dairy stock can scarcely be too long in the quarters. The quarters with the pelvis should be roomy—the buttocks should be square, and somewhat fleshy—the distance between the top of the tail and the hock joints should be extreme. The hock joints should be broad, as well as the legs above and beneath these joints. The legs should be short, somewhat delicately formed at the joints as well as at the fetlocks, and the animal should appear short-legged. The feet should be round, somewhat large, and strong. The tail should be set on rather at a curve than at right angles. It should be long, tapering towards the point, and the quantity of hair at the point should be moderate. The form of the milk vessel is of paramount importance. It can scarcely be too capacious. It should be placed well forward on the belly, and appear behind the line of the thighs. It should have a somewhat square form, but not low, heavy, nor loose, nor fleshy. The color of the udder is by some also deemed of great importance. It should be rather white than brown, except the color of the skin be wholly brown or black. The milk veins should be large and prominent. The teats should be placed wide apart, rather small, and pointing outwards. Next in importance to the form of the udder, is the touch. The skin should be thin, having the soft feel of a fine kid glove. The hair should be soft, and somewhat woolly. The color should be distinct; dark red, or approaching to black, are both fashionable. The colors, if two, should be arranged in blots or small patches; light fawns are not uncommon, but are not deemed hardy; some are beautifully spotted with red on a white ground. The very light colors approaching to white are objectionable. A dash of the Alderney, as well as of the West Highlander, can sometimes be discerned, particularly in the color of the best Ayrshires; but the breed as a whole presents a characteristic distinctness of colors as well as of form. The form wants that symmetry which distinguishes the Short-horn, being more lengthy and less proportional. They are, as a breed, constitutionally much more restless and excitable than the Short-horn, approaching more to the West Highlander. The eye, although lively, should be expressive of quietness and placidity of temper; an irritability of temper being a not uncommon defect in the Ayrshire; the bulls in some districts becoming dangerous. This defect is believed by some to be confined to particular localities, and connected in some degree with the soil. The animal, when walking, should have a gay and somewhat jaunty appearance, and present all the signs of a healthy constitution. This latter point has been too much overlooked in judging of Ayrshire stock. The animals are what is termed drawn too fine; hence the great tendency to chest diseases in this breed.

It is perhaps unnecessary to arrange the different points as we did in the case of the Short-horns. Pedigree is, as we previously stated, little attended to in this breed. The bull, if in fair condition, should have an equal covering of fatty flesh all over the body, every part of it being clothed as it were with flesh. The skin soft, with the hair silky to the touch; and although he should be less feminine in appearance than a cow, he should not be too masculine looking. The muscles of both sexes, particularly the female, should be somewhat slender. These will be best observed along the neck.

The young of both sexes should be judged of in the same manner as the matured animals. In the heifer, the udder should be somewhat prominently developed; the skin of it being loose behind, and showing a capability of stretching.

The system followed in rearing Ayrshires is rather to stint them in growth when young, pinching them in food, and exposing them to inclement weather. They are, therefore, small in size, and the skin, from the old hair remaining till a late period of the season, has generally a furry, mossy appearance, up till the middle of summer.

In judging of dairy stock, the first point is unquestionably the form of the udder; the second, the touch; the third, the upper pointing of the hooks; the fourth, the length of



AYRSHIRE BULL "DUNDEE II."
THE PROPERTY OF E. P. PRENTICE MOUNT HOPE. WINNER OF THE FIRST PRIZE, AS A ONE YEAR OLD AT ROCHESTER, 1851.

quarters; the fifth, roominess of the pelvis; the sixth, arching of the short ribs. The eye, size of jaw-bone, the form of neck, color, &c., following the other points in somewhat the same order as in the Short-horn. The medium size is usually preferred. The breed, as a whole, is diminished in size, from the system of rearing to which we have previously alluded. Full feeding the stock when young is known to injure their milk-secreting qualities, and is therefore generally carefully avoided.

Horticultural Department.

CONDUCTED BY P. BARRY.

TREE PLANTERS AND NURSERYMEN.

THERE is one point about nursery trees, that gives rise occasionally to considerable discussion between the buyers and sellers, and it has occurred to us that it might be well to offer a few remarks on it at this time. We allude to the dissatisfaction and disappointment that purchasers experience on receiving from the nursery trees of a somewhat crooked or irregular growth, or of smaller size than they had expected. We are very well aware that it is not a little aggravating to receive trees of four feet in height, instead of six or eight, as expected; or to get them with stems curved and twisted in half a dozen different ways, instead of being as straight as a gun barrel. To the amateur who intends to make but a small plantation, and desires every tree to be a model, this is particularly provoking; and in his trouble, unless he be as patient as Job, he reproaches the poor nurseryman most severely. Now we are not about to plead the case of the nurserymen; they must take care of themselves. They are, we know very well, often much to blame, and deserve reproach; but they are not unfrequently censured without good reason; and if those who purchase trees would study beforehand the characters of the varieties selected, as to growth, they would not so often be disappointed.

Now we will suppose, for instance, that Mr. A. orders from his nurseryman a dozen apple trees, as follows: *Early Joe*, *Summer Rose*, *American Summer Pearmain*, *Fall Pippin*, *Gravenstein*, *Porter*, *Baldwin*, *Fameuse*, *Northern Spy*, *Newtown Pippin*, *Melon*, and *Red Canada*; and that these trees are to be, we will say, three years old from the bud or graft. We would find that the *Gravenstein*, *Baldwin*, *Fall Pippin*, *Fameuse*, and *Northern Spy*, which are strong, rapid growers, are large, thrifty, beautiful trees; while the others, which are remarkably slow growers, are not more than half as large, and will be pronounced small, scrubby, stunted things, not fit to be seen, much less planted. A *Baldwin*, *Gravenstein*, or *Northern Spy*, will be larger in the same soil and under the same culture, in three years than a *Red Canada* or a *Newtown Pippin* in five: and at any size, their stout shoots, straight trunk, and smooth clean bark, are pleasing to the eye; while the slender, twiggy, rough-barked trees, are just the reverse. These considerations should be taken into account. The nurseryman is paid no more for the slow growers than he is for the rapid growers, and it is not reasonable to expect them so large or so vigorous looking. Then there are varieties, such as the *R. I. Greening* and *Fall Pippin*, of irregular growth, with very seldom a straight stem, that it is quite unreasonable to expect as symmetrical as a *Baldwin* or a *Northern Spy*.

If we turn to pears, we find these remarks equally applicable. If Mr. A. will order from his nurseryman the *Bartlett*, *Seckel*, *Buffam*, *Duchess d'Angouleme*, *Marie Louise*, and *Winter Nelis*, he will find a marked and perhaps to him a very disagreeable contrast in their size and form. The *Buffam* and *Duchess* may be eight feet high, thrifty, and smooth as young willows; the *Bartlett* not over five feet, and the *Seckel* four; while the *Marie Louise* and *Winter Nelis* will not only be small, but twisted into the most fantastic and untree-like shapes. Looking at the *Buffam* and the *Duchess*, he will at once say, "Now these are what I call trees—just what I wanted; but these," turning to poor *Marie Louise* and *Winter Nelis*, "these are horrible." The nurseryman, who perhaps searched up and down every row in his nursery to get the straightest and best ones to please Mr. A., who is very nice, is sure to get not less than two pages of a

scold; and not only that, he must lose a part of his bill and ever after the trade of one whom he hoped would be a good customer.

Turn again to cherries, and we find the same sources of disappointment. Mr. A. wants half a dozen cherry trees—tall, handsome, well-shaped trees, of uniform size and shape; as he intends them for ornament as well as fruit. Well, he orders *Black Tartarian*, *Yellow Spanish*, *Napoleon Bigarreau*, *May Duke*, *Belle de Choisy*, and *Belle Magnifique*—all first rate cherries; but unfortunately, when they are received, the *Belle de Choisy* and *Magnifique* are mere dwarfs beside the majestic *Black Tartarians* and *Napoleons*. He then regrets he ordered them, and blames the nurseryman for not knowing better than to send them.

So with plums. No one need expect to get *Green Gages* and *Jeffersons* of uniform size with *Imperial Gages*, *Smith's Orleans*, or *Magnum Bonums*. If they do, they will generally be disappointed.

Those who regard the size and shape of their trees as of the *first* importance, must not be very tenacious about varieties; and, on the contrary, those who place *quality* first, must be less difficult to please as to size and form. The reasons are obvious. There are certain requisites, however, which purchasers have a right to demand from the nurseryman under all circumstances. These are—1st, That trees be sound and thrifty, stout in proportion to their height, and supplied with an abundance of healthy, unmutilated roots. 2d, That the varieties be genuine. 3d, That they be packed and prepared for transportation with the greatest possible care and skill. The purchaser who fixes his mind upon mere *size*, forgetful of these, stands in his own light; and will, if he lives long enough, find out his mistake.

Would it not be well for nurserymen to indicate, or arrange in separate classes, slow growers and those of a very irregular or crooked growth?

We throw out these hints for the purpose of drawing attention to a matter that, as long as we can remember, has been productive of disappointment and no little unpleasant feeling that might just as well be avoided.

CULTURE OF FOREIGN GRAPES IN COLD VINERIES.*

BY H. L. SUYDAM, GENEVA, N. Y.

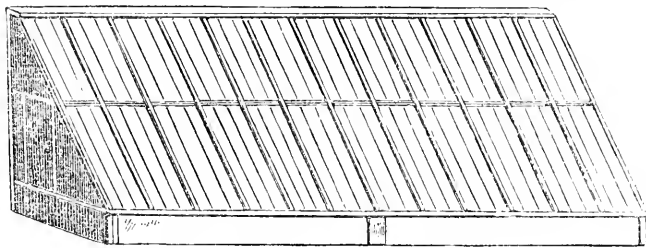
[We commend the following article to the special attention of amateurs, as the plain, straight forward statement of an amateur cultivator who has been eminently successful in this branch of culture. We know Mr. SUYDAM well, and can vouch for the honesty and accuracy of all he has said in regard to his management or its results. It will be remembered that at our State shows he has carried off the highest prizes even from professional growers. His grapes have always been remarkably well colored, excelling more particularly in this than any other point of merit. The material of the vine border accounts for this in a great measure. Instead of *dead carcasses, offal, &c.*, Mr. SUYDAM has laid a thorough foundation of *bones, charcoal, shells, cinders, and well decomposed manure*; and these are the very materials to yield a healthy, firm, well ripened wood, and sound, well colored, and finely flavored grapes. We hope his success will, as he says, "induce others to try."—Ed.]

IN compliance with the wishes of very many inquirers, I undertake to give to the public, through your columns, the plan of my vinery, and my mode of cultivating the foreign grape under glass. I will enter upon my duty, then, at once, by saying that I claim nothing new or original in my mode; I have taken some from one and some

* From the Geneva Courier.

from another of the very many writers on the grape; and as I have had very good success thus far, I shall feel it a great pleasure if I may but make this statement so simple as to induce others to try the same for themselves.

My vinery has a free open exposure to the south, being what is called a "lean-to" house, built against the south side of my barn.* It is thirty feet long, twelve feet high on the back wall and one foot in front, an eight-inch timber resting on three



A LEAN-TO COLD VINERY. SCALE ONE INCH TO TEN FEET.

brick piers in front for the rafters to rest upon, and fourteen feet wide. The ends are of $1\frac{1}{4}$ -inch stuff matched, put together tight and double, and filled in with tan bark, to keep the house as warm as possible. The door may be in either end, there being no fire used. The sashes are in two lengths, the upper ones to slide easily over the bottom ones, so that the house may be easily aired at any time, and made according to DOWNING. (*Fruits and Fruit Trees of America*, p. 226.)

I have a hoghead sunk in one corner of the house, to catch the water from my barn, with a small force pump and hose attached, with which I can sprinkle the house thoroughly in a very short time; for it is of the utmost importance to keep the house moist during the growing season.

The border extends over the whole of the inside of the house, and runs twelve feet outside in front; being thirty feet by twenty-six, and two feet eight inches deep. The dirt is first removed to the depth of two feet eight inches; then filled up eight inches with broken bricks, stones, and lime rubbish, so as to form a thorough drain, (for the roots of the vine delight in a warm, rich, open soil, not too moist;) the soil is then filled in two feet eight inches, to allow for settling.

In the border I am very particular. I have in my border fifty bushels of whole bones, in which there are fifty beeve and sheep skulls; fifty bushels of pulverized charcoal; twenty-five bushels oyster shells; a quantity of leather scrapings; twenty-five bushels of coal and leached ashes; twelve bushels of blacksmith cinders and iron filings; twelve loads of well decomposed manure; and the rest is made up of street scrapings, garden soil, yellow loam, and sod from an old pasture; no dead carcasses being used. The whole is well mixed together, and filled in on the last of March; and the vines are then planted on the *inside* of the house, eight inches from the wall, one under each rafter, which will make the vines about three feet apart. The object is to make the border as loose, open, and rich as possible. Avoid all walking on the border after the vines are planted.

I have ten vines in front and eight on the back wall, of the following varieties, procured of PARSONS & Co., Flushing, L. I.: four *White Muscat of Alexandria*, one *Royal Muscadine*, one *Palestine*, one *Gray Tokay*, one *Black Prince*, one *Black St. Peters*, one *Zinfindal*, one *Red Frontignan*, one *Wilmot's New Black Hamburg*, six *Black Hamburg*.

I plant the vines about the first of April, taking care to spread out the roots, that they may have a free start and not get entangled; rub off all the buds except the strongest one at the bottom. Water the vines freely, if the weather is warm, and keep up a humid atmosphere all the time. Never allow the vines to receive a check

* We add a sketch of "a lean-to vinery" of the proportions and style described by Mr. SUYDAM, in order to make the subject better understood.—ED.

after having once started. If it should get too warm, open the house a little at noon, but never let the house be open after four o'clock. If you only leave one bud on the vine, you must take great care of it, as it will rub off very easy, and then your vine is gone. Water with soap suds every Monday—one pailful to a root—and on Friday with guano. Put two quarts of guano in a barrel of water, stir well, and apply at once.

About the 20th of April the buds will begin to push. Let the temperature be pretty high; it will do no harm. I often find my house as warm as 100°, 110°, and 120°, Fahrenheit; but 80° or 90°, with plenty of moisture, is the best. As the buds begin to push out, raise them to a wire trellis about twelve inches from the glass. If any of the other eyes push, rub them off. Give plenty of air in the middle of the day, sprinkle frequently, and keep up a moist atmosphere.

September 1st. Discontinue watering except with the suds. Pinch off the shoot, which by this time will be twelve or thirteen feet long.

December 15th. Cut off the vine about six feet from the bottom, wash it with mild soap suds, wrap with straw, and lay it down in front of the house. Sprinkle some rat destroyer about, cover the border inside and out with ten or twelve inches of manure to keep the frost from the roots, and the work is done for the season, except to examine the glass to see if it leaks, and open occasionally when the sun is too hot, and to see that the mice do not trouble the vines.

SECOND YEAR.—Open the house as the season advances, so as to air, and that the buds may not burst too soon. About the first of April, if the season is favorable, uncover the vines, and let them lie down until all the eyes have pushed an inch; raise them by degrees, that they may all swell alike; then fix them to the vine trellis. From the time the house is opened, sprinkle every day, except on damp, cold days, the same as last year.

May 1st. The eyes have now pushed a foot or more. They are now called spurs. Many of them will show fruit. Pinch off all the fruit except one or two, which may be retained to test the kind. Never let more than three clusters remain on the vine the first year of fruiting, and never but one cluster on a spur. Discontinue the syringing of the vine while the fruit is in blow, and keep the house more closed and warm. As soon as the fruit is formed, pinch off the end of each spur about an inch above the first leaf beyond the cluster, and all the other spurs three or four eyes from the vine. Do not allow the spurs to be closer together than eight inches; rub off all that are nearer. As the eyes burst and push out, continue to pinch of the shoot, always an inch above the next eye. This you will have to do six or eight times during the season, to every spur, to keep them in check, or “at home,” as it is called, and that the light may strike the vines on the back wall, (which are not in fruit this season—not doing as well as the front vines, that receive the full force of the light and sun.)

When the fruit has attained the size of a pea, go through the vines with a pair of sharp pointed scissors, and thin out the fruit full one half, always taking the smallest berries; and from time to time go over the vines and thin out the fruit until it begins to color, after which time it will be of no use. This will be about the 5th of August. Up to this time you have watered regularly with the soap-suds and guano, and syringed the vines from one to three times a day, as the weather has admitted. As soon as the fruit begins to color, discontinue the watering, and keep a current of hot dry air passing through the house, that the wood may get thoroughly ripened and prepared to do its duty next season. And if the fruit should turn soft and feel cold, cut it off at once; your vine is overcropped, and if suffered to stay on, will destroy the crop for another season and very much weaken the vine.

About the 20th of June, sprinkle two pounds of the flour of sulphur at mid-day, when the house is hot and dry, that some of the dust may fall on the foliage. This

will prevent the mildew. Repeat the same about the 1st of August. By the 15th of August the *Chasselas* grape will be ready to cut. Keep the current of hot air passing through the house. Pinch off the upper end of the vine to stop the growth and throw the sap into the lower part of the vine, and swell the buds.

September 15th. *Black Hamburgh* are now ready to cut. Your *Black Prince* and *Frontignan* will hang on the vine until December, if you keep the house open and cool.

December 15th. Cut the vines back to within two feet of where you did last year, and all the spurs to within an eighth of an inch of the vine. Don't fear for your fruit next season; there will be plenty of buds push from the base of the spur. Wash the vines with a preparation of soap-suds and sulphur—four pounds of sulphur to two quarts of soap-suds, mixed to the consistency of cream; apply with a paint brush, and be sure to touch all the parts. Some add a little tobacco. Cover the vines with straw, and the border with manure, the same as last year.

THIRD YEAR.—As the season advances, open the house often when it is warm, to keep the vines back so that the buds will not push too soon. Better not uncover until the 10th of April, than have the buds push and then receive a check. When you do start them, water the house freely and keep up a moist atmosphere, and guard against a check. Uncover the borders, and replace with new or fresh manure from the barnyard, to warm the roots. Examine the drain, to see that all water is carried off readily; for much—yes, one-half of your success depends upon keeping the roots in a proper state; no stagnant water must on any account be allowed to remain at the bottom of the border. Let the vine remain down on the border the same as last year, until the buds have pushed one or two inches; then raise by degrees. Several eyes will push from the base of last year's spurs; rub off all but one, so that the spurs will be about six or eight inches apart on the vine. Always rub or pinch off the spur; never cut. Water regularly the same as last year. As the fruit shows itself, select six or eight of the finest looking clusters on each vine, and pinch off all the rest at once. Keep the house closed and still during the time the fruit is in blossom, and not touch the vine with water until the fruit has set. As soon as this is completed, pinch off the end of the spur one inch above the next eye from the fruit, and all the others, except the leading shoot at the top, which you of course tie up to a wire trellis.

June 1st, remove all the rough and loose manure from the border, and fork in the remainder. June 10th, mulch the border with tan bark, about two inches thick, to keep the roots in an equal temperature and prevent the sun from operating too powerfully upon them. Care should be taken that there be at no time a sudden change in the house; open by degrees, and close in the same manner. If the leaf turns yellow, examine the glass; there is probably a defective light of glass, which draws the sun and scorches the vines. If the glass is defective, wash it on the inside with a preparation of whiting and boiled oil and turpentine. Never syringe the vines when the sun shines upon them; get up the moisture by keeping the floor wet.

When you prune the old wood of a vine, (which may be done without detriment, or danger of its bleeding, any time after the 1st of July,) use a very sharp pruning knife, and make one smooth, straight cut. The leading ones must be stopped soon after they reach the top of the house; but leave two or three laterals, to keep the sap in motion, which are to be stopped at intervals of two or three days. Pinch off all tendrils, and keep the whole strength of the vine in as small a compass as possible; but never remove the leaves from the vine, or you will destroy the flavor of your fruit. If you require more light, spread out the spur and tie it to the trellis. There should be at least one leaf between the fruit and the sun. Be sure and give plenty of air and room to the clusters, that they may get perfectly ripe, or the flavor will be destroyed.

Black Hamburg should be *black*, not red, as is frequently the case, from being kept too close and confined, and not open to the air, as they should be.

In selecting your fruit, care should be taken to have it equally distributed over the vines. This will add very much to the appearance of the house as the fruit progresses.

Tie all the spurs to the trellis as soon as the fruit has set, water regularly, sprinkle with sulphur the same as last year. When the fruit has attained the size of a small pea, commence to thin out, always taking the smallest berries. If you want large berries, you must thin out severely; take two out of five berries; the strength will enter those that are left, and cause these to grow beyond your expectations.

Then commence to shoulder or tie up the clusters, and spread them out so that the air will pass freely through the clusters, and ease the main stem. After the fruit begins to color, avoid all handling. If you touch the fruit, it will destroy its beauty, and cause it to rust. If it is necessary to handle it after this stage, use a glove.

Give the viney plenty of air, plenty of heat, and plenty of moisture. Remember that large fruit and large clusters are the objects to be attained.

This is the manner in which I have treated my vines for the last three years, and never have had any trouble from rot, rust, insect, shriveling, or shrinking; and in seventeen months from the time the vines were planted, I took the second premium at the State Fair at Rochester; and this season the first premium at Utica, having raised nine clusters on each vine, and exhibited grapes the weight of which was as follows: *Black Hamburg*, 2 lbs. 12 oz.; *Zinfindal*, 2 lbs. 14 oz.; *Black St. Peters*, 3 lbs. 2 oz.; and all were ripened by the 5th of September, although the season was backward and unfavorable.

What the vines will do another year, of course remains to be seen. I think, however, they are in good condition, the wood being well ripened; and with proper care, a good crop may be expected.

It will be seen that this statement is plain and to the point; and could I have had these notes to refer to when I commenced, they would have saved me a great deal of trouble. And I think that with these notes, and the help of DOWNING'S work and a work on the grape published by J. F. ALLEN, Boston, Mass., any one may raise the foreign grape without any fear of failure. And certainly, to see the house well in fruit one season, will go a great way toward paying for what some would call trouble.

TRANSACTIONS OF THE NORTH-WESTERN FRUIT GROWERS' ASSOCIATION, at their second Annual Meeting, held at Dixon, Ill., Sept. 29 and 30, 1852.

In order to place a proper estimate on the decisions of this meeting, we have looked over the list of delegates, or members, and find that out of the whole number, 63, there were from the State of Illinois *fifty-three*, from Iowa *six*, from Indiana *one*, from Ohio *one*, and from Wisconsin *two*. In the main, therefore, we must regard this as an Illinois association; and as there is at the present time a pretty general feeling in favor of the organization of State pomological Societies, we think it not at all unlikely that this will assume that character. It would probably be well that it should do so. The great State of Illinois, extending over five or six degrees of latitude, and containing some 60,000 square miles of territory, affords ample scope for the labors of such an Association. Ohio has already such an organization. Michigan, Indiana, Wisconsin, Iowa, and Kentucky will no doubt very soon see the necessity of it; as in all these States the more intelligent and improving classes of the population are turning their attention earnestly and energetically to fruit culture.

It is unnecessary for us to urge upon our western friends the advantages of such associations; for they show that they are fully sensible of them, in the formation of

State agricultural societies. Association is one of the most efficient means of collecting and concentrating the scattered and varied experience of individuals in every department of labor or study or research, and no pursuit that occupies the attention of men, so much needs it as that of fruit growing.

The Northwestern Association is to hold its next meeting in Chicago, Ill., on the first Tuesday in October, 1853. The officers for the ensuing year are—

JOHN A. KENNICOTT, *President.*

ROBERT AVERY, ARTHUR BRYANT, W. H. LOOMIS,
Vice Presidents.

F. K. PHENIX, *Corresponding Secretary.*

SAMUEL EDWARDS, *Recording Secretary.*

ARTHUR BRYANT, *Treasurer.*

We shall now proceed to give a condensed sketch of the proceedings.

At the opening of the meeting a committee consisting of Dr. L. S. PENNINGTON, CYRUS BRYANT, C. R. OVERMAN, H. S. FINLEY, and A. R. WHITNEY, was appointed to recommend a list of fruits for discussion and for cultivation in the West, and reported the following:

EARLY APPLES.—Carolina Red June; Early Pennoek; Keswick Codlin, for culinary purposes; Sweet June; Hocking, (local name.)

For limited cultivation.—Prinee's Early Harvest; Sweet Bough; American Summer Pearmain.

AUTUMN APPLES recommended for general cultivation.—Rambo; Maiden's Blush, (market and culinary); Gravenstein; Snow; Porter.

Recommended for further trial in the West.—Autumn Strawberry; Monarch; Fall Pippin, best fruit, but bearing variable; Sweet Nonsueh, (local name); Red Gilliflower.

WINTER APPLES, recommended for general cultivation.—Yellow Bellflower; Rawles' Janet, in favorable localities; Willow Twig, prolific and profitable; Fallwater, (known as Mountain Pippin); White Winter Pearmain, Dominic; Winesap.

Recommended for limited cultivation.—Belmont; Talman Sweet, as a baking apple; Vandervere.

For further trial.—Detroit Red; Roxbury Russet; Ladies' Sweeting; Baldwin; Rhode Island Greening; Jonathan; Hubbardston Nonsuch; Svaar, (best fruit).

The *Carolina Red June*, after being discussed, was passed as "beautiful, hardy, productive, and best of its season." It was stated to be an early bearer, producing fruit at four years old in the nursery.

Sweet June.—"Very good, early, and productive."

Early Pennoek.—Generally pronounced inferior in quality, but valuable on account of bearing early and most abundantly. Passed as "good, productive, and recommended for moderate cultivation for market."

Hocking.—Very large and productive. Passed as "good." Said to resemble the *Rambour Franc*, but later, and has darker wood, and buds closer and more prominent.

Keswick Codlin.—"Good for limited cultivation for culinary purposes."

Early Harvest.—"Best" in quality; poor bearer on young trees."

Sweet Bough.—Poor bearer.

American Summer Pearmain.—First rate in quality, good bearer, tree of slow growth.

Baldwin.—Not much known; poor bearer so far.

Rambo.—All agreed in calling it "best and most profitable of its season."

Snow, (Fameuse).—"Very good; recommended for general cultivation at the north.

Mr. ELLIOT, of Cleveland, said that after cultivating it seven years, he had none but poor specimens. We purchased some very fine specimens at Cleveland, in October, 1850, from a boy who was selling them on the steamboat wharf.

Maiden's Blush.—Good for culinary purposes, and recommended for general cultivation. Stated to be excellent for drying.

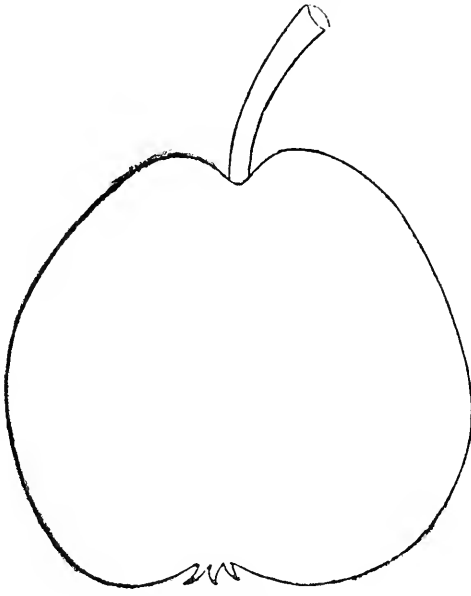
Gravenstein and Porter.—Not sufficiently known.

We shall go over the remainder of the list next month.

THE annual meeting of the Genesee Valley Horticultural Society will be held in Corinthian Hall, Law Library room, on the 5th of February. There will be an exhibition of winter fruits.

THE BLEEKERS MEADOW PEAR.

WHEREVER this variety succeeds as well as it does in Western New York, we can not but



BLEEKER'S MEADOW PEAR.

—open, basin shallow. Flesh—white, half melting, with a high musky flavor.

regard it as a useful and profitable orchard pear. The tree is remarkably hardy and vigorous, grows erect and rapidly, bearing enormous crops. The fruit, although at best only second rate for the table, is excellent for stewing; and with us retains its freshness, fine color, and flavor, all through the months of November and December. It is a native of Pennsylvania, and said to be a descendant of the *Seckel*. We would not recommend it for the garden; but for the orchard, where trees are to be treated with a very low culture, and neglected as to pruning, it is one of the best sorts we know of.

Fruit—medium size; on old trees, rather small; roundish and regular. Skin—smooth, bright yellow, sprinkled with dark dots, and occasionally a reddish brown tint on the sunny side. Stalk—stiff, stout, about three-fourths of an inch long, slightly sunk. Calyx

THE CURCULIO—A REMEDY.—I propose to introduce the reader to a new and distinct mode of warfare upon that mischievous insect, the curculio; all former warfare, so far as I know, having been predicated upon false opinions concerning its nature and habits. It comes out of the ground about the commencement of warm weather, when the plum tree is in blossom, or soon after. They are at this time about the size and have nearly the appearance of a common louse, are unable to fly, and invariably crawl up the tree during the fore part of the day, or at any time when sufficiently warm. Here they remain, mature, and do their destructive work before they are able to fly.

I am of the opinion that all the benefits arising from whitewash of lime, is owing to its caustic properties, in retarding their progress up the trunk of the tree, and destroying them when quite young and tender. I propose to make a ring of tar around the body of the tree, and by strict attention destroy them as they crawl up. Last spring (though too late) I killed in this manner upwards of six hundred on one tree. Gathered fallen plums every day, and destroyed them. I intend to give them special attention next season, and report progress. Let every one who owns a plum tree do likewise.

I am well satisfied that the curculio migrates slowly; that they increase in favorable situations (soils) with a rapidity proportionate to the amount of fruit within their range. That they are averse to using their wings, any one may soon convince himself by shaking them from the tree when full grown; in a short time they will be seen making their way up the trunk of the tree. By removing a tree to where no plums have ever been grown, a plentiful crop will be had for two or three years. The tar should be stirred and renewed every day. O. T. HOBBS.—*Randolph, Pa.*

Editor's Table.

TRANSACTIONS OF THE N. Y. STATE AGRICULTURAL SOCIETY.—We are indebted to B. P. JOHNSON, Esq., the able and courteous Secretary of the Society, for the eleventh volume of its Transactions. It contains about 1000 pages, and is filled with matter interesting and valuable to all engaged in the noble occupation of cultivating the soil, and is a work which no farmer can peruse without much benefit. It contains, as usual, the doings of the State Society, valuable reports from the several County Agricultural Societies, the detailed management of the premium farms, prize essays on superphosphate of lime and on the management of soils, essays on the potato disease and the Ayrshire breed of cattle, with other matters of interest. An appendix to the Transactions, of 193 pages, contains the Secretary's report of the Great Exhibition in London, and is a work of great value and general interest.

We have read the "general view and agricultural survey of the County of Madison" with pleasure and profit. It is a paper of much labor and merit. The labor and money expended on the thirty analyses of soils given in this essay, must alone have been considerable. When we know more of the actual requirements of plants, the form in which they take up their constituents, and the relative proportions in which the various crops require their available food to exist in the soil, &c., these analyses may be of great value. At present, with our limited knowledge, we have been able to obtain but little additional information from their study and comparison.

Professor COMSTOCK.—We have on hand several communications on Professor Comstock's WONDERFUL discoveries. In our next, we shall publish some of these, and *divulge* THE SECRET, so far as we have been able to learn it after patiently listening to the Professor for four or five hours. In the meantime we advise our readers, if they do not wish to be *humbugged*, to keep their *dollars* and let the Professor keep his *secret*.

CLUBS.—Additions to clubs can be made at any time, at the lowest club rates. Those who have ordered *five* can increase their clubs to *eight*, by forwarding One Dollar.

OUR Ladies' Department, which is unavoidably omitted, will be resumed in the next number, and continued, with illustrations.

THE HORTICULTURIST, AND JOURNAL OF RURAL ART AND RURAL TASTE.—The January number of this journal has been one month before the public, and the press and the people are unanimous in its praise. In beauty it is not excelled by any journal in the country, and, in the opinion of our contemporaries, its matter equals its appearance. To this verdict we heartily assent. The February number is just issued.

Published by JAMES VICK, JR., Rochester, N. Y. Price, \$2 per year.

NEW YORK STATE AG. SOCIETY.—The annual meeting of this Society will be held at Albany on the second Wednesday (9th.) of February. The exhibition of Fat Cattle, Grain, Seeds, Dairy products, &c, will be held at Wolford's, Bull's Head, on the 8th, 9th, and 10th of February.—The exhibition of Fruits and Field crops, at the Society's rooms, old State House.

OUR friends ordering the *Farmer* will be particular in giving the name of the Post Office, County and State; also, in writing names plain, as by this much perplexity may be avoided to ourselves and subscribers.

TERMS—FIFTY CENTS a year for single copies; *five* copies for \$2, being *forty cents* each; and *eight* copies for \$3, being *thirty-seven cents* each, and any greater number at the same rate.

ADVERTISEMENTS, to secure insertion in the *Farmer*, must be received as early as the 10th of the previous month, and be of such a character as to be of interest to farmers. We publish no other. Terms—\$2.00 for every hundred words, each insertion, *paid in advance*.

Inquiries and Answers.

(JOHN SLITTENBAUGH, Leesburgh, Pa.) PLASTER ON WHEAT.—There is much difference of opinion on this subject; some think that plaster sown on wheat in the fall strengthens materially the young plant and enables it better to stand the winter. It is said, too, that plaster sown on wheat in the spring causes too luxuriant a growth of straw, to the damage of the crop, which is not the case when sown in the fall. Many good farmers prefer to sow it in the spring. Aside from practice, theory would indicate the fall as the best time for sowing plaster on wheat.

(JAMES W. GAMBLE, Hillsboro, Ohio.) We like much your proposed plan of discussing with your neighbors the various articles of the *Farmer*. We should like to hear how far they accord with your experience, &c.

We do not know whether you can raise enough carrots from an acre to purchase twice the amount of corn the "Squire" can raise on an acre, with only one-third extra cost, but we do know, however, that you can raise a crop of carrots at much less cost of the valuable ingredients of the soil, than in raising a large crop of corn, from the fact that corn destroys ammonia during its growth while carrots do not.

Of the relative value of turnips, carrots, and beets, we have not experimental means of knowing; theory, however, indicates that 100 lbs. of hay are equal to 885 lbs. of turnips, 383 lbs. of carrots, and 669 lbs. of white Silesian beet.

Mr. G. wishes to know the best method of raising parsnips. Will some of our experienced cultivators give us their views.

(J. M. CROSIER, Little Prairie, Wis.) THORN HEDGES.—Place your seed in a "rot pit," or in a hole in the ground; mix them with a little soil and let them lay there till the spring of 1854; then sow in drills, &c. They will not germinate the first year.

(NATHAN VEATCH, Bladensburg, Ohio.) WORKS ON AGRICULTURAL CHEMISTRY.—There are several good works for you. *Norton's Elements* would perhaps please you best; it is plain and practical, and applies chemical principles to *American* agriculture. It should be in the hands of every farmer. *Johnston's Agricultural Chemistry* is a most valuable work; perhaps the most thorough we have on the subject. *Boussingault's Rural Economy* is the best work extant. It embodies the results of some thirty years laborious experimenting on a large farm devoted to this especial object, and is deserving of much more attention than it has hitherto received. *Liebig's Agricultural Chemistry* is an interesting and most popular work. It has perhaps done more good in calling the attention of chemists to agriculture, and agriculturists to the value of chemistry—in leading farmers to experiment in the field in conjunction with the chemist in his laboratory—than all other works on the subject.

LIQUID MANURE TANK.—Which is the best and cheapest means of catching liquid manure, in a vat or cistern? How large should it be to hold the liquid of 16 cows during winter, and what would it cost? STEPHEN LONDON.—*Eric Center, Erie Co., N. Y.*

Will some of our readers be kind enough to answer the above.

FATTING CATTLE.—I should like to hear, through the columns of the *Farmer*, the best mode of fattening cattle—how much exercise, if any?—what quantity of drink on dry feed, or on roots? Yourself, or some practical farmer, can give us some information respecting it. J. T. ROBBINS.—*Mayville, Chaut. Co., N. Y.*

In fattening animals, the less exercise permitted the better. Exercise is doubtless necessary to insure the *health* of all animals; but we must recollect that fattening is, in itself, an abnormal condition, that all animals, rapidly accumulating fat, are more or less diseased. The celebrated breeder, BAKEWELL, understood this fact, and was in the habit of turning his sheep into marshy meadows for the purpose of getting them diseased. In such a condition they matured earlier and laid on fat with surprising rapidity.

Salt is good for all animals, and probably is, in some form or other, necessary to *health*; but we know that salt is not good for fattening animals, and should never be given if the object be the accumulation of fat. Experiment agrees with theory on this point. We recollect when conducting some extensive experiments on sheep, a practical friend urged us to give them salt, assuring us that his sheep did much better with than without salt. The sheep on which we were experimenting were doing well at the time, averaging about 2 lbs. increase each per week. To please our friend, we gave the sheep salt, of which they partook freely, but in the fortnight during which they were allowed salt, *every sheep lost weight*. We would give them as much water as they would drink; if fed roots, they will require, and will drink less.

In fattening animals, perhaps, the most important point is to obtain such as are well calculated, from breed, disposition, and symmetry, to mature early and fatten rapidly; then keep them warm, (be careful they are not too warm and that they do not perspire) quiet, and clean. Feed them regularly and let their food be highly nitrogenous, with sufficient available non-nitrogenous matter united with the required bulk. See December number, page 334.

SUN FLOWER SEED.—Are sun flower seeds good for poultry? and at what times, and in what quantities, are they good for fattening in the coop? Would their use prove injurious in any way? J. W. N.—*Forest, Pa.*

HORTICULTURAL

(H. S., Meredith, N. Y.) *Bush Alpine Strawberries* may be propagated by division of the plants, but the better way is to raise them from seed.

Walnuts may be profitably grown where saplings sell so well, and are likely to increase in

value, for hoop poles. The nuts should either be sown in the fall, or kept among earth all winter and sown in the spring. They should be put in good clean soil, and be as carefully attended, for the first year, as a hill of corn. They may be sown thickly in a seed-bed and afterwards transplanted, or at a foot apart and let them remain until ready for cutting.

(L. W. C., Marion, Oregon.) The lower tier of branches on dwarf or pyramidal pear trees should not, as a general thing, be more than a foot from the ground. They need shortening (the young wood) annually, not to keep them from growing too large, but to keep them vigorous and well supplied with fruit spurs on all parts. You should peruse the "*Fruit Garden*" on the cultivation and training of pears. We are glad to learn that fruit growing already occupies so much attention in Oregon.

(C. A., Paris, C. W.) The *Syrian* grape can be had at any of the nurseries where foreign grapes are cultivated.

The *Prince Albert* grape has not the reputation of being superior to the *Black Hamburg*, and we believe is inferior in size and productiveness.

We are not aware of the *British Queen* strawberry being liable to change its sexual character.

The *Fabiana* is easily propagated from cuttings of the young wood; in light, sandy earth, covered with a bell-glass, they root more certainly and quickly.

HEDGES.—For a "thief-proof" hedge, in 44 deg. north latitude, we would choose the *Cockspur* native thorn, or any native thorn with sharp powerful spines, or the *Honey Locust*. The latter, if well managed at first to thicken it, makes an excellent hedge.

GENEVA TRIAL OF IMPLEMENTS.

Review of the recent Trials of Horse Powers and Threshing Machines, and the Report of the same, by the Committee of the New York State Agricultural Society, at Geneva and Utica, under whose supervision it was held.

If anything were wanting to prove the great superiority of the Endless Chain Horse Power, patented by Horace L. Emery, over all others of its class—or if to prove the superiority and utility of endless chain powers over all sweep powers—it has at length been furnished by the report of the committee of the State Ag. Society, on the trial of machinery at Geneva in July last.

The trial was one the largest ever had in this country, and probably in the world. It continued nearly two weeks, and was attended with a vast amount of labor and expense to all concerned, and seemingly every competitor returned to his home perfectly satisfied with the experiments to which their machines had been subjected.

Although the award for the best Horse Power was given the maker of the above Emery power, it is not half the importance as is the report of the several severe tests to which all were subjected, as will be seen by reference to the report.

Among other things, it says of the Emery power:

"The platform rolls over reels, furnished with clutches so

disposed that its action is nearly in a tangent to the circle, and therefore acts to the best advantage. This arrangement seems less liable to wear than any other, and the entire convenience and perfection of the work, gives to it a marked superiority."

It may here be proper to state, on the authority of two of the committee, Mr. Howard and Mr. Holmes, (after publication of the report) "that in course of consultation upon the relative merits of the several other powers, it was considered in committee that this one had one-third advantage in utility, over the best of the others;" but it is nevertheless true that its relative utility was not over-estimated, as will hereinafter appear.

One of the first and simplest experiments tried with the several powers in this class, was to ascertain the relative amount of friction, or in other words how much force was absorbed in friction by the powers when not attached to any machinery, and running at the velocity required for practical purposes.

It was as follows: "Each Two-horse Power was placed at an angle of 13 deg., and two men placed upon the platform, and their gravity, (269 lbs.) allowed to move them as nearly as possible to the required velocity for threshing. As their weight was too great and the velocity too rapid, a spring balance or steelyards was attached to the frame work at the fore end, and held by the men on the platform—and by this means the motion was retarded sufficiently for the experiment. As the position of the steelyards was the same on each power, and in a horizontal position, it was reckoned that whatever the draft in retarding the motion might be, the steelyards must show it, as they did; and it was assumed that whatever of the propelling force derived from 269 lbs., must be shown upon the steelyards—or in other words, what was not upon the steelyards was absorbed. The result of this experiment was as follows, after getting up and maintaining a uniform velocity with each machine.

Emery's—Velocity of platform required for threshing, 169 feet per minute; velocity in experiment, 292 feet per minute; steelyards showed 27 lbs.; absorbed by friction, 35 lbs.

Badger's—Velocity of platform required for threshing, 222 feet per minute; velocity in experiment, 200 feet per minute; steelyards showed 11 lbs.; absorbed by friction, 51 lbs.

Westinghouse—Velocity of platform required for threshing 135 feet per minute; velocity in experiment, 152 feet per minute; steelyards showed 13 lbs.; absorbed by friction 49 lbs.

Thus showing that while the Emery power did move nearly 75 per cent. faster than required, the friction was but 35 lbs.—while had it been more retarded, the friction would have been considerably reduced below even 35 lbs., or about 25 lbs.

Badger's power, which was awarded the 2d premium, absorbed 51 lbs. while running at about its requisite speed for threshing, or 46 per cent. more than Emery's power—and probably this difference would have been 75 or 100 per cent. had the velocity of Emery's been reduced to its usual rate.

This experiment was also applied to the One-horse Power, with the following results: with one man, weight 150 lbs., producing a power on platform of about 34 lbs.

Emery's power in experiment, 192 ft. per minute; 30 lbs. on steelyards; amount absorbed by friction, 24 lbs.

Badger's power in experiment, 146 ft. per minute; 43½ lbs. on steelyards; amount absorbed by friction, 29½ lbs.

Showing again, while Emery's power absorbed but 24 lbs. while moving about 14 per cent. too fast, the Badger power absorbed 29½ lbs., about its regular velocity, or 24 per cent. more friction than Emery's.

These experiments, which were taken with the utmost care and precision, and repeatedly corroborated by others succeeding them, are wholly left out of the report, while others of less pointed results have been recorded.

One of which was to attach the same threshing cylinder alternately to each power, with the same band and by placing five men in the Two-horse Powers, to note the distance their weight would cause them to travel per minute, as also the number of revolutions of the cylinder produced in the same time. The weight of the five men was 714 lbs., producing a force of about 161 lbs.

Experiment with the Two-horse Powers.

Emery's distance travelled, per minute, 218 ft.; revolutions of cylinder, 1,996.

Badger's distance travelled, per minute, 300 ft.; revolutions of cylinder, 2,160.

Westinghouse's distance travelled, per minute, 190 ft.; revolutions of cylinder, 1,390.

As this experiment combines an attachment to machinery, and as the relative velocity of the cylinder to each foot, or the whole distance travelled, varies according to the

internal gearing of the powers themselves, it becomes necessary to take that difference into our calculations, which we find as follows: The cylinder when attached to Emery's power, revolves 9.15 times per each foot of platform—Badger's, it revolves 7.15 to each foot—and Westinghouse's revolutions 10.67 times. Thus showing that Badger's power geared 27 per cent slower than Emery's, and 48 per cent slower than Westinghouse's, and should produce results bearing a relative proportion of increase over them.

Emery's, therefore, as compared with Badger's should have produced but 1620 revolutions, but did 376 revolutions over that, thus showing Emery's to have exceeded Badger's by 23 per cent.—and Badger's to have equalled Westinghouse's, should have produced 2,061 revolutions, while he did more by about 9 per cent.

These minutes are copied from the report, but the deductions are not. They are themselves, self-evident, notwithstanding the report to the contrary, which reads:

"From the foregoing table, (alluding to velocities and distances) it is obvious Badger's power works with the least friction, or that gravity gives to his machine a greater amount of useful power than to either of the others on trial being 3 per cent. more than Emery's, and 55 per cent. more than Westinghouse's."

It further says:

"Badger's power is well made, and in this respect deserves much credit; yet in this excellence it is exceeded by Emery's."

"Badger's is a rack and pinion power, the legs being connected by strong iron links, and the rack though straight, is provided with teeth increasing in depth as they approach the exterior edges of the plates into which it is divided; and each plate is perforated in the center, to accommodate the convexity of the pinion while passing over it. This perforation weakens the pieces, and increase their liability to fracture. A rubbing action seems to be inevitable, causing rapid wear."

Justice to the Emery power in this last experiment requires the statement of the fact, that it was made at Utica some two months subsequent to the Geneva trial, and not with the understanding with the competitors, that it was to be made a part of the report; and while this power was transported from Geneva to Albany, and back to Utica by railroad, it became filled in all its gearings with coal and cinders from the locomotive, being on an open car. It became necessary to take its every part to pieces, and was cleaned as well as could be done under the circumstances—while both the others were different powers than used at Geneva—one being brought by wagon, with great care, to Utica, and the other in a box car by railroad. This is named to show the cause of the relative difference in the trials of friction at the two places. This fact was made known at the time to the committee, but it is not noticed by them.

The One-horse Powers, which were transported in tight cars, suffered no inconvenience from coal and dust, and the results were as follows:

Emery's, with two men, travelled 104 feet, and produced 950 revolutions per minute.

Badger's, with two men, travelled 87½ feet, and produced 630 revolutions per minute.

According to the gearing, as before, Badger's should have produced about 1,250 revolutions to have equalled Emery's—but came nearly 50 per cent. short of this standard.

Where has the report, as published, noticed this discrepancy in the One-horse Powers? No where. It simply gives the number of revolutions, without a comment. Is it such a report as the statistics justify, or is it not?

Another experiment was made with each set of powers connected with threshers as in use, and six men placed on the several platforms, weighing 925 lbs., and the velocity allowed to equalize the power or weight on the platform, and this velocity noted for one minute, as follows—(rather an ambiguous method of reporting, to say nothing of the errors):

Name of Power.	Distance travelled by horses per min. in feet.	Ratio of gr'n to sheaves.	Lbs. of wheat threshed per minute.	No. of lbs. at same rate for 10 hours.	No. of bus's for 10 hs. at 60 lbs per bushel.	Cost per bu. with 5 men & 2 horses.	Cost per bu. with 3 men & 2 hor's, at same rates.
Emery's,	169.28 *	.201	16.09	9654	160 54-60	\$.0873	\$.0243
Badger's,	222.22	.183	8.91	5316	89 6-60	.0637	.0446
Westinghouse,	135.63	.209	14.51	8856	148 6-60	.0405	.0270
Pitts' Lever Power and Cleaner, .....	.....	.207	35.27	21162	352 42-60	\$.0811	
Hall's do., .....	.....	.192	24.00	14400	240	.0458	

Badger's power, 150 revolutions of wheel, 10 in. of platform to each revolution—197 ft. gaining perpendicular of 44.32 ft., for 232 lbs., while it should read—

Badger's power, 150 rev., 10 in. each for platform—125 ft., equal to raising 925 lbs. 23.11 ft. perpendicular besides its own friction.

Emery's power, 140 rev., 10½ in. each for platform,—207 ft. equal to raising 925 lbs. 46.56 ft. perpendicular, besides its own friction.

Westinghouse's 256 rev., 7¼ in. each for platform,—152 ft., equal to raising 925 lbs. 34.19 ft. perpendicular, besides its own friction.

If this shows anything, it is that the Emery power and thresher combined, runs much more easily than either of the others.

Another experiment was, to place two men upon the platforms of the Two-horse Powers without threshers or steelyards, and allow the velocity and power (232 lbs. on platform) to equalize each other, and note the distance travelled—with the following result:

"Badger's power 218 rev., 10 in. each,—256 ft. of platform, perpendicular elevation of 45.69 ft, for 52.25 lbs.

Supposing the 256 ft. to be correct, (which should be 190 ft.) the elevation would be 64.65 ft.—while it should read thus—

Name.	Number rev. of pulley.	Motion of platform to each rev.	Elevation of 232 lbs. besides fric'n.	Distance motion of platform.
Emery,	420	10½	\$3.91 ft.	871 ft.
Badger,	215	10	42.97	190
Westinghouse	356	7¼	51.79	229

Thus showing conclusively the great difference in the friction of the powers themselves, as also with threshers attached, is in favor of the Emery power.

The next experiment is that of threshing grain with horses weighing 2,200 lbs., placed upon the several platforms, and a quantity of grain, 100 sheaves, weighed off to each competitor.

The travel of the horses, the time occupied, the weight of grain obtained, the velocity of the cylinders during the threshing of the grain, the number of men required, &c.

Name of maker.	Number of horses used.	Number of men employed.	Weight of sheaves threshed.	Weight of cleaned grain.	Time required in threshing.	Weight of horses used without harness.	Revolutions of Cylinder.
Emery,	2	5	lbs. 840	lbs. 169	m. s. 10.30	lbs. 2200	1550
Badger,	2	5	850	156	17.30	2200	1600
Westinghouse ..	2	5	954	200	13.30	2200	1450
Pitts, lever pow'r & self cleaner,	8	7	924	194	5.30	unk'n.	1350
Hall, lever power & self cleaner,	8	6	1000	192	8.00	do.	1650

From this table we obtained the following deductions, which will show the relative cost of threshing with the endless chain powers with great accuracy, as the experiment was tried with every circumstance alike with each, and in a manner where there was no possibility of favoritism nor deception—as the whole work was done by the gravity alone, and each machine new, and horses not before used on any power.

From the above, it will be seen that the report charges each of the Endless Chain Horse Powers, with five men in attendance, while in no instance were more than three men engaged in these threshing experiments—and further, three men can as well manage either of them, as six or seven can the larger machines; while they are charged with only that number. With the endless chain, the necessity of a driver is avoided, as the feeder of the thresher not only attends his own team, but has the whole under his control, and can check or stop the whole instantly, by means of brakes and lever.

It is also observable that the yield is little better than half a crop, while it is mixed with much weeds and grass, requiring about the same power and labor as it would to produce results double what we have before us. As the ratio of wheat to straw bears a very uniform proportion, these experiments form good data from which to make the following deductions:

The Emery power required the team to travel but 1.9 miles per hour, and with the force of gravity alone, threshed of this grain at the rate of 161 bu. per day, of cleaned wheat at an actual cost, with the three men, of less than 2½ cts. per bushel, which, cleaned from the fine chaff with fan mill, will add somewhat to that sum, making say three cents per bu. over boarding, and calculating the board of three men and two horses at 37½ cts. each per day, will cost 4 cts. and 16-10 mills per bushel, or in a good yield, about half that sum.

Badger's power requires over 2½ miles travel of team per hour, and threshed but 89 bushels of cleaned wheat per day, costing for three men and two horses, 4 cts. 4-6-10 mills per bushel, or cleared up at 4 cts. 9-8-10 mills, over board, or including board of men and team, 7 cts. 8-10ths of a mill per bushel—or in good yield, about half that sum.

Westinghouse's power required less travel of team, being about 1.6 miles per hour, threshing 145 bu. per day, costing with three men and two horses, 2 cts. 7½ mills per bu. over board, or cleaned up, 3 cts. 2.9 mills per bu., or including board, 4 cts. 5.8 mills per bu.—or in good yield about half that sum, thus showing at a glance, that while Badger's team travelled 30 per cent. faster, he threshed 45 per cent. slower, costing 70 per cent. more per bushel than with Emery's power; and that with Westinghouse's the team travelled 19 per cent. slower—threshed 9 per cent. slower—costing 10 per cent. more per bu. than with Emery's.

It is proper to remark here, that Westinghouse was at one time the agent for selling the Emery power, and but recently has made the kind used at these trials, which, excepting an alteration in increasing the gearing, (to its disadvantage in strength and durability,) is in all other respects essentially the same as the Emery power, and is claimed to be a bare-faced infringement of his letters patent, and legal proceedings have been directed against him therefor—thus establishing beyond cavil the superiority of the Emery's Endless Chain Power over all others, and particularly the *rack and pinion*.

The writer would willingly stop here but for the reason that an unfair, equally erroneous and unjust comparison is made in said report, between the two premium machines in the different classes, which is wholly foreign to the subject, and drawn from prejudice or the want of a proper understanding of the long series of experiments accompanying the same, and is not deducible from anything connected with the reports of the experiments.

Notwithstanding the report says—"These different classes cannot be compared with each other, your committee has viewed them as unconnected," in the very next paragraph it says, "The table shows Emery's machine requires twice the time to perform the same work that Pitt's machine will accomplish;" then goes on with an ingenious calculation, and carries it through, showing thereby that grain can be threshed by Pitt's machine just 3 7-10 mills less than with Emery's, and that, "This difference will pay the extra interest on the cost of the larger machine, the expense of keeping it in repair, and the cost of an elevator to remove the straw to the stack-yard." Again it says, "These advantages belong alike to all the machines of the class of which Pitt's is the representative," while Hall's, in the same trial, of the same class, and the next best, came, by the same rule, more than 44 per cent. short of Pitt's, while the public well know the relative merits of the two are barely discernible. And again it says, "An earnest endeavor has been used to ascertain and record facts in relation to each machine, with the nearest approach to mathematical accuracy, and from such premises to determine merits and excellences," and in the next line it says, "It would mislead the farmers of the State, and do injustice to the inventors, if the results exhibited in the above table are allowed to stand as a correct exhibit of the ability of the several machines to separate wheat from straw."

Next it assumes, "360 lbs. of grain as a fair yield from 100 sheaves, and that 4,500 sheaves is a day's work for Pitt's machine, making 270 bu. per day with 7 men=87; 8 horses at \$4-\$11=4 cts. 7-10ths of a mill per bu.

The next assumption is, that as it takes Pitt's 5½ minutes and Emery's 10½ minutes at Geneva, and that if 270 bushels is a day's work for Pitt's, then half that, or 135 bushels is a day's work with Emery's; and the calculation includes five men for even this small day's work, instead of three, costing, per report, 4 cts. 4-10ths mills per bush.

Now as the whole quantity threshed at Geneva averaged but 171 lbs. per hundred sheaves, in the above calculations the yield is more than double that at Geneva, and according to the same rate as actually threshed by Pitt's there, he would have obtained 743 bush. in ten hours, or just 2½ times more than is reckoned a fair day's work in this "comparison," or in other words, that Pitt's was working 2½ times faster than could be kept up through the whole day, which is readily accounted for by those who witnessed it, as the fatigue of the team, after threshing 5 min. 30 sec., was greater than was caused by the whole threshing done on all the Endless Chain Powers which were operated by the same team in quick succession, requiring in one, and the last case, 17½ minutes, and in all 41½ minutes.

Now, where is the justice of reducing the quantity in good grain to 135 bush., while 161 bush. was actually the rate of threshing poor grain, a deduction of over 16 per cent., while the Pitt's power, which has been shown to have been worked 2½ times faster than in the comparison, is made the standard, and its time alone considered as the index of its capacity.

To show the fallacy of this, let us reduce the trial at Geneva from 5 min. 30 sec. to what it should have been, or 2½ times—15 min. 7½ sec., which, compared with the correct time of Emery's threshing, which is 10 min. 30 sec., shows that instead of requiring more time, Emery's worked the fastest by 4 min. 23 sec., or 40 per cent. faster than Pitt's, or equal in good grain to 373 bush. per day, instead of 135 bu. This is good logic, and based upon the materials in the report and "comparison" there made.

If to these estimates be added to Pitt's the boarding of men and horses, the cost would come up to 6 cts. 1½ mills per bush., while if the board of three men and two horses be added, (being all the force used unless the owners of the team are counted, who, being fearful for the safety of their horses, no harness being allowed, attended and held them during each experiment, it being the first time they had been on a power,) the cost with Emery's power would be but 4 cts. 3-4-10ths mills per bu., making a difference in favor of Emery's machine of 1 ct. 8-1-10ths mills per bush., or 30 per cent. less cost, instead of 9 per cent. more than with Pitt's, as the "comparison" would have it.

Although 270 bush. is more than an average day's work for Pitt's machine, with any number of men and horses, and especially with 6 and 7 men and 8 horses—it is not unusual that 250 bush., and in very many instances 300 bush., have been threshed per day with the same team and four and five men all told, with the Emery power. While these numbers are not published as an average capacity for the Endless Chain Powers of Emery's Patent, two hundred bushels of wheat, of average yield, is their warranted capacity with horses weighing 1000 lbs. each, and four men to attend it.

So much for this "comparison." If the relative capacity, utility, portability, and cost, both of machines, as well as running the same, is not established in favor of the Endless Chain Power of Emery's Patent, not only over all others of its class, but over the best of the larger kinds of Lever Powers, by at least 33 per cent., then such trials and experience cannot establish anything.

As to the philosophical remarks in the report, concerning the momenta of cylinders, as also their construction as whole or open, or the use of various contrivances for reducing friction and proper lubrication of machinery, as also the simplicity of the construction of the premium threshing, with its teeth 3 inches long, (while the report says 1½ is better,) &c., I must omit, or leave the subject for another notice, or for those who are sufficiently qualified to comprehend so great a subject.

Having consulted several members of the committee, both before and since the publication of the report, and pointed out these errors, and learned from them that, having made their calculations, based on what they considered correct principles, they still adhered to the report, with a conviction they had done justice to the subject and all concerned. I would not in any manner wish to impeach their motives, while I do question the results at which they arrive.

H. L. EMERY.

Albany, January 1, 1851.

Patent Mammoth Premium Corn-Stalk, Hay, and Straw Cutters & Grinders.

CAPABLE of preparing 100 bushels of Corn-stalks, or One Ton of Hay or Straw, per hour, and reducing the largest Corn-stalks to the consistency of Cut Straw, avoiding the necessity of steaming or soaking, and saving 50 per cent. over the common way of feeding fodder. Horses and Cattle will do as well on fodder prepared this way, as on the best hay. The First Premiums have been awarded at every exhibition where they have been exhibited for competition. It can be worked by hand or power, without additional cost. The inventor will forfeit \$50, after an impartial trial, when this Machine is used in preparing good fodder, if it does not prove to save 50 per cent. over the common way of feeding fodder, and it may be fed in the same condition as the machine leaves it, without meal or soaking. Cows fed on fodder produce sweeter butter. Over 900 of these Machines have been sold. Price—\$35.

State and County Rights for sale.

Gilbert's Excelsior Thresher and Cleaner,
Accomplishing more, with the same power, than any other Machine. It can be driven with two horses.

Price—\$200 and upwards, according to size, Horse Power included. Apply post paid to J. G. GILBERT,
[2-4] 216 Pearl st., New York.

French Zinc Paint.

THIS new and beautiful article of Paint is now offered to the trade and public, ground in prepared linseed oil, for the first time in this country. It has been used successfully in France for the last five years, where it has superseded white Lead as a paint.

The French Zinc when properly prepared and used, makes the most brilliant and durable white in use, and is entirely free from all poisonous qualities.

The French Zinc is not more expensive than white lead, and is prepared in such a manner that it requires no further preparation for use, than to thin it with Turpentine or raw Oil to the consistency of white lead paint.

The French Zinc is very much whiter, and has a better body, than the New Jersey Zinc.

The French Zinc is offered dry, and prepared as above, in quantities to suit purchasers, at the Manufacturer's Depot, No. 17 Buffalo st., Rochester, N. Y.
M. F. REYNOLDS,
July, 1852.

Important to Farmers.

IT IS generally conceded by all intelligent farmers that cutting the food for cattle will save from 25 to 30 per cent. Berthol's Oblique Rotary Corn Stalk, Hay and Straw Cutter, is conceded by all that have used it to be far superior to any other, as it destroys all hard substances in the stalk leaving it soft and easily eaten. It turns very easy and is not liable to get out of order, and, with care, will last an age. It has been awarded Four First Premiums and a Silver Medal, by the American Institute. For further particulars address (post paid) the patentee, H. W. BERNORF, Sugar Loaf, Orange Co., N. Y., or LONGETT & GRIFFING, 25 Cliff St., New York, who are agents.

Patent Rights for sale. [11-31]

Premium Dahlias.

THE subscribers offer for sale this Autumn and the ensuing Spring, 10,000 Dahlia Roots, which have proved to be the choicest collection in the States and Canadas. [See records of the Fairs for the last four years.]

Persons commencing the Nursery business, and Amateurs, will find it to their advantage to give us a call, or make enquiries before purchasing elsewhere.

C. J. RYAN & CO.,

Rochester and Charlotte Plank Road Nurseries, Rochester, N. Y. [11-6]

Emery & Co.'s Improved Horse Powers, Thrashers, and Separators.

THE undersigned have been appointed sole agents for the sale of Emery's new Patent Improved Horse-Powers, Thrashers, and Separators, in the city of New York. The State Agricultural Warehouse is the only depot where this superior Power can be had.

LONGETT & GRIFFING,
7-4f. State Ag. Warehouse, 25 Cliff st., New York.

Farmers' Club.

THE official report of the Farmers' Club of the American Institute, is published in the *American Artist*. This Club does as much as any in the country to disseminate useful, practical, and scientific information among agriculturists. Send Two Dollars for a year's subscription, to JOHN BULLOCK, No. 9 Spruce st., New York.

NURSERY NOTICE.

A Rare Chance for Beginners.

THE subscribers, being desirous of clearing the land for other purposes, offer for sale the coming spring, at very low rates, and in lots to suit purchasers,

15,000 Apple trees, 2 years from graft.

25,000 " 1 year "

2,000 Pears on Quince, 1 year from bud.

5,000 Standard Cherries, 1 year from bud.

2,000 Peaches, 2 years from bud.

Also, 10,000 yearling Cherry Seedlings, root-pruned.

The trees are well grown, in good condition, and may be relied on; and for beginners this is a rare chance, not only for obtaining a marketable stock sooner and cheaper than the usual mode, but also for securing as good an assortment as can be desired, comprising the principal varieties of merit now cultivated in our country.

All communications, &c., should be sent in as early as possible, to prevent disappointment or delay.

Catalogues furnished to all post-paid applicants enclosing one postage stamp. Address

SHEPPARD, CHERRY, & CO.,
Feb'y, 1853. River Bank Nursery, Rochester, N. Y.

IMPROVED SUPERPHOSPHATE OF LIME, and C. Deburg's No. 1 Superphosphate of Lime.

IN the December number of the Working Farmer, the undersigned is charged with selling superphosphate of lime made by a different manufacturer than Prof. J. J. Mapes, and recommending the same to be of better quality than his superphosphate of lime. We, in answer, do say that we sold upward of one hundred tons of C. Deburg's No. 1 Superphosphate of Lime. We also have and do now recommend it as a better article than that made by Prof. J. J. Mapes, as we had both analyzed by one of the best chemists in this country, and found that made by C. Deburg a superior article. It is made of bone coal dissolved in sulphuric acid, after which a large quantity of Peruvian guano is added, likewise the residue of ammonia chambers, which of itself is an extraordinary fertilizer. We do recommend to every purchaser to request analyses from the vendor of the so-called Improved, and also of C. Deburg's No. 1 Superphosphate of Lime, and purchase subject to such analyses. LONGETT & GRIFFING,

February, 1853.—1f. 25 Cliff street, New York.

Farm for Sale.

THE subscriber offers for sale his farm in the village of Attica, N. Y., containing 137 acres of land, with convenient and comfortable dwelling house, three grain and hay barns, horse barn, and other out buildings.

It is well adapted for a stock or grazing farm, and being located in the village, can be profitably used for pasturing, if desired.

For terms, &c., apply to the subscriber, by letter or otherwise. S. MASON.

Attica, Wyoming Co., N. Y., Feb'y, 1853.—1f*

Superphosphate of Lime.

THE genuine article, manufactured by C. Deburg, in bags of 150 lbs. each. The subscribers have made a contract for a large quantity. We are now prepared to supply any quantity that may be ordered. Farmers and gardeners would do well to call on us before purchasing elsewhere, as we are now able to sell for a less price than heretofore offered. Every bag is branded "C. Deburg, Extra, No. 1."

LONGETT & GRIFFING,

State Agricultural Warehouse, No. 25 Cliff Street, New York. [11-4f]

The Ever-green Sweet Corn.

A FEW BUSHELS of this new and valuable variety of corn, from seed raised by Prof. Mapes, for sale. Per bushel, \$10; per half peck, \$2; per quart, \$1. Sent by express to any part of the United States on receipt of the money by mail. Seedsmen supplied. This is beyond all doubt the most prolific variety of sweet corn ever grown. No farmer should be without it. Address

ALFRED E. BEACH,
Feb., 1853.—1f* White Plains, Westchester co., N. Y.

Farm Implements for California.

BURRALL'S Prize Reapers, Mowers, Thrashers, and Separators; Clod Crushers, Field Rollers, Cultivators, Horse Powers, &c., &c.; all warranted of the best material and workmanship—strong, simple, and reliable,—expressly for that market. Made, and sold cheap for cash, by

THOMAS D. BURRALL,
Geneva, Ontario Co., N. Y.

[2-31]

**Emery's Patent First Premium, 1852,
RAILROAD HORSE POWER,
THRESHING MACHINES, SEPARATORS, &c.,
Western New York Agency.
E. D. HALLOCK, Agricultural Warehouse,
No. 50, STATE ST., ROCHESTER, N. Y.**

THE Subscriber, late from the Albany Agricultural Works, Warehouse, and Seed Store, where he has been engaged for the past six years, has secured the sole Agency for the sale of Emery's Patent Railroad Horse Power for Rochester and vicinity, so widely and favorably known throughout the country, and which has, without exception, taken every highest premium awarded in the States of Ohio, Michigan, and in New York, for the best Railroad Horse Powers, in 1850, 1851, and again in 1852, also at the Provincial Fair of Canada, recently held at Toronto, was awarded a Diploma and £2, of which the judges highly commend the principle and workmanship of this Power, now offer them at manufacturer's prices, with the transportation added, and subject to the warrant as follows:

"To work to the satisfaction of the purchasers as represented in Circulars and Catalogues, or to be returned within three months and full purchase money to be refunded."

For further particulars see Circulars and Catalogues, which are furnished gratis on application to the subscriber. The attention of the Farming public is solicited, and a careful investigation into the construction of this Power, and its comparative merits, as well as price, is requested before purchasing elsewhere.

The Wheeler Power is also offered ten dollars cheaper than heretofore by any other agency, and subject to same warrant as given by others for the same kinds. Samples will be kept constantly on hand, and to insure promptness and avoid disappointments in supplying them, farmers are requested to send in their orders at as early a date as possible.

He will keep for sale, Emery's Seed Planters, the best in use; Circular and Cross Cut Saw Mills, Feed Mills, Corn Stalk and Hay Cutters, Corn Shellers, Churning fixtures, &c., adapted to the Power.

Also, Reapers, Mowing Machines, Grain Drills, Plows, Harrows, Cultivators, Corn Shellers, Hay Cutters, Fan Mills, and agricultural and horticultural implements generally. He will be prepared to furnish dealers with Dunn and Taylor's well known Scythes; also, Manure, Straw, and Hay Forks, Snaths, Rifles, and other haying tools, at manufacturers' prices, wholesale and retail.

Particular attention is called to A NEW PLOW, which is believed to be the best cast-iron Plow ever offered, and which is warranted to do better work, with less expense of team than any plow heretofore sold in this vicinity, while the price is less than for any other equally well finished.

The "uniform one-price, cash system" will be adopted, with the prices as low as the cost of articles and just compensation for labor and time will allow. Farmers and others are invited to call and examine the stock of Machines and Implements,—and are assured no effort shall be wanting to meet promptly the wants of a discriminating public. [11-17] E. D. HALLOCK.

**D. S. MANLEY & BROTHER,
BUFFALO NURSERY,
Buffalo, N. Y.**

HAVING purchased this well established Nursery of its original proprietor, Col. B. Hodge, we take pleasure in offering for sale an unusually fine assortment of

FRUIT AND ORNAMENTAL TREES, SHRUBS AND PLANTS.

Our Fruit Department is supplied with fine healthy trees on their own stocks, of all the desirable varieties now in cultivation, together with Cherries and Pears dwarfed on superior stocks.

The Ornamental Department includes all the best varieties of Evergreen and Deciduous trees.

Roses.—One of the finest collections in this country, comprising all that are new and rare.

Dahlias.—An unrivalled selection of Dahlias, which has been procured at great cost.

Peonias.—We call particular attention to our stock of Peonias, both herbaceous and tree varieties.

The stock of *Shrubs* is unusually extensive and was collected by the late proprietors with peculiar care.

Of Currants, Gooseberries, Raspberries, Grapes, and Strawberries, we have vigorous plants of the best varieties.

It will please us to furnish all applicants with our Catalogue.

NEW, RARE AND VALUABLE SEEDS.

NEW VARIETY OF SWEET CORN.

Hovey & Co., No. 7, Merchants' Row, Boston, WOULD respectfully inform their friends and the public, that they have purchased the entire stock of the *Old Colony Sweet Corn*, raised by the Rev. A. R. Pope, and described by him in the Magazine of Horticulture, Vol. 16, page 529.

It is a true hybrid, and the most remarkable variety ever produced. It was raised in 1847, from the Southern White Corn, impregnated with the early Sweet Corn of New England. The ears are of a remarkable size, containing Sixteen, Eighteen or Twenty, and sometimes Twenty-Four rows each. In its productiveness it is unsurpassed, a single stock planted after the middle of June producing six ears. It is the richest, sweetest, and most delicious corn known. An analysis of it, and several other sorts, by Dr. T. C. Jackson, shows that it is more abundant in saccharine matter than any other variety, its composition being dextrose, sugar and phosphates, while the common varieties contain considerable oil and gluten.

It has been exhibited before the Massachusetts Horticultural Society for three years, and has not only received the commendation of the Society, but has been awarded the following prizes:

1850. For a new variety of Sweet Corn,.....\$2 00

1851. For a new variety of Sweet Corn, called the

Old Colony,..... 8 00

For superior specimens of the Old Colony

Sweet Corn, Silver Medal,..... 5 00

1852. For fine specimens Old Colony Sweet Corn, 2 00

The Committee on Vegetables, of the Massachusetts Horticultural Society, in their report for 1852, remark "That the Old Colony Sweet Corn, raised by Mr. Pope, we recommend as worthy of cultivation by all."

The Old Colony Sweet Corn, though not as early as the Common Sweet, is sufficiently so to produce a perfect crop in New England. Two sowings, one in May the other in June, will supply the table from July until frost. All who have eaten it, pronounce it the most luscious variety, and an invaluable addition to our esculent vegetables.

Single ears 25 cts. each. The trade supplied on reasonable terms.

Splendid Annual from Mexico!

NEW ORANGE GLOBE AMARANTHUS.

HOVEY & CO. have the pleasure of offering to their friends and amateur cultivators of beautiful flowers, one of the most splendid novelties introduced for many years, viz.:

A New Orange-Colored Globe Amaranthus.

In size, the heads are nearly one-half larger than the common Globe; in color, of a deep, rich, glowing orange, with conspicuous yellow stigmas. The plants are also exceedingly vigorous, with linear foliage, and strong, tall stems nearly a foot long, elevating the heads of the blossoms, which literally cover the plants. It is a native of Mexico, and has been in their sole possession three years, during which time it has been the admiration of all who have seen it.

Seeds are now offered for sale the first time, and Messrs. H. & Co. can recommend it as worthy the attention of the trade, and all lovers of elegant annuals.

The flowers of this new Globe were exhibited before the Massachusetts Horticultural Society the past year, and were awarded the Silver Medal.

The trade supplied by the ounce or larger quantity. Single package of seeds, 25 cents. [2-11]

Culture of Cranberry Vines.

THE variety cultivated mostly in New England are hardy and prolific. They can be raised on upland or rather moist loam, but do the best on low, damp or moist meadow land, with a little sand put around the plant. They may be planted out 1½ to 2 feet apart each way.

Two feet apart, it will take 10,000 plants to the acre. If on low ground, it should be pared, plowed, or burnt over, to take out the grass or weeds, and cultivated for one or two years, until they cover the ground. The yield after that is from 150 to 200 bushels per acre.

Good bearing vines can be furnished in any quantity, and packed so as to be safely carried to any part of the United States. For sale by F. TROWBRIDGE, At his Tree, Plant, Seed, and Periodical Agency, 55 Union street, New Haven, Conn. [2-11]

Northern N. Y. Live Stock Insurance Company, Plattsburgh, N. Y. For terms, please apply to agents of the Company.

Stocks for Nurserymen.

WE can supply a few thousand Mazzard Cherry seedlings and Plum seedlings of one year's growth, if applied for soon.

Green House and Bedding Plants.

A complete collection, embracing the newest and best varieties of Fuschias, Pompones, Chrysanthemums, Double Dahlias, Verbenas, Petunias, Ploxes, Scarlet Pelargoniums, and all the most popular bedding plants, of which a descriptive catalogue will be issued in February.

The following catalogues will be sent gratis and pre-paid to all who enclose a postage stamp:

1. A Descriptive Catalogue of Fruits.
2. A Descriptive Catalogue of Ornamental Trees, Shrubs, Roses, &c., &c.
3. Annual Spring Catalogue of Dahlias, and select Green House and Bedding Plants.
4. A Wholesale Catalogue, or Trade List.

Evergreen Trees and Shrubs.

The following Evergreens can be supplied by the quantity, at low prices:

- Norway Spruce, from 6 inches to 2 feet.
 - American White Spruce, 2 to 3 feet.
 - Balsam Fir, 2 to 4 feet.
 - Austrian Pine, 1 to 3 feet.
 - Scotch Fir, 1 to 3 feet.
 - Red Cedar, 1½ to 2 feet.
 - American Arbor Vitæ, 1 to 2 feet.
 - Chinese Arbor Vitæ, 2 to 3 feet.
 - Deodar Cedar, 1 to 1½ feet.
 - Chili Pine, (*Araucaria imbricata*), 12 to 18 inches.
 - Japan Cedar, (*Cryptomeria Japonica*), 1 to 5 feet.
 - Lofty or Bhotan Pine, (*Pinus exelsa*), 1 foot.
 - Himalayan Spruce, (*Abies morinda*), 6 to 12 inches.
- And many other rare species and varieties, forming one of the most complete assortments of Conifers in the United States.
- ELLWANGER & BARRY,
Feb. 1, 1853. Mt. Hope Nurseries, Rochester, N. Y.

Fruit Scions for 1853.

THE subscriber will furnish Scions for this season's grafting, of the celebrated fruits of Western New York:

APPLE.	
<i>Northern Spy,</i>	<i>Ribstone Pippin,</i>
<i>Norton's Melon,</i>	<i>Summer Rose,</i>
<i>Wagner,</i>	<i>Rainbo,</i>
<i>St. Lawrence,</i>	<i>Esopus Spitzenburg,</i>
<i>Cornelia Red,</i>	<i>Yellow Bullfinch,</i>
<i>Sieat,</i>	<i>Rosbury Russet,</i>
<i>Baldwin,</i>	<i>Early Haynes,</i>
<i>Pomme Grise,</i>	<i>Early Strawberry,</i>
<i>Sack-no-further,</i>	<i>Autumn Strawberry,</i>
<i>Herfordshire Pearmain,</i>	<i>Early Joe,</i>
<i>Fineuse,</i>	<i>Full Pippin,</i>
<i>Bourassa,</i>	<i>Holland Pippin,</i>
<i>Twenty Ounce Apple,</i>	<i>Rhode Island Greening,</i>
<i>Hueley, or Dows,</i>	<i>Tulman Sweeting,</i>
<i>Graevenstein,</i>	<i>Green Sweeting,</i>
<i>Bulley Sweeting.</i>	<i>Porter,</i>

PEARS.	
<i>Virgalieu,</i>	<i>Bartlett,</i>
<i>Sackel,</i>	<i>Osego Bourre,</i>
<i>Sicun's Orange, or Onon-</i>	<i>Brown Bourre,</i>
<i>daigu,</i>	<i>Osband's Summer,</i>

and most of the Foreign varieties.

Apple Scions \$1.00 per 100, and Pear Scions Three Shillings per dozen. They will be carefully packed and sent by Express or by Mail. A discount on apple scions will be made to nurserymen.

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JAMES H. WATTS.

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E. C. FROST.

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A MONTHLY JOURNAL OF

AGRICULTURE AND HORTICULTURE,

ILLUSTRATED WITH NUMEROUS ENGRAVINGS OF

Farm Buildings, Domestic Animals, Implements, &c.

VOLUME XIV, FOR 1853.

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P. BARRY, Conductor of Horticultural Department.

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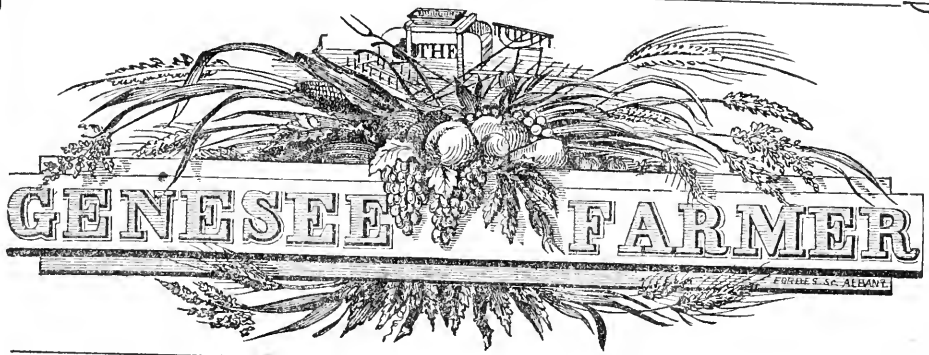
November, 1852.

POSTAGE LAW.—By the new Postage Law, which took effect on the 1st of September last, the postage on the *Genesee Farmer* for one year is as follows,—when paid quarterly in advance:

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STEREOTYPED BY J. W. BROWN, ROCHESTER, N. Y.



HOW LITTLE LIME IN A SOIL WILL SUFFICE FOR ALL USEFUL PURPOSES?

THERE is no question in agriculture more important than the one placed at the head of this article. Many years ago the writer analyzed a large number of calcareous soils for the express purpose of satisfying his own mind what is the maximum amount of lime in land beyond which its presence does no good whatever? These researches led to the conclusion that two per cent. of the carbonate is as good as four, six, eight, ten, or twenty, for all agricultural purposes. Indeed, the instances are rare where one per cent. of lime exists, that the addition of more is beneficial, or pays the cost of the application. Rain water in passing through a stratum of earth which contains from $1\frac{1}{2}$ to 2 per cent. of free carbonate of lime, becomes so charged with dissolved lime, (held in solution by carbonic acid derived partly from the atmosphere and partly from the decaying vegetable matter in the soil through which the water has percolated,) that tufa is formed when the water emerges from the earth in springs. Tufa is a simple mineral, and precipitated carbonate of lime. The precipitation results from the escape of the carbonic acid into the atmosphere, which holds the carbonate of lime in solution, as the water runs from a spring. A case in point may be seen on the farm of Gen. HARMON, in Wheatland, Monroe county. The tufa, or marl, is there being formed at this time, as it is in many other places in that and the adjoining towns. We never found a soil in that excellent wheat district that contained over two per cent. of lime; nor does the use of lime increase the crops on Gen. HARMON'S farm. For many years gypsum has been used to advantage by nearly all the farmers of Monroe and Livingston counties. This mineral abounds in Wheatland in beds, but is not generally diffused through the soil. Like tufa, it is constantly being formed, as is sulphuric acid, (one of its constituents,) by the chemical union of the acid named with lime. Oil of vitriol, or sulphuric acid, is formed by the union of oxygen with sulphur, as the latter exists in combination with iron. There are springs in Monroe county whose water is charged with sulphuric acid. All such water coming in contact with lime must form gypsum. Now, there are thousands of soils that abound in iron, alumina, (the basis of all clay,) and sulphur or sulphuric acid, which lack lime. So, too, there are thousands of soils that abound in the phosphate of iron and the phosphate of alumina, which lack the calcareous element required to form bone-earth, or phosphate of lime.

Appreciating the value of gypsum and bones as fertilizers, the reader is prepared to consider the importance of lime in all farming lands. The least quantity that will neutralize all the organic and mineral acids that may be developed in the soil, and have a small excess of the alkaline earth, is the dose of marl or lime needed to secure the highest possible benefit from its application. A soil may have one-tenth or nine-tenths

of the lime required to fulfil all the functions of this mineral; and therefore the dose to be administered varies indefinitely. Of all chemical manipulations, that of separating carbonate of lime from a soil is the most simple and satisfactory; but a vast number of analyses must precede any trust-worthy generalizations in answer to the question, "How little lime in a soil will suffice for all useful purposes?"

Thousands of cases might be cited where the liming of meadows, pastures and tilled lands has operated beneficially; but, unfortunately, no one knows or ever knew, the quantity of lime in these soils at the time more was applied to them. To remedy this defect, we intend to analyze to the extent of ascertaining the amount of lime in a cubic foot of the soil, a large number of samples from the districts where marling and liming are most extensively practiced. One farmer in the State of Delaware who uses over seventy tons of Peruvian guano a year, at a cost of some \$3,500, told us a few days since, that about a million bushels of lime a year are bought and used by the farmers of that little State of three small counties. Whatever elements of grain, grass, and roots, air and water do not supply, the cultivators of the poor soils of that State are compelled to furnish. This is bringing tillage and husbandry up from an empirical or imitative art, like squirrels gathering into their holes the nuts that nature produces, to the dignity of a study, and a learned profession. How much of the substance of the soil is consumed in growing an acre of wheat yielding twenty-five bushels, or one of corn, producing fifty bushels? What part of these and other crops will air and water supply?

Some of the farmers of New Jersey, Pennsylvania, Delaware, Maryland, and Virginia, are beginning to investigate these interesting problems. The readers of this journal for the last ten years need not be told that the writer studied them at an earlier date. These problems are inseparably blended with the action of lime in the soil, as the most successful improvers of poor lands in the States named, have found out by repeated experiments in marling and liming. Such improvements, including the purchase of bone dust, super-phosphates, gypsum, poudrette, guano, and stable manure, are expensive; and whether too much or too little lime is used may decide the important question whether a *loss* or a *profit*, is realized in the operation. The right use of manures of all kinds, is a matter yet to be decided by experiments conducted with great care and on true scientific principles. One thing, however, may be regarded as settled, and that is, the fact that any given quantity of the dung of animals, whether of birds, cattle, sheep, horses or swine, will produce more grass and grain on a calcareous than on a non-calcareous soil. If any one doubts this, we respectfully invite every agricultural society in the United States to investigate the causes why limestone lands are richer than others; and why so many millions of tons of lime, since the conquest of Spain, France, and Britain by the Romans, have been used as amendments to arated fields. Lime *alone* never formed the thousandth part of a grain of wheat. There is usually twice as much magnesia, and five or six times more potash in a bushel of wheat, than lime. It is then an exceedingly interesting question, how little is enough to secure the highest fertility to all improved lands. No society, or legislature ever afforded us the least assistance in prosecuting researches connected with the critical study of soils; and as we have no peculiar interest in agricultural science, and not the means to labor for nothing, we are compelled to wait for public opinion to ripen, however unpleasant the long delay. The time approaches when capital to the extent of indefinite millions, will be invested in making American lands precisely what they ought to be, to yield their maximum of all desirable and appropriate crops. In this great agricultural labor, lime will play a conspicuous part. If one were to separate all the lime in an acre of the best wheat lands in Western New York, to the depth of ten inches, he would have from ten to twenty tons. Assuming that an average of five tons per acre are needed on four-fifths of the improved farms in the Union, we discover at once a market for 500,000,000 tons

of lime. It can hardly be burnt, transported to the fields, where it is to be used, and spread, at less than two dollars per ton, on an average, so that the liming of 100,000,000 acres involves an outlay of one thousand million dollars.

These suggestions are made to show the vast importance of more knowledge than we now possess, of soils and their products. This country throws away one hundred million dollars a year in misapplied labor and capital, rather than expend a few dollars for the careful and systematic investigation of the laws of nature, in their application to all farming operations. If ignorance were wealth, how rich we should all be!

There is not a single element of fruitfulness that has been thoroughly studied in this great republic. Its citizens are content with the idle repetition of scientific terms and phrases, without increasing in wisdom. Hence it is, that in all America there is not one agricultural school to lead the minds of youth from the few things known about the principles of agriculture, to the more than Californian wealth which exists in the unknown, but within the reach of all. How much longer shall we cling to that ignorance which is nothing but weakness, and turn our backs upon that knowledge which is power?

THE PROPER MANAGEMENT OF SANDY SOILS.

A MUCH esteemed friend has requested us to write an article on the proper management of sandy soils, especially in regard to those which have been "hard run," or much impoverished by successive cultivation of wheat and corn. The subject is one of great importance, and merits a much fuller investigation than the crowded state of our columns this month permits. We regret this the less in the hope that some of our able, experienced correspondents, will take up the matter and fully discuss it.

Soils containing a large proportion of clay and lime, or such as are naturally good wheat soils, stand cultivation and the removal of large quantities of grain much better than light, sandy soils. Various reasons are assigned for this. It is said that these heavy soils contain originally more of the organic and inorganic constituents of plants than light ones. Their compact nature by excluding the air, prevents decomposition, and so the matter locked up in them remains without loss till by plowing and cultivation the air is admitted, and these latent elements become active, soluble, and available as food for plants. Again, it is probable that when these soils are under-drained and properly tilled, they retain the greater portion of the ammonia brought to them in rain water. Sand has not this power to retain ammonia at all, and sandy soils possess it to a small degree only.

The manner in which clays retain ammonia is a matter of dispute. It has been supposed that they held it mechanically; but the recent investigations of Mr. WAY indicate that the ammonia enters into chemical combination with the double salt of silicate of alumina and soda, decomposing it and forming a double salt of silicate of alumina and silicate of ammonia; and that the large amount of silicic acid which the straw of wheat contains, is taken up by the plant as silicate of ammonia. This double salt of alumina and soda is found not only to retain the ammonia of rain water, but also to attract it from the atmosphere when brought in immediate contact with its particles. Hence the value of summer fallows on heavy soils. Not only is the decomposition of the soil facilitated by the admission of air, but this air actually carries with it the very fertilizer most needed by our wheat crops—ammonia.

But here there is a wide and most important difference between clays and sands. Sandy soils contain but little of this double salt, to attract ammonia from the atmosphere, or retain that brought to it in rain. Summer fallows, or frequent plowings and harrowings on such soils, are of no use except to destroy weeds. What is to be done? In

the heavy soils the clay retains the ammonia of the rain and air. In sandy soils we have not this retaining substance to any extent, and must therefore supply one. We are privately informed that Mr. WAX is very sanguine in regard to manufacturing this double salt we have spoken of, and that he is now experimenting on the subject. We hope he may succeed, and that the method of composting it will be such as every farmer can practice on his own farm; otherwise the weight of the article will prevent its extensive use. Carting marls on to sandy soils has been practiced in England and this country, to great advantage; but if we could pick out the particular ingredient of value in these marls, and apply it easily to light soils, the advantage would be obvious, and such as to secure its universal adoption. In the mean time, we must grow *plants* that retain this ammonia of rain and air. Wheat, corn, barley, oats, buckwheat and timothy, destroy ammonia during their growth. Clover, turnips, peas, beans, lentils and vetches, retain the ammonia brought to them in rain; and when consumed on the land, or plowed under, furnish the required ammonia for the following wheat or corn crop.

The proper management of sandy soils is here indicated. Grow fewer wheat, corn, barley, and timothy crops; and more clover, peas, and roots, and let these all be consumed on the farm. Under ordinary circumstances, never sow wheat without seeding the land down with twelve pounds of red clover in the spring. Do not let it lie in grass more than two years, for as clover is a biennial plant, the third year you will get very little but cereal grasses. Turnips may be sown with corn after the last hoeing, and though you get little but leaves, these will help to increase the amount of available ammonia on the farm, and so do good service.

As long as good crops of clover can be obtained, we may rest assured that there is no deficiency of mineral matter in the soil. But the time will come, and that soon, on sandy soils, when good clover crops can no longer be grown. To prevent this, apply all the leached and unleached ashes, bones, and lime at your disposal, on the clover crops, and they will do good service. On no consideration let them be wasted. They will be needed sooner or later to restore the phosphates and potash removed in the grain and bones of animals sold off the farm.

Superphosphate of lime, drilled with the seed, will be found the best of all manures for ruta бага and other turnip crops. It is on sandy soils that turnips succeed best; and it is these soils that are most improved by the growth of turnips and clover. The light, blowing sands of Norfolk, England, which fifty years ago were barely worth cultivating, have been made by turnip culture and sheep husbandry the most valuable and productive land of Great Britain. Sandy soils, or "turnip soils," are now far more valuable than the heavy, or "wheat soils." If we might believe English protectionists, the heavy wheat soils cannot now, with free trade prices, be cultivated with wheat without serious loss, and must be laid down to permanent meadow.

With the increase of population and manufactures, we shall obtain higher prices for *meat*. Its production, and the growth of turnips, clover, and other cattle food, will be attended with more direct profit than at present. More turnips and clover will be raised as food for cattle, and our average yield of wheat and corn will be greatly increased. Sandy soils will be benefited by such a change more than our heavy, good wheat lands.

On sandy soils there is often accumulations of muck or peat rich in nitrogen, containing from one to two per cent. of this valuable fertilizer. (Ordinary barnyard manure contains only one-half of one per cent. of nitrogen.) It will be seen that this muck, if dried and decomposed, will be a most valuable manure for sandy soils. It is necessary to decompose the muck before its constituents can be taken up by plants. Ashes and lime readily decompose it, and are often used for this purpose by first rate farmers; but we should no more think of mixing lime or ashes with muck than we should with farmyard manure. Their tendency in both cases is to drive off the ammonia, and to render

the mixture of comparatively little value. We would compost the dry muck with horse manure, and with any animal or rapidly fermenting matter we could obtain. We would also use the dried muck as an absorber of the liquid excrements of the stable and hog pens. Any means the farmer can adopt to accumulate ammonia, especially on sandy soils, will be attended with direct advantage in increased crops.

TERRA CULTURE.

"It contains much, sir, both of what is new and what is true; but, unfortunately, what is new is not true, and what is true is not new."—*Sheridan*.

MR. J. S. WOODWARD, of Wilson, Niagara county, N. Y., and several other correspondents, have requested information in regard to RUSSEL COMSTOCK'S discovery of "a universal law in vegetation," and on his system based thereon, called "terra culture;" and whether we would recommend a young farmer to attend his lecture. We have also received several communications from individuals who have heard the disclosures, all of which we should like to publish did our space admit.

We have hitherto considered the "discoverer" unworthy of an extended notice; but as the subject appears to be creating considerable interest, we will freely express our opinions. Before giving them, however, we shall endeavor to tell what this wonderful *secret* is, if indeed we are able to do so; for, after listening to Mr. COMSTOCK for several hours, we had to ask him, in good faith, what there was in all the long and incoherent array of words we had been listening to, that he considered *his secret*, and a *law of nature* discovered by *him*, for the divulging of which we had paid the dollar. But some of our readers may be ready to ask if an obligation of secrecy was not imposed, and if it is fair and honorable to make public the information promised to be kept secret. To this we reply: If this pledge was made under false representations—if we have been willfully deceived by this pretended discover of a *new natural law*—if his wonderful *secret* is all a *humbug*, kept up for the purpose of robbing farmers of their dollars, and all that is of any real value in these disclosures is to be found in books accessible to all,—then it is not only *right*, but it becomes our duty as conductors of an agricultural journal, to expose this whole matter, and if possible prevent this gross imposition. But if this does not satisfy Mr. COMSTOCK of our right to make public his impositions, he has the satisfaction of knowing that he was the first to violate the bargain, and thus released us from all obligation.

We observed that we had difficulty in ascertaining what Mr. COMSTOCK claimed as his secret, even after we had listened to his lecture for several hours; and yet Mr. C., in his petition to Congress for an appropriation, says "the reality of his discovery and its application to the whole vegetable kingdom is demonstrated in *less than thirty words*." It was perhaps unfortunate for us that we were so dull as not to more readily comprehend the Professor's teachings; but we have the consolation of knowing that all others we conversed with were as ignorant as ourselves. But, for the *secret*. The point of union between the roots and the trunk or stem of a tree or plant, and which gardeners call the *collar*, the Professor declares he has discovered to be the *seat of life*, and that in all trees and plants this collar, or *seat of life*, should be just even with the surface of the ground. This is all there is of this wonderful discovery of a *new natural law*, to learn which the farmers are called upon to pay out their dollars, for the discovery of which he petitioned Congress to vote him about a million of dollars, using the following pathetic language:

"For the honor of the Republic, for the honor of the age, and for the interest and comfort of the living, as well as the unborn, let not that discovery which may cause two seeds to ripen where one

now does, which prevents the premature death of all cultivated trees, which has been searched for in vain during the history of all civilized society, die with the discoverer for want of the action of the United States Congress."

Now what there is new or *secret* in this, except a *name*, we can not perceive. The injurious effects of planting trees deeper than the *collar*, have been proclaimed by good gardeners for these many years. In an excellent article on *Deep and Shallow Planting, and their effects on Trees and Plants*, in the *Annals of Horticulture* (London) for 1848, we find the following remarks :

"Among the conditions imposed on the planter should be that of supporting, by some means, all shrubs and trees above a certain height, and also that of planting nothing lower in the ground than will bring the *collar* of the root level with the general surface. * * * * In no case can a tree or plant (except those of the nature we have mentioned) flourish if the collar be lower, that is, materially lower, than the surface. * * * * First, on no account plant anything deeper in the earth than it has been before; let the collar of the root be level with the general surface, or above it, for if the roots do not like to be so shallow, they will of themselves go down lower. * * * * If any of the doubtful will take the trouble to plant two young fir-trees, one six or eight inches below the collar, and the other exactly the depth of the collar, they will convince themselves in one season of the necessity of attending to these few hints. * * * * With the exception of the vine, and some few that strike root at every joint, it is as important to keep the collar well up to the surface, and the roots spread, as it is to plant them at all."

In *Bridgman's Young Gardener's Assistant*, published in 1845, we find the following :

"In transplanting fruit trees, let the collar, or that part from which emanate the main roots, be near the surface. * * * * With a view to illustrate the evil of deep planting, I would observe farther, that when cabbage plants are transplanted in proper season and on good fresh soil, they generally prove uniformly good; whereas, if it should happen, as it sometimes does for want of suitable weather, that the plants cannot be transplanted until they get crooked and overgrown, so as to require deep planting to support them in the soil, such plants, like diseased peach trees, decay first in the bark, between earth and air, and then, from being deprived of a natural circulation of the vegetable juices, die, and discharge their putrid matter in the earth, to the destruction of such other plants as may be inserted in their stead. I have frequently known a land of cabbage plants filled up half a dozen times, and the crop at last scarcely worth gathering, whereas, could the plants have been set out while dwarfish, and inserted their proper depth in the ground, the cultivator would have been rewarded a hundred fold. I dislike *tautology*, but cannot avoid repeating my humble opinion, that *deep planting* and injudicious culture are the causes of most of the diseases and failures of fruit trees."

LINDLEY, in his *Theory of Horticulture*, when speaking of transplanting trees, and more particularly of forest trees, says :

"Place them as nearly as possible in the same condition, with regard to the soil, that they were in before removed."

From these extracts it will be seen that this *great secret* has been known to writers on horticulture and vegetable physiology for these many years, and the proper course urgently recommended. Professor COMSTOCK recommends the same course, only changing words and calling what gardeners call the *collar*, the *seat of life*.

"Strange such a difference there should be
"Twixt tweedle dum and tweedle dec."

The bad effects of too deep planting Mr. COMSTOCK says is to cause the tree to throw out roots above the natural seat of life, and thus the seat of life is removed higher up, and the old roots die, as well as the stem or branches, and a new shoot is thrown up from the new roots, which the Professor calls a sucker. Now we think the Professor would find it difficult to make many of our fruit trees throw out roots above the natural *collar*. Some plants, (grape vines, for instance,) will freely throw out roots from every joint, and these are seldom injured by deep planting. We have planted vines raised from layers, having a fine mass of roots at two joints, and after five years of fine growth and fruitfulness, having occasion to remove the vine, found the lower roots healthy and vigorous. A little experience we should think would teach Mr. Comstock his error in this respect.

From the many communications received we select the following, and leave the subject for the present :

"INTERESTING INSTANCES OF THE GROWTH OF TREES, GRAIN, AND VEGETABLES, CONTRARY TO 'TERRA, OR SKIN-DEEP CULTURE.'—1st. A peach tree standing near where I wished to dig a cellar, a bank of rich dirt eighteen inches or two feet high was thrown around it, and the result was, not the death of the tree, Mr. Comstock, [he asked me if it did not kill the tree,] but an abundance of fruit, which ripened nearly a month earlier than the year before, and so much better that you would not suppose that it grew on the same tree. This was some six years since, and the tree is still flourishing and fruitful.

"2. An old, favorite cherry tree, at my father's, twenty years since, treated in precisely the same way, is still living and thrifty.

"3. A little east of the culvert where the Irondequoit passes under the great embankment, an orchard was buried in some places quite to the limbs of the trees, by a break in the canal some twenty years since. I believe that not a solitary tree has died in consequence, and the whole appear as thrifty as other orchards in the vicinity.

"4. A tamarack tree, around which the ground was raised some eighteen inches, in digging my fish pond, has grown rapidly ever since—five or six years.

"5. Two fine asparagus roots were accidentally covered, I do not know how deep, with rich mold scraped out of a ditch. This was in the fall. A year from the next spring, rather late, some stalks of asparagus, nearly as large as hoe handles, came up near the bank of the ditch; while my other asparagus, that happened to be terra-cultured, bore little spindling stalks. The shoots from the other found their way out of the bottom of a hole which I dug to set a barrel in, as a reservoir for a water ram.

"Before the invention of gang-plows and drills, we used to plow in our wheat by guaging the plow so as to cut a furrow four or five inches deep. The result was not spindling stalks and a poor yield, but wheat as stout and thick as it could grow, often yielding forty or fifty bushels per acre on good land.

"Now, Messrs. Editors, it will probably be obvious to you, and others who have been admitted to the mysteries of Mr. Comstock's system of terra culture, that what took place in relation to those trees and garden plants which I have mentioned, would have proved fatal to them by removing the seat of vitality from—I am not permitted to tell where. So of grain: he says that by covering it so deep, [Mr. Editor, if I am likely to 'let the cat out,' you may step on my toes,] the point of vitality, or seat of life, will be injured, and long-jointed stalks and a light crop will be the consequence.

"Mr. C. says that his system is according to nature, if I understand him. Well, after all, dame Nature is not so difficult and capricious as some people imagine. We will suppose two or three cases: The farmer, in clearing off his land, leaves here a nice hickory, there a butternut, and a little further a maple, for fruit or shade. These are in a state of nature, or something like 'terra culture.' Pretty soon three or four yoke of oxen are tearing the plow among the roots of these 'slim saplings,' and year after year this process of cultivating and scarifying goes on. What is the result? Not the death or decay of the saplings; but instead, the large, thrifty, symmetrical ornaments which adorn our fields, with grains nearly an inch thick, as we find when we cut them for timber.

"The asparagus is said to have been originally a sea-plant, but accommodates itself on terra-firma, and with plenty of its original seasoning furnishes us with one of the best dishes which our gardens produce. In fact she seems to smile approvingly on all right efforts which we make to improve her productions. By *thorough* culture (not "terra culture") she gives us beautiful flowers and fruits in place of those which were ordinary and worthless. Ever recuperative and vigorous, if, in cultivating among our trees, we break a root, she immediately sends out numberless smaller fibres and the growing process goes on as well, and perhaps better, than before, Mr. C.'s little dry sticks to the contrary notwithstanding.

"But there is one thing she does not like, and that is to be robbed of the food which she needs to bring her productions to perfection; and what the *Genesee Farmer* has been urging for years in regard to this robbery, we shall find to be true by and by.

"Mr. C. says his system will do away with the potato disease. Was his system followed thirty or forty years ago when this disease was unknown. His substitute of ———, instead of deep and thorough cultivation among corn and potatoes, might answer in a four foot bed in the garden, but in a twenty or fifty acre lot it would be impracticable and wasteful. Manure on the surface of the ground loses one-half or two-thirds its value by evaporation.

"Well, Mr. Editor, perhaps I have said enough; I don't know as I have made out much, but have the vanity to think that the reason is, there was not much against which to work; and I have, from my own observation and experience, come to the conclusion that "terra culture" is a humbug that is not worth the dollar. P. PARKS.—*Victor, N. Y.*"

Mr. P. will not be understood as recommending deep planting, but *thorough culture*, which COMSTOCK says is labor worse than wasted. Mr. C. stated that any tree covered above the "seat of life" would certainly die, this being a *natural law*, and to it there was no exception.

HINTS.

THE present is the last winter month, and a few reflections at this time may be useful. As this has been, in almost all parts of the country, an "open" winter, it afforded a good opportunity to repair fences and gates and do other out-door work, which we will suppose has been attended to; if not, improve the time the present month. Are the implements all in order? The blacksmith is now at leisure, and will do any repairing you need without hurry, and consequently well. It will be very annoying if you leave such things until you have to lose half a day's work running to the blacksmith's shop, and when you get there perhaps find him so busy that he can scarcely attend to your wants. If you want anything new, now is the time to take a jaunt to the city or village and make your purchases. Some men are always "bothered," and half the time out of temper because they neglect such things until work "drives" them. It is always better to "drive" work, than to be "driven" by it.

Now, too, is the time to make arrangements about the disposition of your lands. You have time to think, and *thinking* is what distinguishes the farmer from his ox. Consult your intelligent neighbors; consult your agricultural papers and find out what others have done under similar circumstances, and with what results. Weigh the opinions of all carefully, make up your mind with caution, have your plans well matured, and when the season is right to strike the blow, you are ready. You have no need to halt or hesitate.

In the fall you probably noticed some seed that you thought at the time you would like to try another season. Get it now if you can, for when you get busy you will forget it; or, if you think of it, will not find time to procure it. Think this matter over a little, and after you have concluded what change of seed you ought to make, or what new crop you will introduce, do it up at once; have all ready, and you will not have to say, at the close of the next season, that you have left undone many things that you intended to do. Every man that observes and thinks, learns a little by *experience* every season that he cultivates a crop. Some things prosper under some circumstances and fail under others. This is generally noticed at the time, but too often forgotten because no memorandum is made of the circumstance that can be referred to at leisure. Think over the results of the past, and gain knowledge for the future.

In your reading the present winter you have noticed some things which looked very plausible and which you mentally resolved, at the time, you would test for yourself. This is right; but unless you have it very firmly fixed in your mind, or have it in your memorandum book in black and white, ten chances to one but you will forget it just at the time you intended to put it in practice. Whatever experiments you make, try carefully so that you be not deceived yourself nor deceive others. Never guess at weights or measures, or quantity of land. It always looks bad for one to say, when giving the result of any experiment, the quantity of land was "*about*," and the yield "*about*" so much. If you test any special manure to ascertain its value, it is best to try part of the same field with barnyard manure and part without any. If this was done, it would not be as easy for manufacturers of manure nostrums to get certificates of its value. How few know which is the most profitable crop they raise, or how much is expended in manure and labor in raising any crop. It is well to keep an account with the different crops and fields, so as to ascertain what pays the best for labor and expense. This is the way business men do, and why not farmers?

Have you tried root crops—carrots, ruta bagas, &c., for feeding stock? If not, perhaps the present season is just the time to test the matter on a small scale. Perhaps some persons in your neighborhood can give their experience; if not, you can find the testimony of many in the agricultural papers.

BRITISH AND AMERICAN AGRICULTURE.

(Continued from Page 17.)

B. I see from the newspapers that the winter in England and France has been as unusually mild as with us.

A. So it would appear; yet, as a general rule, the weather in Europe is reverse of what it is here. Last winter, in England, was remarkably open, while here it was very severe. Last fall, in England, was one of the wettest experienced for a long time, so much so that a very large proportion of the land intended and prepared for wheat, could not be sown. If, however, the winter has been as warm as asserted, I have no doubt much of this land has been sown. Wheat is often sown as late as December, and does well.

B. What is considered the best time to sow wheat there, and how much do they sow to the acre?

A. The last week of September and the first of October is considered the best by most good farmers. The quantity of seed sown, varies exceedingly in different districts; from *one peck* to three and a half bushels. Some of the "new lights," such as DAVIS, MECHE, HUXTABLE, and SMITH, have advocated very thin sowing, and they have undoubtedly obtained very large crops from not more than a peck of seed per acre. Their writings, example, and results, have had some influence in reducing the quantity of seed sown per acre. Many farmers I met with who, twenty years ago, thought three and a half bushels of wheat none too much seed per acre, now think two and a quarter amply sufficient. They have, however, failed to convince practical farmers of the economy of sowing only a peck or even a bushel of wheat per acre. They find that while in many instances thin sowing produces excellent crops, those who adopt the system on a large farm have invariably more or less land that is much too thin, and either has to be plowed under and sown to spring grain, or yield a very indifferent crop. The loss on these few acres more than counterbalances the gain by sowing thin.

B. I suppose they always drill in their wheat and horse or hand hoe it in the spring.

A. Most of the wheat is now drilled in. It is commonly estimated that the drill saves half a bushel of seed per acre, and gives, at the same time, a larger crop. It is generally drilled about six inches apart, *and is not hoed*. Those who hoe their wheat, drill it about a foot wide; but the practice of hoeing is anything but common.

B. In the last volume of the *Genesee Farmer* there was a cut of a horse-hoe for wheat that appeared to me to be well calculated to perform the operation with economy and speed. I have often wished we had some such an implement here. Our lands are now pretty clear, and I think it would do good service on our Western New York lands.

A. I have seen the wheat-hoe you speak of at work. It is a good thing, but like all the English implements, it is too heavy and complex. Unless the rows of wheat are drilled as straight as an arrow, you are sure to cut up as much wheat as weeds; and, in any case, it requires a strong man with a steady hand to guide the hoe straight.

B. I should think some of our implement makers could lighten, simplify, and cheapen this hoe, improve it, or make a new one that would do good service and come into general use. Labor is so much higher with us than in England, that the difference in favor of horse-hoeing is much greater here than there. Don't you think it would pay to hoe our wheat if it could be done cheaply.

A. I think it would, but I doubt very much whether the practice can ever generally prevail here. The land would not be dry enough to hoe much before the first of May, when the wheat is growing so rapidly that it would be difficult to hoe a considerable breadth before the plant would be so far advanced as to be injured by it.

B. It appears to me that you think there is but little in the best system of British agriculture that we can adopt here with advantage.

A. If we understood the principles of their agriculture better, we might draw our own deductions from them and modify their practices and adopt new ones suited to our peculiar circumstances. It is in this way that we can profit by the experience of European farmers, *and only in this way*. The farmer who, by empirical experience, discovers the best way of cultivating the various crops on his own farm, is worthy of much praise and greatly benefits the farmers of his immediate district, who profit by his example; but he who searches after and discovers the *principles* on which

a judicious system of agriculture is based goes far beyond this, and benefits not only his immediate neighborhood, but the intelligent farmers of the whole world. I wish, for our own benefit and national credit, that we had some institution set apart for discovering new principles in agriculture. As I have before said, we have in this country better means in operation for *diffusing* agricultural knowledge, than any other nation in the world; and yet what does all this immense machinery *create* in the way of knowledge? Our scores of agricultural papers, our State and County societies, the empirical experiments of hundreds of farmers, carried on as they are at vast expense, positively generate not one single principle of agricultural science that can be universally applied in general practice.

B. You are getting quite warm on the subject. Did I not know to the contrary, I should suppose you underrated the value of our agricultural papers, societies, exhibitions, &c. I know you do not, for I have often heard you say that these papers and societies were of incalculable value to the farmer. The papers give us the experience of others, and often contain suggestions for cultivating crops and for performing all the multifarious labors of farm management to the best advantage, such as we should never have thought of ourselves. Our exhibitions of farm products, the test of skill in plowing, &c., stimulates us to exertion and renewed strife after improvement, which must be productive of much good.

A. That is all very true. The societies and papers are good and indispensable as a superstructure; but to accomplish their greatest good to agriculture, it is absolutely necessary that they rest on a firm, well-demonstrated, experimental basis of science. At present we have the superstructure without such a foundation. The baneful consequences to agricultural science are too apparent to be disputed. What paper or society has ever told us practical farmers the *reason* why plowing in a crop of clover benefits the following wheat crop, while a crop of buckwheat does not. Scientific experiments have demonstrated the reason; and now it is as clear as noonday. What we want is similar experiments in our own country, on our commonly cultivated crops.

B. You think, then, that we can derive no benefit from an intimate acquaintance with the various modes of British husbandry, but that we must demonstrate principles for ourselves, and trust to our own ingenuity for applying them to the art of agriculture.

A. I will not exactly say that. I think I have learned considerable by my visit to Europe, though I cannot point out the particular parts of tillage in which we might profit by English practice. Their system of under-draining is reduced to a science, and no one can personally examine the different modes of draining there without deriving much valuable knowledge, such as would cost him many years of dear bought experience to acquire here.

B. I must have a little more conversation on the matter of draining next time we meet. I intend, like yourself, to under-drain one of my fields this year, and shall be glad of any hints and directions.

A. It will give me great pleasure to assist you all I can. I believe nothing will so much improve our national agriculture as under-draining, and I am pleased that so many are going into it. Hitherto we have had to pay exorbitant prices for draining tiles in this neighborhood, but I am told that parties are now making arrangements for their manufacture in Rochester, and that we shall obtain them at a much cheaper rate.

B. Bye the bye, I have just been reading an account of the Smithfield Club Cattle Show. It appears that the tenant farmers have carried off most of the prizes, beating the Earl Ducie, Duke of Richmond, and his Royal Highness Prince ALBERT, and other noble competitors. The fact is a significant one. These amateurs breeders, that spare no expense in purchasing the best stock, and do not care even if they loose considerable money in keeping it, have been beaten by common practical farmers who adopt the business as a means of making money. Time, care, judicious selection, and personal attention in stock raising, must ever triumph over mere theorists and amateurs.

A. The Earl Ducie and Duke of Richmond, however, are by no means "mere theorists." I believe there is not a better judge of cattle in Great Britain than Earl Ducie.

B. So much the more credit then to the farmers who beat him. The weight of the prize sheep at the last Smithfield show, as given in the papers, is hardly to be credited. One in the "long-wooled" class, weighed, when dressed, 556 lbs., and had besides 49 lbs. rough fat. In the "cross breeds," one gave 524 lbs. carcass and 57 lbs. rough fat, with a "hide" of 76 lbs. In the "short wools," the heaviest carcass was 489 lbs. The first prize "Devon steer" yielded 948 lbs. beef, 145 lbs. rough fat, and 68 lbs. of hide.

RUTA BAGA—WHAT IS A MAXIMUM CROP?—Last year I received the first premium at our County Fair, for my crop of ruta baka, yielding at the rate of sixteen hundred and sixty-six bushels per acre—the largest crop ever reported in this country. My report of this crop has been extensively copied, and has been received by some with distrust. An attempt to sustain that report seems to be justified by the importance of the subject, and demanded in self-defence.

It is objected that so large a crop has never been produced even in England, and it is inferred that therefore I must have been mistaken.

Now, in the first place, I protest against this inference; it is a *non sequitur*. Why may I not raise a larger crop than England? England has no superior natural advantages. The only advantage claimed is that of *climate*; and that is a mere assumption, and has not been proved. Our climate has been unjustly condemned *without a trial*. All the advantages were on my side. By beginning where England left off, I had the full benefit of her experience. Her crops are cultivated by the ignorant. Intellect and science may plan and direct, but do not plow or hoe. Her laborers do not *reason*; they only work. My crop was cultivated entirely by myself, and not a blow struck without a reason. My motive was an inflexible purpose to advance the agricultural art, while theirs was to secure their dinner and their rent. In competition with such human machines, ought not I to excel? The soil of England has been worn for two thousand years; mine was new. Hers almost entirely artificial; mine as formed by the laws of nature; in it God has been collecting and garnering up the elements of fertility for six thousand years. To believe it inferior to the man-made soil of England, is absurd. We ought, then, to produce better crops than England.

This objection, then, proves nothing, if it were true; but it is not. Larger crops than mine have been raised in England. My crop would probably weigh forty tons; but the *Working Farmer* for 1851, page 176, alludes to an experiment producing forty tons six hundred weight; and again, in the volume for 1850, page 148, it is stated that Mr. NESBIT, in the Farmers' Club in London, alluded to a crop of his own, weighing 44 tons, and another crop of his neighbor, still larger. A book so common as *Johnston's Agricultural Chemistry* publishes, App. p. 46, a crop of small white turnips, the largest weighing only from 5 to 8 lbs., yielding 39 tons 15 cwt. This is equivalent to at least 50 tons of ruta baka. The same author, page 487, quotes from the second report of the Royal Agricultural Improvement Society of Ireland, page 57, a crop of turnips weighing 56 tons, and including tops, 76 tons. "An acre in our island," says the same author, "has been known to produce sixty tons of turnips, and perhaps that is not the maximum!"

"But," says the correspondent of the *Germantown Telegraph*, "I can not imagine how forty tons of turnips can possibly stand on an acre." This question is not one of *imagination*, but of arithmetic. The maximum weight of the ruta baka is twenty pounds each. The largest of mine weighed fourteen. My neighbors had some weighing twenty. J. MONT, London, says: "Plenty of mine weighed seventeen pounds. Turnips are planted in rows two feet apart, and from eight to twelve inches in the rows; the most liberal allowance being *two feet* surface to each root. An acre is 43,560 feet, and of course will sustain 21,780 plants. Multiply this number by one-half the maximum weight of roots, that is ten pounds, and we have the weight of what ought to be a medium crop—217,800 pounds, or more than 100 tons. Surely, then, a crop of 40 tons is not incredible.

I wish to say to farmers who may notice this statement—

1. Our cattle always suffer more or less from the violent change from the green grass of summer to the dry hay of winter.

2. Roots are in their composition, like green grass, and may be kept all winter in their green state; and a portion of root feed is the most economical policy.

3. In this climate there is no *substitute* for roots for cattle.

4. They cost only from two to five cents per bushel.

5. A larger quantity of root food may be fed from a given quantity of land, than of any other kind.

6. The larger the yield per acre, the lower the cost per bushel.

The plowing should be deep, manuring high, and hoeing frequent and thorough. J. T. ANDREW.
—*West Cornwall, Conn.*

It will be recollected that in the April number of the *Farmer* for 1852, we gave an abstract of Mr. ANDREW'S method and success in cultivating ruta baka, saying that his results "gave encouraging evidence of the successful application of skill and science to

farm husbandry," and knowing that it was very generally supposed that this climate was not so well adapted to the profitable culture of root crops as Great Britain, we hazarded the following assertion: "We speak advisedly when we pronounce $41\frac{1}{2}$ tons a greater crop than has ever been raised in Great Britain. 25 tons is there considered a first rate crop, and is seldom exceeded." We said this, not in the least to intimate a doubt that Mr. ANDREW'S crop was not $41\frac{1}{2}$ tons per acre, but as practical proof that our climate and soil would produce better roots than England. When we made the above assertion, we were aware that there were many published accounts of 40, 50, 60, and even 70 tons of turnips per acre, reported by men of undoubted veracity. Upon investigating these statements, however, we generally found that the methods of admeasurement were of anything but an unexceptionable and satisfactory character. In some cases a few yards of a single row only had been weighed, and with the weight thus obtained as the basis of calculation, the acreage yield had been determined and published. Others would "stride off" an acre, and count the number of "cart loads," estimating the cart to contain a certain number of bushels, and the turnips to weigh so many pounds per bushel; and in this way calculate the weight per acre. Any one can see that it is easy in this way—especially if you think you have a large crop, and wish others to think so too—to make a crop yield 50 or 60 tons per acre.

Last fall, a friend of ours who had an excellent crop of potatoes, wished to ascertain the probable yield per acre. Accordingly he dug half a dozen hills, weighed the potatoes, and found to his delight that his crop would yield 1,275 bushels per acre. Even Prof. COMSTOCK'S terra cultured potatoes did not beat this. However, when the potatoes were all dug, the yield was found to have decreased to somewhere about 250 bushels per acre. So we believe would have been the case with these immense ruta бага crops, if correctly weighed. We do not say it is impossible to grow such crops; still, we believe 50 tons of turnips have never been grown on a single acre. We have had unusually favorable opportunities of seeing and judging the weight of the best turnip crops of England, and have accurately weighed some of the largest crops of SCURVIN'S ruta бага we ever saw, and never found one to exceed 27 tons per acre.

No one can set a higher value on root crops in agriculture than ourselves, and we would use every means in our power to extend their culture. Exaggerated accounts of large crops, however, we think rather calculated to retard ultimately the desired object than to hasten it; for a farmer who expects 50 or 60 tons per acre, will certainly be disappointed, and consider the whole affair a humbug.

WHY DOES THE SAP RISE IN TREES?—This interesting question is the caption of a long article to be found in the August number of 1852 of the *Working Farmer*. I have read many essays intended to elucidate this phenomenon, but the one referred to is the rarest specimen of scientific literature I have ever met with. The author begins by attributing to the whole family of vegetable physiologists a want of accurate knowledge of cause and effect, and of seeking shelter behind an unmeaning shadow, by them styled vital principle. After having thus modestly disposed of the common herd, he goes on and says: "We are willing to admit that some of the causes for the rising of sap in trees and other plants, may neither be known nor understood; but so many are known, and their operations have been so minutely considered, that we see no objection to attributing the whole phenomena to such natural laws as we are acquainted with, provided they seem to be sufficient to render the whole fact clearly understandable."

He proceeds and gives no less than eight propelling powers, to which he attributes the rising of the sap. I would always prefer to have one well authenticated reason, than so many, lest they all should fail. But let us see if any of the reasons assigned will bear examination. He does not single out any one of them, but attributes it to the joint operation of them all.

The first propelling power enumerated is *capillary attraction*. Capillary attraction exerts but a very feeble power when it is exerted in straight tubes, but water may be absorbed by porous bodies to a considerable elevation above its level. But such absorption never assumes the form of

a running stream; it only rises in sufficient quantity to wet the porous body. When the liquid evaporates, a new supply rises up. But this can only take place to a very limited height. If the rising of the sap depended on capillary attraction, it would always rise when the earth is moist; but such is not the case.

The second power enumerated is a still more feeble one. The author says that "if we immerse one end of a tube in water, and blow over the top of it, the water will rise in the tube." This can in no event have much influence on the sap; because at the time the sap is rising the fastest, the ends of the tubes in which it circulates are not exposed, being confined in the fruit and leaf buds. But it would be sufficient answer to this latter, to remind the reader that the sap rises in confined rooms, where no wind can blow.

The third is still more ridiculous. I will give you the words of the author: "A certain space of time is necessary to enable substances in contact to let go of each other; and even great force and rapidity of action will not overcome this tendency. If we draw a polished cone of glass upwards, its point having been previously inserted in water, at a speed of ninety miles per hour, we shall raise a column of water equal in size to the diameter of the cone at the point of immersion." I do not see the application of this phenomenon to the rising of the sap, but am quite sure that the learned professor has attributed it to the wrong cause. The reason why the water will follow a cone thus speedily removed, is simply because the water will rush after the cone to fill the vacuum caused by the removal at the rate of ninety miles per hour, and not to the attraction between the glass and the water.

The fourth is the evaporation of liquids on the leaf causing cold, and a consequent condensation of the gases to be found near at hand in the capillary tubes. There are several objections to this having any effect; the most potent would be the fact of no leaves being out at the time the sap commences to run. Another is, that instead of drawing the sap up it would be more easy to draw air down.

The fifth is *centrifugal force*. The writer here describes the motion necessary to produce this phenomenon, and says that "a cornstalk may be placed one end in a basin of water, and the other end moved so rapidly as to cause the water to be ejected at the other." The neighborhood of the author must present a scene of animated nature not to be found everywhere. This supernatural motion must have been obtained by the use of the improved superphosphate. How interesting it must be to see the trees and the cornstalks performing these gyrations to pump up their sap. BARNUM should buy the place, and have it walked in and whitewashed, and put it on exhibition. It would be a fine field for the pasture of the woolly horse.

The sixth is *endosmose*. The application of this phenomenon, as laid down by the author, is beyond my limited comprehension, and I refer the reader to the original.

The seventh is that *water will find its level*. This I do not deny; but the sap in a tree is going out of its level; and if it were not, there would be no need of speculation on the subject.

The eighth is more likely to deceive those who do not think deeply before they adopt any conclusions. The author says that "portions of gases find their way into the capillary tubes of the tree, and being lighter than the sap, cause the sap to rise." This is quite erroneous; no such thing will take place. If a bent tube is filled with a liquid, it will rise as high in the one arm as in the other; and if we cause a gas to find its way into one of the arms, the water will rise in that arm until the column will weigh just as much as the column in the arm that has no gas in it, but no higher. If the tube be capillary and open at both ends, the liquid will not rise, but in time will descend, and the gas will be found on the top. The gas in the tubes of a tree would have no propelling force under it, and could not rise without forming a vacuum between itself and the water below; hence it would only rise as the water and itself slowly changed places.

The author concludes that he has proved the foregoing to be the causes of the rising of the sap, by an experiment. He cut off a grape vine in the spring, and tied an India rubber bottle over the end of it. He says that notwithstanding the bottle was capable of bearing twenty pounds of pressure, it burst by the force of the flow of sap.

I do not wonder that the other gentlemen have never thought fit to attribute the rise of the sap to any of the causes set out by the author, and to him be the honor of the discovery.

Not one of the phenomena above mentioned has a shadow of claim to be considered as the motive power of the sap. The whole essay is but a tissue of undigested matter, calculated only to fill up the pages of a journal principally devoted to the puffing of a nostrum. Before attempting to assign

a cause to an effect, we should well consider the effect. The sap rises in the spring, before the leaves are out; consequently they are not needed to draw it up. Capillary attraction fails; because the sap does not rise at all times when the earth is wet. The sap is not drawn up; because it will overflow, and it will continue to run if the tree is cut off at the ground. It is not pushed up; because if we cut a tree just above the ground, when the sap is running up, and immerse the trunk in colored water, it will rise and color the texture of the wood.

When we have discovered the principle that gives motion to the heart of man, then we will be able to answer the question, but I doubt if before.

The conclusion of the article is the only part of it to which I can subscribe: "With such facts before us so simple, and so readily to be understood, we are disinclined to attribute the whole action of, to the words vital principle." I have no difficulty in believing that the author is so simple, and easily understood, that he has attributed the rising of the sap to any power but the vital principle. B.

IMPROVEMENT OF ROADS.—Nothing adds more to the beauty of a landscape or rural scenery, and nothing is a surer indication of the enterprise and prosperity of its inhabitants, than to see handsome, straight, and well constructed roads, well fenced with boards, hedge, or wire, and skirted with ornamental or useful trees.

Many persons pursue a very slovenly practice of throwing along the road-side stones, old stumps, or orchard brush, which they take from their fields, thus obstructing the way so that two teams can barely pass, and the pedestrian who is compelled by necessity to use the only means of locomotion which nature has provided, or the individual who chooses to avail himself of the healthful and invigorating exercise of walking a few miles, is obliged in many instances to plod through the mud up to his ancles or betake himself to the neighboring fields.

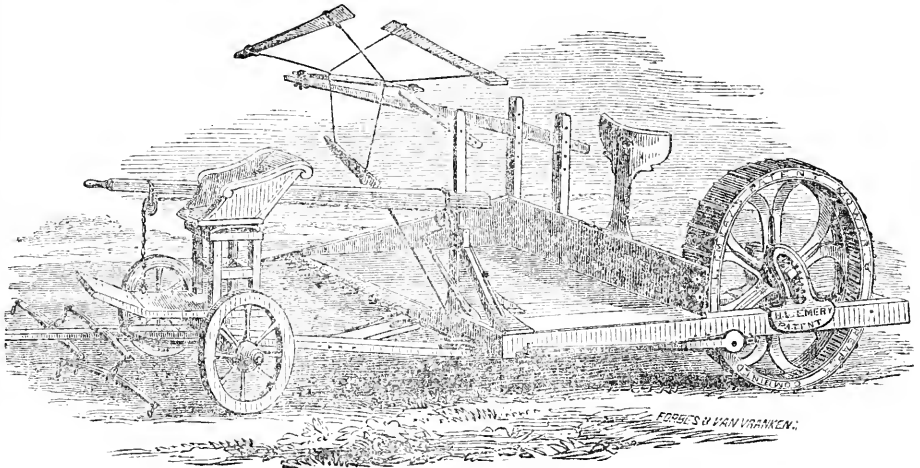
Another great source of annoyance is the practice of letting their long-snouted quadrupeds run at large, without rings in their noses, who root up the ground along the fences, leaving them rough and unsightly, and causing Canada thistles and other noxious weeds to spring up in place of the beautiful grass-sward which has been upturned by those voracious grunters.

I would here remark that I have entirely eradicated several patches of Canada thistles along the road-side, by cutting off every plant even with the surface of the ground as often as they made their appearance, as I passed to and from my daily avocation.

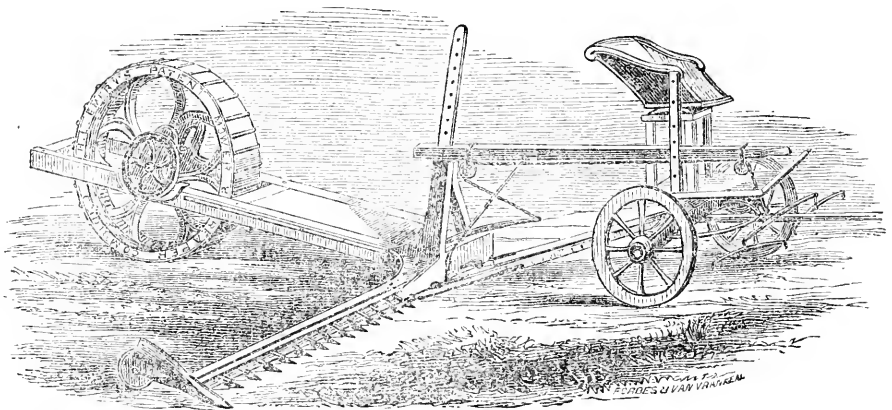
An error is committed by many of our path-masters in working the roads too wide, which necessarily renders them flat, thus causing the water to stand on the surface, when the tread of animals and the wheels of carriages soon make them very muddy. They plow close up to the fences on each side, leaving no chance for a foot passenger to get along. A good side-walk should be left on each side, at least six feet wide. The width of the road from the deepest part of the ditches may be 32 feet, and the two side-walks six feet each; making in all 44 feet clear of the fences, or about two and a half rods, which is enough for any road except some great thoroughfare. Trees may be planted along the road-side, especially on the south side of an east and west road, as their shadows will be cast into the road, and will do little or no injury to the growing crops. The trees may be cut away as soon as they attain a size sufficiently large for fence posts, and their places supplied by setting out new ones in the intermediate spaces, or by letting a shoot grow up from the old stump to form a new tree. New trees may be set in the spaces some years before cutting the old ones. In this way the farmer can furnish himself with considerable timber and fuel with little expense, beside adding beauty to his farm and the surrounding scenery. If all the road work were faithfully and judiciously laid out, we should soon see a decided improvement in our roads; and especially as the practice of building plankroads has become so common, which throws more labor on the cross roads.

I would again call the attention of your readers to the law which requires the path-master in each road district, the superintendents of canals, and the corporations of railroads, turnpikes, and plankroads, to cause Canada thistles and other noxious weeds to be cut at least twice a year—once between the 15th of June and the 1st of July, and once between the 15th of August and the 1st of September in each year. JASON SMITH.—*Tyre, N. Y.*

EMERY'S MOWER AND REAPER, COMBINED.



EMERY'S MOWER AND REAPER.



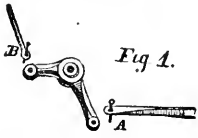
VIEW OF THE MACHINE AS ARRANGED FOR MOWING.

As will readily be seen, it is provided with a driver's seat and wheels, independent of the machine itself, but attached by hinges in such a manner as to allow an easy action and adjustment, while this method does away entirely with all the side draft.

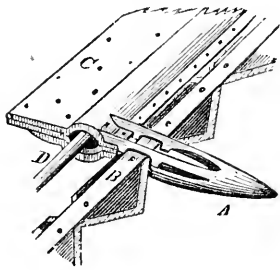
The machine itself is provided with a large main wheel, being about forty inches in diameter and eight inches face, with the necessary projections on its surface. This wheel is cast with an internal gearing at one side of the spokes, the teeth of which are protected from dirt and strengthened by a deep flange of nearly three inches. This flange is represented by that part of the cut bearing the words "Mower and Reaper, Combined." The main frame is suspended from this wheel, by means of adjustable pinion boxes, the boxes being hung inside of hangers attached to the frame itself. By applying a kind of wrench to the box, (which projects far enough beyond the hangers, and is made square,) it may be turned; thus by the action of its teeth on the corresponding teeth on the hanger, the frame itself is raised or lowered to any desired point, where it is confined by a simple iron key.

A small pinion is placed inside of this large wheel at the forward part, and its shaft confined to the under side of the frame itself, this shaft extending far enough outside to receive an eccentric close up to the frame.

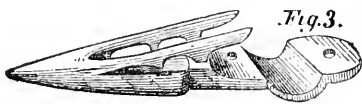
The motion of the cutters is obtained by eccentric straps and connecting rod, passing along the outside of the frame to the fore end, where it connects with an elbow or knee iron, as shown at A, in fig. 1. This elbow extends its other end through to the front of the main frame, as seen at B, and is confined in position by a heavy, substantial bed-plate of iron. The end of the cutter bar itself, connecting with the elbow at B, has its motion simply and directly from the main wheel, all parts working constantly in line, giving a stroke of eight inches by the eccentric, and each end of the elbow being eight inches from its centre of motion, causes on either end a deflection of but five-eighths of an inch beyond a straight center line. At the same time, the cutters have as much velocity as the best reapers and mowers in use. They make but half the reverses or vibrations, and require less than half the weight of cutter bar and connections of either of them, while it is equally strong.



This cut represents a transverse section of the wrought-iron cutter beam, with a section of the cutter bar, cutters, and dividers. B represents the cutter bar, to which the steel blades are attached on its under side, the bevel of the blades being upon the upper side and sickle edge. These blades also extend back to the cutter bar, but not to a point as forward. The edges of this rear part are same as forward the cutter bar, and serve to cut and clear all the "clog" or fibre which may possibly escape the forward cut and get drawn into the dividers. D represents a section of the crank axle, which extends through the hollow beam, and supports its outer end. C represents the double plate hollow beam, with the cutters pass. A represents the divider, showing the openings and guides through which the cutters pass. This divider is made very true, with sharp corners, over which the cutters pass, forming a perfect shears-cutting action. These dividers are wider than on most other machines, thus protecting the cutters from being injured by stones getting between them, (the space being but two inches,) and compressing the grass or grain into a more dense body while being cut.



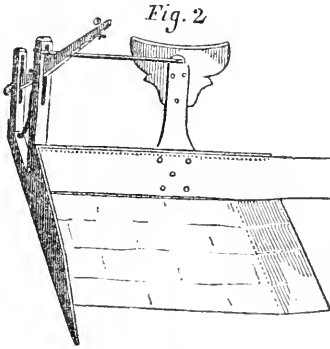
These cutters and dividers are not dissimilar to those used by the first premium mowing machine at the late trial by the State Society, with the exception that the divider is made to fit round the under side of the wrought iron cutter beam, the beam itself being made of two plates of wrought iron rolled into a sort of trough with their concave faces placed together, and then firmly riveted, thus forming a hollow beam. An enlarged but imperfect representation of the divider is shown in fig. 3.



Through this hollow beam a shaft is passed, and at its extreme end this shaft is turned at right angles to the rear of the beam about two feet, and a wheel attached to its rear end, to support the outer end of the beam. At the inner end of this shaft is attached a sort of crank or lever about two feet long, extending forward towards the driver's seat, with a leather strap or chain attached to it. This strap, passing upwards and over a shieve, extends along the large lever to the driver's seat, and passing another shieve, and is then attached to the foot board of the driver. This main lever, which is seen passing the driver's seat, is made permanent to the machine itself, and is kept in its desired position or elevation, by means of an upright post beside the seat, with a series of

catches and latch, operated by the driver's foot, so that while the person is raising the lever with his hand, with his foot he loosens or confines it where he desires.

Therefore, while he raises the lever, lifting by it the side of the machine directly in rear of himself the strap or chain is drawn over the shieves, and the end of the wrench lever is raised sufficiently to turn the crank shaft which extends through the cutter beam, and by this being turned, the wheel at the outer end becoming a fulcrum on the ground, the beam itself must be raised at its outer end so as to maintain a uniform elevation of its whole cutting front from the ground.



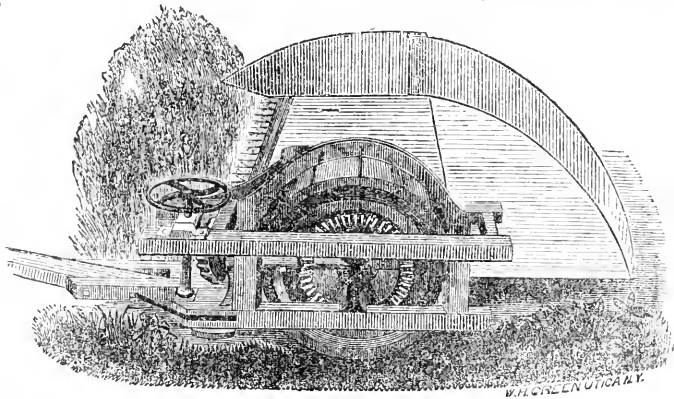
The apron itself is shown with its fixtures in fig. 2. detached. It is made of a strong frame work and light covering of wood and tin. The T standard at its back is a breast-work to protect and support the raker, who stands erect, face forward, directly behind it. The delivery is at one side, and has a slight elevation above the cutters, about one and a half

inches, and is over four feet wide. A reel may be used at pleasure, and is always sold with the machine. The reel is driven by a pulley on the main wheel shaft—the band passing below the apron to the front side, where it passes upward to and over a pulley on the reel shaft. The band and pulley have been omitted by the engraver, although in his sketch made from the machine.



BURRALL'S CONVERTIBLE REAPER.—The accompanying engraving represents *Burrall's Reaper*, which received the first prize of \$50 at the Trial of Implements at Geneva,

last summer. The judges, in their report, say: "T. D. BURRALL'S Machine performed its work in the most admirable manner; the gavels were well laid; the workmanship and materials were excellent. The circular apron for side delivery, the balance wheel, and an arrangement to elevate



the exterior edge of the apron, are valuable features."

In our advertising columns will be found a description of *Ketchum's Mowing Machine*, by HOWARD & Co., Buffalo. Of this machine we can say it is the best Mower we know of, and well worthy the attention of those who have a large quantity of grass to cut. We have recommended this machine both in our journal and in answers to inquiries by letter, and have received several communications from farmers who purchased on our recommendation, warmly thanking us for the service we had thus rendered them.

The subject of mowing and reaping machines is now creating considerable attention, and we desire to give our readers the best information we can get on the subject. Many who have written us expecting to receive answers by letter, will find their inquiries answered in this and other articles treating of the subjects on which they desire information.

Horticultural Department.

CONDUCTED BY P. BARRY.

THE KITCHEN GARDEN we must recommend to the special attention of our readers, and we wish to do it now in season, that ample and timely preparations be made for a thorough season's culture. We know of no good reason why the farmer with his barnyards overflowing with manure, with abundance of land, and with ample requisites of every kind, should content himself with a scanty supply of poorly grown esculents, commencing not earlier than midsummer. If a hard-working mechanic or merchant in town, who has to labor at his profession some ten or twelve hours a day, can by means of a little hot-bed enjoy his dish of radishes and salads in April and May, why cannot the farmer? At this season of the year, men are not very busily employed, and even if they be, this matter of providing a supply of vegetables is as important as anything else. Is your health and comfort of no account? What are you working for? You will say you cannot afford the time; it will not pay, &c., &c., to produce such luxuries as forced spring vegetables. If your system of living were such as it ought to be, you would consider these articles we speak of *necessities*. Asparagus and rhubarb and sea kale you might force, and your tables might groan under the delicious vegetables that city people prize so highly and pay for so dearly. Young men who are perhaps attending school, or spending a considerable share of their time in frivolous amusements, should take up this matter; it will fill up the spare hours and afford them much instruction, aside from the comfort and gratification. Any man, or any boy sixteen years of age, who has the slightest mechanical faculty, can construct a hot-bed frame. In previous volumes of the *Farmer* we have given some hints on this point, as well as in the preparation of the manure and general management. Refer to these, and go to work immediately, so as to get your beds ready for sowing as soon as the first or second week in March at the furthest. It should be located in a sheltered place, and some coarse straw mats might be made to cover at nights and during very cold intervals.

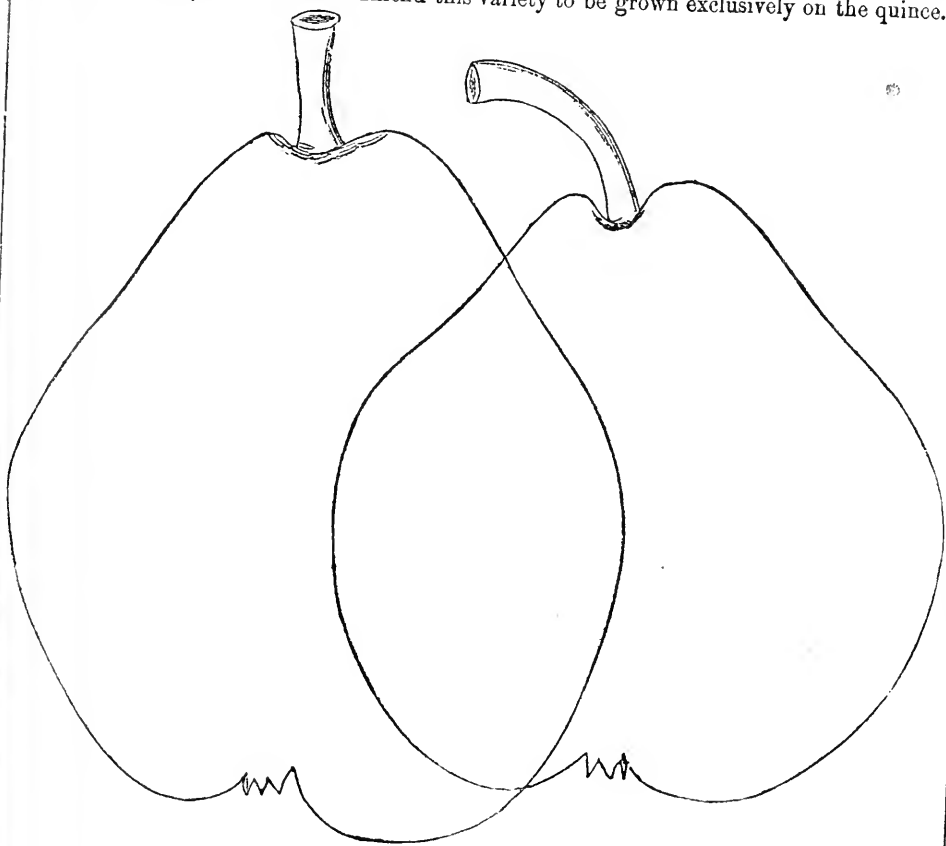
A hot-bed is a great convenience if only to grow plants, such as cabbage, cauliflower, tomato, celery, &c., for the garden. We see every spring, along in the month of May, farmers wasting their time searching around the city for such plants, and when they get them they are half dead, and unless the weather subsequent to planting be very favorable, they cannot survive. If they had them at home, they would lose no time in looking for them, they could go out on a damp morning or evening, and transfer them to the garden in such a way as to give them no check, and thus they might gain a month with the crop. Besides all this, the ladies would have an opportunity to bring forward their annuals, and be able to have a fine display of flowers all summer; while depending solely on out door or open ground culture, much of the season is over before the annuals get in blossom.

Pruning of all sorts may be performed now. For instructions in this work we must refer to previous volumes, in which we have treated it fully. Scrape and clean the bark of old rough trees; destroy eggs of insects; apply manure and composts around exhausted bearing trees where it was neglected last autumn; prepare scions for grafting, and prepare only the very best sorts. The pages of the *Farmer* throw a good deal of light on this subject. Pea sticks may be prepared, and all implements collected and put in perfect working order.

The winter, over the whole country, has been unusually mild—a fair offset to last winter. The prospect for a fruit crop is now good; but there has yet to come the most critical time, so we must not be too sanguine.

BEURRE DIEL AND BEURRE D'ANJOU PEARS.

WE subjoin outlines of two of the largest and finest autumn pears of the four or five hundred varieties now under cultivation in this country. The *Beurre Diel* was among the earlier varieties originated by VAN MONS, some forty or fifty years ago. It has been a popular variety in this country among pear growers for several years, and is considerably disseminated; but it was not until within a few years that it was extensively propagated, and took its place among first rate varieties. The reason of this was, that on pear stocks it was frequently somewhat astringent; but since it has borne on quince stocks, its quality has been almost uniformly fine. It is a rampant grower both on pear and quince, making long, stout, and somewhat curved shoots. It bears young and abundantly, and the fruit may be kept into and even through the whole month of December. We believe our friend H. P. NORRON, Esq., of Brockport, who has some fine trees of this sort, had them in good condition till about the 1st of January last, if not later. To have them keep so long, they must be left on the trees till they are ready to fall, or nearly so. We recommend this variety to be grown exclusively on the quince.



BEURRE DIEL.

BEURRE D'ANJOU.

Abroad the *Buerre Diel* is known variously as *Buerre Royal*, *Buerre Magnifique*, *Buerre Incomparable*, &c. Mr. HOVEY designates it as "a noble fruit in every sense of the word," and so it is.

The *Buerre d'Anjou* is of comparatively recent introduction. We have invariably

received it from France as "*Ne plus meuris*." The variety cultivated under the latter name in England is a very late-keeping winter variety. The *d'Anjou* is, we believe, the finest autumn variety imported or introduced within the past twenty years. It was first fruited by Col. WILDER, some seven years ago, and ever since it has been gaining ground in the estimation of the Boston cultivators, until now they cannot use language too strong for its praise. We have fruited it three years at Rochester, and can say that it is a pear of surpassing excellence. The tree is very vigorous, erect and handsome in its growth, with large, luxuriant, wavy folded leaves, on long petioles, giving the tree a distinct aspect among others. It bears young and moderately; the fruit on the ends of the branches generally, and very regularly distributed. Fruit—large, long, obovate, with a short, stout stalk. Skin—fair, smooth, marked with russet dots, and usually having a rich, ruddy cheek when exposed to the sun. The flesh is finer, and flavor richer and more highly perfumed than the *B. Diel*, but the latter would be more profitable for extensive culture. Season about the same as *B. Diel*—from October to Jan.

These are two varieties of which we think no one need be afraid to plant too many. Five hundred bearing trees of each would be a snug fortune.

WINTER SHOW OF FRUIT AT ALBANY.

THE display of fruit was not large, but very fine—the greater part from Western New York. The committee of arrangements for this department, MESSRS. MCINTYRE, DORR, and GOULD, of Albany, had made ample and comfortable preparations both for exhibitors and visitors; and those who were present seemed to enjoy the occasion well.

The MESSRS. HAYWARDS, of Brighton, made their usually superb display of apples (26 varieties,) besides two dishes of grapes in first rate order in appearance and flavor. Mr. R. H. BROWN, of Greece, made a fine display of 20 varieties of apples—extra fine specimens, eclipsing all the others in size and beauty. MESSRS. ELLWANGER & BARRY offered 40 varieties of pears, many of which were in tasting condition, and gave occasion for a very interesting and instructive gossip on winter pears. Mr. JOHN S. GOULD, of Albany, presented a dish of *Inconnue Van Mons* pear in nice condition—pronounced good; also *Winter Nelis* pear and finely preserved *Isabella* and *Catauba* grapes. The names of the other contributors will be found in the following report, which we take from one of the newspapers:

THE WINTER SHOW OF THE SOCIETY.—There was exhibited at the Hall of the State Agricultural Society, yesterday, says the *Albany Register*, the most extensive and greatest variety of winter fruit ever collected in this city. The great bulk on exhibition came from the western part of the State, and but little from this section.

ELLWANGER & BARRY, of Rochester, had the greatest variety of Winter Pears, numbering 40 different kinds. It is said to be the greatest variety ever exhibited in the United States. They also had 38 varieties of Winter Apples, embracing some of the choicest fruits.

T. G. YEOMANS, Walworth, Wayne County, 6 varieties of Apples and 2 of Pears.

N. & E. S. HAYWARD, Brighton, Monroe County, 26 varieties of Apples and 2 of *Isabella Grapes*—one kept in saw-dust and the other in cotton. The former appeared the best preserved.

ISAAC MERRITT, Penfield, Monroe County, 3 varieties of Apples.

F. W. LAY, Greece, Monroe County, 11 varieties of Apples.

ROBERT BROWN, Greece, Monroe County, 20 varieties of Apples.

A. FROST, Genesee Valley Nursery, 24 varieties of Apples.

Judge BUEL, Rochester, 5 varieties of Apples.

J. H. WATTS, Rochester, 5 varieties of Apples.

WM. HART, Albion, Orleans County, yellow Corn in the ear, yielding 60 to 80 bushels shelled to the acre.

The Society did not offer any valuable premiums for Fruit; but the committee were of the opinion that the Executive Committee might be induced to give a few to those who have shown so much zeal in getting together the greatest variety and choicest kinds of Winter Fruit.

The following premiums were awarded:

FRUITS.—Pears—ELLWANGER & BARRY, large Silver Medal.

Apples.—E. L. WANGER & BARRY, Diploma, copy of Downing's Fruits; T. G. YEOMANS, copy Barry's Fruit Garden; J. H. WATTS, Rochester, copy Thomas on Fruit; A. FROST, Rochester, copy Downing's Fruits; JOHN S. GOULD, Albany, copy Barry's Fruit Garden; E. S. HAYWARD, Brighton, Monroe Co., Diploma and Downing's; ISAAC MERRITT, Penfield, copy Thomas; F. W. LAY, Greece, copy Downing; ROBERT BROWN, Greece, Diploma and Downing; J. J. THOMAS, Macedon, Wayne Co., Diploma and Barry's Fruit.

Grapes.—N. C. HAYWARD, Greece, copy Barry's Fruit Garden.

CARROTS.—N. & E. S. HAYWARD, Brighton, Monroe Co., 600 bushels on 55-100 acres, \$8.

CLOVER SEED.—FREDERICK N. TOBEY, East Bloomfield, 30 22-60 bushels on 6 acres and 100 rods, \$5.

FIELD CROPS.—*Winter Wheat*.—IRA ARTHORP, Riga, 53 9-60 bushels per acre, \$20.

We hope the Society will hereafter encourage these winter exhibitions, as the late one has afforded a very satisfactory demonstration of their utility.

ANNUAL MEETING OF THE GENESEE VALLEY HORTICULTURAL SOCIETY.—This meeting was held on the 5th February. The following officers were chosen for the ensuing year:

President.—J. J. THOMAS, Macedon.

Vice Presidents.—L. WETHERELL, Rochester; H. P. NORTON, Brockport; R. G. PARDEE, Geneva; MR. JEFFRY, Canandaigua; SAMUEL SHADEOLT, Wheatland.

Recording Secretary.—JAS. VICK, JR., Rochester.

Corresponding Secretary.—H. F. HOOKER, Rochester.

Treasurer.—JAMES H. WATTS, Rochester.

COMMITTEES.—*On Fruits*.—P. BARRY, H. E. HOOKER, JOHN DONELLAN, J. W. SEWARD, E. S. HAYWARD, L. A. WARD, J. W. BISSELL, H. N. LANGWORTHY, L. B. LANGWORTHY, ZERA BURR, GEO. ELLWANGER, ALONZO FROST.

On Trees and Shrubs.—W. A. REYNOLDS, Wm. Webster, R. DONELLAN, W. KING, JOSEPH FROST, C. F. VAN DOORN.

On Entomology.—L. WETHERELL, J. W. SEWARD.

On Vegetables.—JOHN DONELLAN, JAMES VICK, JR., HORACE HOOKER, JAMES BUCHAN.

On Botany.—L. WETHERELL, FRANCIS TRENTMAN, MOSES LONG, CHESTER DEWEY, G. H. SMITH, P. COONEY.

On Finance.—JOHN J. THOMAS, L. WETHERELL, J. VICK, JR., J. H. WATTS.

Executive Committee.—J. J. THOMAS, L. WETHERELL, P. BARRY, W. A. REYNOLDS.

There was a very nice display of winter apples and pears, and some of the best preserved *Isabella* grapes we have seen were presented by MRS. M. JEWELL, of Rochester. Among the apples we saw none so remarkable as *Newtown Pippins*, the largest and fairest we have seen shown, by MR. R. H. BROWN, of Greece. The Committee report as follows:

REPORT OF FRUIT COMMITTEE—WINTER EXHIBITION.—MESSRS. ELLWANGER & BARRY, Mt. Hope Nurseries, exhibited 33 varieties of Pears and 24 of Apples.

JAS. H. WATTS, Rochester, *Northern Spy* Apples.

R. H. BROWN, Greece, 22 varieties Apples.

MESSRS. A. FROST & CO., Genesee Valley Nurseries, 18 varieties Apples.

H. WHITE, Rochester, 8 varieties of Apples.

S. MILLER, Rochester, *St. Germain* Pears.

MRS. M. JEWELL, Rochester, *Isabella* Grapes in a most beautiful state of preservation.

MESSRS. BISSELL & HOOKER presented a new and promising variety of Apple—name unknown to the Committee.

PEARS AND PRICES.—We learn from the best authority, that sales of pears have been actually made at Philadelphia this season at prices calculated to give an impetus to their culture beyond any former example. One remarkable specimen of *Duchess d'Angouleme* pear was sold at ISAAC NEWTON'S Fruit and Ice Cream store, in Chestnut street, Philadelphia, for *One Dollar!* and many specimens not quite so large, but very respectable in size, produced seventy-five cents each as soon as they were displayed in the window. Now this is very encouraging, certainly, to a man who can purchase a tree for from twenty-five to fifty cents, and sell the produce at even half or quarter the above prices. In addition, we are assured that MR. NEWTON was selling a stock of *Vicar of Winkfield* pears, on December 2, 1852, at seventy-five cents a dozen, to eager buyers! Our correspondent says he immediately sat down and ordered pear trees for all the vacant spots he could find in his garden. We only add that we think him a sensible man.

Editor's Table.

THE AGRICULTURAL PRESS.—We know of nothing more encouraging in the signs of the times than the great demand for all kinds of literature that in any way appertains to rural affairs, or professes to instruct in agriculture and kindred pursuits. Demand always creates a supply—so, at least, is the case in this instance. We have now on our exchange list something like sixty agricultural papers, probably more than are published in all the other countries of the world put together. We feel grateful that our lot is cast amid such a reading, thinking nation of working farmers. To notice separately, as they deserve, such a host of contemporaries, would fill completely our humble sheet.

Boston, "the Athens of America," pours forth weekly four clear, vivifying streams of agricultural knowledge, running east, west, north and south, enlightening the mind and fertilizing the soil of thousands of happy readers. The *Boston Cultivator*, we believe has much the largest circulation of any weekly agricultural paper in the world. Its leading articles are sound, seasonable, scientific and practical. The *New England Farmer*, *Massachusetts Ploughman*, and *New England Cultivator*, are also good papers.

From New York, we get, weekly, *The Agricultural*, *American Artisan*, and *Scientific American*; monthly, *The Plough*, *the Loom*, and *the Anvil*, and *Working Farmer*.

Baltimore furnishes us one of our best monthly exchanges, *The American Farmer*.

Pennsylvania sends us two monthlies. *The Agriculturist* has just hailed us, from Mercer. It is an unpretending sheet, and will doubtless improve if well sustained. *The Pennsylvania Farm Journal* has recently changed its location from Lancaster to West Chester. We consider it "A, No. 1."

Cleveland, Ohio, has the honor of issuing a first rate weekly agricultural paper, *The Ohio Farmer*. The semi-monthly visits of the *Ohio Cultivator*, from Columbus, generally afford us both profit and pleasure.

Michigan has now two monthly papers to look after her agricultural interests, both hailing from Detroit. "Competition is the spirit of trade." The new paper, *The Farmer's Companion*, appears to have waked up the old, slovenly *Michigan Farmer*, till it is now really quite a decent, respectable looking Journal. Its youthful rival bids

fair to be one of our first class agricultural papers.

The Prairie Farmer, Chicago, comes out in a new dress and is much improved in appearance. J. A. WRIGHT has again taken its editorial charge, assisted by Dr. J. A. KENNICOTT in the Horticultural department. The *Farmer* now ranks among the best.

The *Wisconsin and Iowa Farmer* is a valuable western journal. Published monthly at Janesville, Wisconsin.

The Western Plow Boy, Fort Wayne, Indiana, is a semi-monthly just commenced. Its appearance is much in its favor. We wish it a long career of usefulness. It showed good sense in copying our article on "the improvement of our common sheep;" it forgot, however, to give credit. We do not blame the "Boy"; this kind of stealing is so common among the "old folks," that he doubtless thought it no harm to follow their example.

We have not space to go farther west or south or our list might be greatly enlarged.

Coming home again, we have the *Wool Grower and Stock Register*, formerly published at Buffalo, now removed to Rochester, N. Y., and published by D. D. T. MOORE, the indefatigable publisher of the *Rural New Yorker*, one of the best weekly agricultural and family papers extant.

The weekly *New York Farmer*, Rome, N. Y., is a useful paper.

The Northern Farmer, Utica, N. Y., monthly, is great on bees and chickens, and is down on agricultural science and other kindred "humbugs."

The Country Gentleman, Albany, N. Y., is a new weekly, conducted with much spirit and talent.

We have not alluded to half the agricultural journals on our list, but we think the above will be sufficient to show our Trans-Atlantic friends and subscribers that we are some in agricultural literature in this new world.

THE MICHIGAN FARMER.—The editor of the *Michigan Farmer* has a bad habit of telling fibs about his neighbors. We had hoped that a voyage to Europe and a good fit of sea-sickness would have cured him of this evil propensity; but it seems we are disappointed, as he returns "like a dog to his vomit." We were rather

fearful, when we read his *notes* from England, that this would be the result, as we know that such scenes and such characters as he describes are only to be found in the *very worst society*. Removed from the restraining influence of society at home, we fear our western editor was so unfortunate as to get into bad company, and thus our hopes of his improvement were blasted. One of our female subscribers in Michigan, calls our attention to the following paragraph in the February number :

"There are probably now about eight thousand subscribers to agricultural papers in Michigan, viz., six thousand to the *Michigan Farmer*, say one thousand to the *Genessee Farmer*, five hundred to the *Albany Cultivator*, and five hundred to all others. When we took the *Michigan Farmer*, five years ago, it had about a thousand *fifty-cent* subscribers, having been published six years previously, and the *Genessee Farmer* twenty-five hundred."

Now, the truth is, five years since we had but 705 subscribers in Michigan; last year, 2,409. The present year we can not say what the number will be, as we are every day receiving orders from that State, but have every reason to believe it will be much higher, having already entered on our books forty new offices, with good clubs, where the *Genessee Farmer* was never before taken. We hope the editor will make a *good Michigan Farmer*, and we shall ever rejoice at his prosperity.

ADVERTISEMENTS, to secure insertion in the *Farmer*, must be received as early as the 10th of the previous month, and be of such a character as to be of interest to farmers. We publish no other. Terms—\$2.00 for every hundred words, each insertion, *paid in advance*.

Inquiries and Answers.

(EDWARD R. COKE.) MIDDLESEX HOGS.—There are but few Middlesex hogs in the country. We believe Mr. JOHN C. JACKSON, Newtown, Long Island, has imported some fine specimens of this valuable breed; and that Col. J. M. SHERWOOD, Auburn, N. Y., and LEWIS F. ALLEN, Black Rock, N. Y., have obtained some of them from Mr. JACKSON.

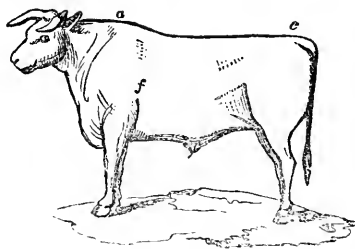
(J. W. WARD, Louisville, Ky.) Guano is a most excellent manure for Indian corn; that is, it will very much increase its growth. The economy of using it, however, depends on the amount of increase produced by its application, and on the value of the corn. On good average wheat soils, or such that will produce from 15 to 20 bushels of wheat without the aid of manure, 100 lbs. of good Peruvian guano will produce three extra bushels of wheat. On very poor soils, we should expect a much greater increase; for in the former

case, the increase is dependent on the ammonia of the guano; while in the latter, much benefit is also derived from the phosphates. On corn, the exact increase caused by 100 lbs. of guano, has not, to our knowledge, been determined. Our own opinion is, that it will not pay to apply guano to corn, when shelled corn sells for only 50 cents a bushel. We intend experimenting with it this spring and shall then be able to speak with more confidence. Any of our readers who have used it, will confer a favor by communicating the result.

ADMEASUREMENT OF ANIMALS.—Will not you, or some of your correspondents, give the readers of the *Farmer* a table, or rule of measurement, by which individuals may ascertain the weight, and consequently the value of their different animals, without having to depend upon the "say so" of the butcher. J. WORK, JR.—*Medaille*.

We believe there is no rule for determining the weight of beef by measuring the live animal, that even approximates to correctness in all cases. We have not sufficient data from which to deduce even a general rule, and we should be glad if any of our readers who have had experience in the matter, would give us their results and conclusions. The following, from *Stephens' Book of the Farm*, is to the point:

"Assistance may be afforded you in ascertaining the weight of your cattle until you are better taught by experience, and this consists in *measuring their bulk, or in weighing their live-weight*. The live-weight of cattle is easily ascertained by placing the animals upon a steel-yard. The rule to determine the quantity of beef by the live-weight, is to multiply the gross weight by .605 of a decimal, if the ox is ripe fat; but if not so, by .5 of a decimal: that is to say, that the offal of an ox in ordinary condition weighs about as much as its beef and bones. An ox should not be weighed immediately after it has fed, as it will weigh too heavy, but after it has chewed the cud, and is ready again to feed. Ascertaining the weight by measurement is a more convenient method than by weighing; and when the measurement is properly taken, and the ox of an ordinary size, it is about as accurate; though every person can not measure an ox, that process requiring judgment to do it properly and accu-



rately. Suppos the annexed figure to represent an ox whose weight, sinking offal, is desired to

be ascertained by measurement. The mode is, measure with a tape-line from the top of the shoulder *a* to the tail-head *c*, and mark this for *length*; then measure round the body at *f*, immediately behind the shoulder, and mark this for the *girth*; and on consulting the tables calculated for the purpose of affording the results, the weight of beef will be found. Upon what principle this rule for measurement is founded I can not say, and suspect that it is entirely empirical. The rules by which the tables are calculated seem to be these two, namely: multiply the *square* of the *girth* in *inches* by the *length* in *inches*, and divide the product by 7344, and the quotient is the weight in imperial stones [14 lbs.] Or, square the *girth* in *feet* and multiply it by the *length* in *feet*, and multiply again by the decimal .238, and the sum is the weight in imperial stones. For Example: Suppose the *girth* is 7 feet, or 84 inches, and the *length* 5 feet, or 60 inches; the weight of beef in imperial stones, according to Strachan's Tables, which are the most recent, is 57 sts. 10 lbs. by the former rule, and by the latter it is 56 sts. 4 lbs. These results show that there is no fixed principle upon which either rule is founded.

"This seems a very simple process, and so it would always be, were the form of the ox always perfect, which is very seldom the case, the fore and hind-quarters, instead of being equal, being more frequently otherwise; and were the condition always the same. Therefore, the judgment is called into exercise to make allowance for those differences. When the fore-quarter seems the heavier of the two, the line should be stretched nearer the head than *a*, the exact top of the shoulder; and so in like manner, when the hind-quarter seems heavier than the fore, the line should be stretched beyond *c*. In regard to the *girth*, it is no uncommon fault in an ox to have the carcass gripped small behind the shoulder, so that the exact *girth* of such a shoulder would be below the truth. It is very rare to find the *girth* too much filled out. You thus see that judgment is required to apply the tape-line to an ox; and as an illustration of the practical effects of misapplying the tape-line, I may state that one inch only added to the *girth* and *length* given in the above example, makes a difference in the above weight of upwards of 2 sts. The addition of one inch in the *length* is a mistake which may easily be made by the ox merely standing with his head down and back up; and a similar position may as easily cause an error in the *girth*. Experience alone can make you proficient in measuring. I knew a steward in Berwickshire who had so much practice in measuring and so frequent opportunities of verifying his measurements, that he measured any ordinary sized ox, whether fat or half lean, from one stone to half a stone of its true weight.

"To an ox from 40 to 70 stones the rule of measurement applies pretty near, if it is applied with judgment, and it is but fair to the principle that it should be so applied; but in weights both below and above these figures the rule is usually at fault."

TURNIPS.—I am rather a green farmer at best, and want to know many things which most men, I presume, are well informed about. I wish to know more about the turnip crop and its relation to wheat growing. I have thought some on the subject, read all I could get, and *experimented* a little, but still I find I have advanced but little in that practical knowledge I need. I had thought of preparing a small piece of ground, and early, say first of May, sowing it to turnips, and then turn them under. Now will you please give me your opinion on this course. If it is all moonshine say so, and tell me how you would manage. WM. P. CUSHMAN.—*Richfield, Ohio.*

We like the ideas contained in this letter. When we see farmers wishing to understand the position one crop bears to another in a system of rotation, we feel encouraged to hope a brighter day is dawning on our national agriculture. The position of the turnip crop, in agriculture, is a subject too extended and too important to be investigated in this place, and we shall recur to the matter elsewhere in the course of this volume.

Turnips, when plowed in as a green crop, are an admirable manure for wheat; but we doubt the economy of so disposing of them. Better feed them to cattle and convey the manure made by the animals eating them back to the soil. The manure thus made will do nearly as much good as if the turnips were plowed under.

May is rather too early, in this climate, to sow turnips. There would be danger of them running to seed. The first week in June is the proper time to sow ruta бага. The common turnip should not be sown till July, and often does well after wheat—sown in August.

Please give us the experiments you speak of. They would no doubt be interesting to us and our readers.

OLCAKE AND LINSEED.—As linseed oil cake is so very valuable in fattening various animals, would not the seed itself do better? And if so, how could it be best prepared from the unground seed? It is far easier for me to grow the seed, than to get either oilcake or the seed ground into meal. A SUBSCRIBER.—*Fuller's Point, Ill.*

Linseed is not more valuable for fattening animals than oilcake; it is, however, a most valuable and nutritious food. For rearing calves, linseed boiled into a "tea" or "soup" is second only to nature's food—the milk of the mother. In England, "linseed tea" is used to a great extent in conjunction with skimmed milk, as a food for rearing calves. It is also made into a jelly, mixed with bran, cut hay, &c., and fed to cattle, forming a most nutritious food. The method of preparing this "jelly," is to soak the seed in cold water for 48 hours; place it in a cauldron with about seven quarts of cold water to one quart of seed; boil the whole gently for two hours, stirring it to prevent burning at the bottom. Two quarts of the jelly is the usual quantity given to fattening cattle.

If it is so easy for you to grow linseed, would

it not pay you to grow it for the *flax*, which is transported to the eastern cities for so small a per centage of its value?

SOWING CLOVER AND TIMOTHY, &c.—A subscriber wishes to have a few hints on gardening, during the present year. Also, to know the best time for sowing clover and grass seed—how much, &c. He also wishes to inquire respecting worms boring in apple trees—how to prevent, &c. A. MARTIN, P. M.—*Nankin, Mich.*

We will endeavor to comply with the request respecting "hints on gardening," in our next number. Should be glad to have a few "hints" ourselves, on this or any kindred rural subject, from our many esteemed correspondents.

Clover should invariably be sown in the spring, 8 to 12 lbs. clean seed per acre. Timothy is sometimes sown in the fall, and does well; but in ordinary cases, the spring is in our opinion the best time. A better crop of timothy hay is obtained the first year by sowing in the fall, but we have known instances in which timothy sown in the fall has seriously injured the wheat crop with which it was sown. Eight pounds of clover and eight quarts of timothy seed is the usual quantity sown in this neighborhood. If timothy alone is sown, from half a bushel to a bushel of seed per acre is necessary, according to the quality of the land. Clays require more seed than rich mellow loams.

PEAS AND BUCKWHEAT ON NEW LAND.—Will peas do well on new land, and what is a good yield?

Also, does buckwheat succeed well on new land, and will it give hogs the itch, or kill them, if turned into the crop? W. M. CHAMBERS.—*Kenton, Ohio.*

We can see no reason why peas, or buckwheat, should not do first rate on newly cleared land, if well put in. The great difficulty of pea culture, is the pea bug; but as the bug does little damage till late in the fall, if the peas are fed out early to hogs, they are the most profitable crop a farmer can raise, taking into account the little injury they do the land. Twenty bushels per acre is a fair crop.

Buckwheat will certainly not *kill* the hogs. Its heating nature produces great irritation of the skin, so that the hogs will rub all the hair off them and exhibit other symptoms of itch. Whether they actually have the disease or not, in most cases, we do not know. Will some of our experienced readers give us their views on this matter.

WORK ON HORSES.—Which is the best book published treating on the rearing and management of horses? Where can it be had and at what price, sent to a distance?

Why should colts not be carried till they are upwards of two years old? A SUBSCRIBER.

"*YOUATT on the Horse*," is perhaps the best book published on this subject. We can send it

you, anywhere in the United States, for \$1.25, postage paid.

There is no positive reason why colts should not be carried or cleaned. The only reason we ever heard offered is a negative one—they do as well without as with the cleaning. In the *Journal of the United States Agricultural Society* there is an admirable essay on the "Mismanagement of Horses," which we commend to your notice. \$2 a year makes you a member of the Society, and entitles you to the quarterly journal, seeds, &c.

GUANO.—I should be very thankful to get information how those who have tried guano on fruit trees have applied it. I have a mind to try it on ground intended for 15,000 apple grafts, this spring, and I should like to apply it in the best way, if I knew how. I have asked you how to apply it to corn and oat ground, and am delaying plowing the oat ground until I get an answer. FELIX SINGER.—*Lacey Springs, Va.*

Sift all the lumps from the guano and break them. For oats, sow broadcast, about 200 lbs. per acre, after the land is plowed, and drag it in immediately. You need not mix plaster with it, unless you wish to sow plaster; and in this case, we should prefer to sow them separately. If you plant your corn three feet apart each way, 300 lbs. per acre would be about one ounce to a hill. Let this be spread where you intend the hill to be; cover it with a little soil and plant the corn above it. Be careful not to let the guano touch the seed, as it will injure or kill it.

OYSTER SHELLS.—Should oyster shells, for manure, be ground or burned. H. H. BLAKELY.—*East Aurora, N. Y.*

If we employ oyster shells for the nitrogen they contain, they should, of course, be ground, as the burning process would drive off all the organic matter. Estimated by the nitrogen theory, 125 lbs. of oyster shells are equal to 100 lbs. of barnyard manure. But the principle value of oyster shells, in our opinion, is the great amount of lime they contain in the form of a carbonate. By burning, we convert this carbonate of lime into caustic or quick lime, in which state it acts on the organic matter of the soil, and is most valuable in other respects. Burning is much the most economic way of pulverizing them.

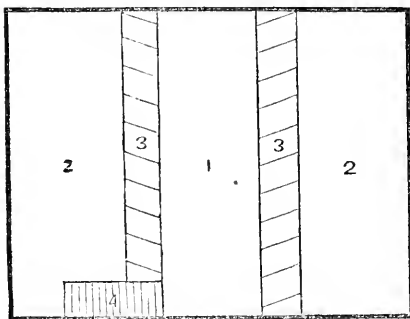
STALLS FOR CATTLE.—In answer to LEVI PADDOCK'S inquiry, I would say that I am opposed to the common way of confining cattle, either by stanchions, chains, or ropes, because cattle are frequently put up by careless or awkward hands. I often hear of cattle getting loose and injuring each other in their stalls, and the best may sometimes miss their intentions. Therefore, I should recommend a stable to be divided into stalls, said stalls to be about four feet deep from the manger. At the edge of each division there should be a gate to swing to a post or stud in the rear; then

fasten them with a hook or pin. The gates should all open towards the door, four or five feet being sufficient for a cow. The stable should be ten or twelve feet deep. My stable is built in this way and I find no inconvenience. I winter from two to six head. My wife or little boy as often put up the cows as myself, and they like the plan.

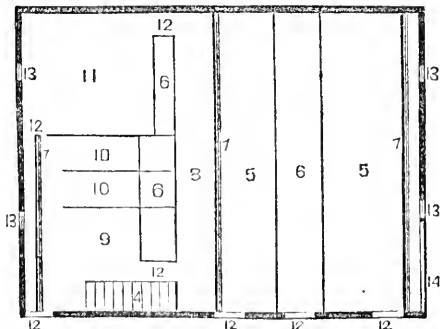
My gates are made as follows: I took a 3 by 4 pine scantling long enough to reach to the bars above, making mortices to receive an inch board up to the height of four feet; put in the board and confine the joints in like manner, but with shorter scantling. Made round tenons at the top and bottom of the longest scantling to fit a two-inch hole in the floor and above. JOHN JOUNSON.
—Perry, Ven. Co., Pa.

BARN AND COW STABLE.—One of your correspondents in the November number, wishes for a plan of a hay barn and cow stable. I send you a rough sketch of one I have used for twelve years past, which answers my purposes tolerably well.

The barn is 33 ft. by 44 ft. There is stabling and cellar under the whole, and also a manure cellar under the stabling.



PLAN A.—Upper Floor.—1, Barn floor. 2, Bays for hay. 3, Spaces 3 ft. wide and 3 ft. high, with a lean-to roof partly under the bays for shoving hay into the mangers. 4, Stairs that lead to stables.



PLAN B.—Lower Floor.—5, Cows stables. 6, Mangers. 7, Planks 9 in. wide covering a space 7 in. wide running the entire length of the sta-

ble; they turn up on hinges for shoving the manure into the cellar below. 8, Stable for calves, with small stanchions. 9, Stables for oxen. 10, Stables for horses. 11, Cellar for roots, &c. 12, Doors. 13, Windows for ventilation. 14, Doorway under the stable, 10 ft. wide, for hauling manure from the cellar.

For a barn of this description, it is necessary to have a side hill or ground somewhat descending. It need not be very steep, as we can rise some to get to the barn floor, and we can also rise in getting out of the manure cellar. The manure cellar and stabling are built of stone, making the walls 14 ft. high, on which the barn is set.

In answer to your correspondent's considerations, I would say:

1. It is somewhat difficult to say how large a barn should be to stable twenty cows and contain their food. It would depend somewhat on the kind of hay used.

2. I do not know of any more convenient mode of storing the hay. Barns of the width of mine should have middle or upper plates to support the roof, and there should be posts on each side of the barn floor going up to the upper plates. The great beam should go near the top of the posts or into the upper plates. This makes it convenient in pitching off the hay.

3. The cellar you can make larger or smaller, so as to take in what roots, apples, pumpkins, &c., you may wish to store.

4. This is the most convenient way of feeding cattle I know of. The hay is shoved off one side the floor without the trouble of lifting. It falls into a double manger and foddens twenty head in the time it would take to feed ten any other way. In the above plan forty head may be fed from the barn floor. In a double manger, cattle eat coarse hay, straw, &c., much better than in single mangers.

5. The manure cellar is a good method of saving the liquid and solid excrements in one heap without the extra expense of making tanks, &c.

6. I think stanchions are best for confining cows. They should be at least three feet apart.

7. We have one barn half a mile from home. Here the cows are turned out and watered night and morning. The stables are cleaned out in the interval. The cows are kept shut up 22 out of the 24 hours. We think they do as well and better at this barn than where they lie out longer in the wind and on the snow. We shut up our cows at all times when we milk them. HORACE HUMPHREY.—Winchester Centre, Ct.

PLANTING HEDGES.—In regard to planting Hedges for fence, I wish to inquire, through the *Farmer*, if it would not be advisable, especially in fencing lots containing ten or fifteen acres, to prepare a bed and sow the seed where it is wanted for the hedge? And if so, what kind would you prefer to plant on dry sandy loam, to enclose say ten acres intended for an orchard? What time would be required? And what would be the probable cost? JAMES D. HURD.
Savannah, N. Y.

SLEEP DISEASE.—Can you, or any of your valuable correspondents, inform me whether there is such a disease among sheep as *Stratches*, and if so, a remedy. H. NELSON.
—Waukesha, Wis.

HEAVES.—There is an inquiry often made, but never satisfactorily answered, and which I now wish you or some of your eastern correspondents to reply to. It is in regard to a disease among horses known as "heaves"—a disease so common in many places at the east, that to see a horse ten or twelve years old free from it, is regarded as rather remarkable. There is no such disease known among horses reared here; and even horses brought here, having it very bad, in nearly every instance recover from it in a short time, and *always* are so far relieved as to render it scarcely perceptible. This is a very important matter—one worthy of consideration and investigation.

In addition to what has been said in regard to "heaves," it is also a well established fact that our horses are much more healthy than eastern horses, rarely being attacked with the ordinary diseases to which horses are subject, enduring more labor and greater exposure, and living to a much more advanced age. Further, if I mistake not, mares do not commonly breed at the east after they are twelve years old. Not so here; they breed very well until twenty, and often until twenty-five years old.

What reason can be assigned for the difference in favor of the health, longevity, &c., of our horses, as compared with those raised in an eastern climate, which is commonly regarded as much more healthy than a western?

The inquiry I started out to make in regard to the *cause* of "heaves," I perceive has taken a rather wide range; but I see nothing to take back. I. D. G. NELSON.—*Elm Park, Ind.*

CRANBERRIES.—I desire information about raising cranberries, from sowing the berries broadcast over prairie adapted to their growth. Do you know how they succeed when sown in this way, and will you give us your views in relation to the best manner of setting a field with them? We are trying them broadcast this winter, and my intention is to get the cranberry soil from the marshes, where they grow spontaneously, and set them about six feet apart, on low prairie adapted to their growth, unless you can tell us a better plan. CHARLES BRACKETT.—*Rochester, Ind.*

WHEAT BLIGHT IN ILLINOIS.—For a number of years our spring wheat, more particularly, has been diseased by what is termed blight; that is, when it begins to ripen, the head, or a part of it,—sometimes but a few kernels, and from that to the whole head,—will turn black and rot on the stalk, whilst other kernels will be plump and bright; so that a fine growth of straw will yield but from 6 to 10 bu., and that of the poorest quality. Now, can you tell us anything about the cause, and remedy. If so, you will confer a great favor. J. D. TAMM.—*Bbsdilore, Ill.*

CIDER MILL.—Will you please give me, in your excellent paper, a plan of the cider mill now in use, (more particularly the grinding part) for using one horse, the length of the sweep not to exceed ten feet; how fast it will grind, and its probable cost. W. AINSWORTH.—*Cape Vincent.*

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[3-24]

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[3-24]

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REVOLUTIONARY, Indian Wars, War of 1812, Florida, and Mexican Wars. Claims for Pensions allowed the widows of those who died in service, prosecuted by

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Animals of every kind are fearful of it, for it has as many strong, sharp thorns as there leaves upon the plant.

No animal will browse it, not even to eat a single leaf. It grows rapidly and will make a perfect hedge against man or beast in four or five years.

It is perfectly hardy, as has now been well proved on our own premises.

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12,000 Giant Rhubarb producing large petioles of first quality, that bear carriage for market purposes better than any other sort. \$60 per thousand eyes, or \$10 per hundred.

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Also, will be published early in March, Hints on Planting Orchards and Culture of Fruits, Descriptive lists of best sorts, and a Synopsis of M. D'Albert's mode of forming Pyramidal Trees—translated from the French. Will be sent by post on 27 cts being remitted in a pre-paid envelope.

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DWARF AND PYRAMIDAL PEAR TREES, on quince stocks. About 50,000, embracing every fine variety that can be worked, two year old trees, low branched, vigorous and beautiful.

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The entire fruit department is under our own personal supervision. The best quality of stocks is used, and the most scrupulous attention given to insure accuracy. We flatter ourselves that no nursery collection can offer a stronger guarantee to purchasers, in this respect. The stock is all grown on new, fresh soil, and is healthy, well matured, and hardy. We ask purchasers to examine it.

ORNAMENTAL.—Large trees, for streets, parks, &c., such as Horse Chestnuts, Silver Maples, Sugar Maples, Snowy Abeles, Mountain Ash, Elms, and Tulip Trees, in large quantities, cheap.

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 - American White Spruce, 2 to 3 feet.
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 - Austrian Pine, 1 to 3 feet.
 - Scotch Fir, 1 to 3 feet.
 - Red Cedar, 1½ to 2 feet.
 - American Arbor Vitæ, 1 to 2 feet.
 - Chinese Arbor Vitæ, 2 to 3 feet.
 - Deodar Cedar, 1 to 1½ feet.
 - Chili Pine, (Araucaria imbricata,) 12 to 18 inches.
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C. J. RYAN, & Co.,
PROPRIETORS OF THE ROCHESTER AND CHAR-
LOTTE PLANK ROAD NURSERIES,

Office 68 State Street, Rochester, N. Y.,

TAKE this method of returning thanks to the citizens of Rochester and the public for the very liberal patronage they have received which enables them to extend their business both in the glass and out door departments.

They offer for sale at low prices a general nursery stock of fibrous rooted Fruit and Ornamental Trees, Shrubs, Plants, Bulls, Roots, and Hedge Stuff of every description.

A few hundred Roots left of our Superb Dahlias. The following awards speak for their superiority:

Highest Premium at the Monroe County and Genesee Valley Exhibitions of 1850 and 1852.

Highest Premium at the New York State Fair held in Rochester in 1851.

Highest Premium at the Provincial Agricultural Societies of the Canada held in Brockville in 1851, and in Toronto in 1852.

Our flowers have obtained the highest awards wherever exhibited.

A select collection of Green-house plants and Roses for sale, a large stock of plants for bedding out approved varieties kept in pots will be sold low.

March, 1853.—1t.

Basket Willow.

CUTTINGS of the best kind of basket willow (with directions for planting) for sale at \$5 a thousand by

WM. H. DENNING,
 Fishkill Landing, Dutchess Co.

March, 1853.—2t*.

FRUIT TREES, &c.

A. Frost & Co., Genesee Valley Nurseries, Rochester, N. Y.

OFFER for sale the following at low prices, which comprises a part of their large stock, that they will forward to any part of the country. Parties can depend that no second rate articles will be sent out, and that they will prove to be true to description. The packing is done in the most secure manner, that plants may reach their destination in perfect safety.

APPLE TREES.—Standards of fifty best leading varieties of apples. Dwarf and Pyramidal bushes, 1 and 2 years old, for gardens.

PEAR TREES.—Standards, on pear stock, 2 and 3 years old, comprising all the fine sorts. Pyramidal and Dwarf, worked on imported Quince, 2 and 3 years old. Pyramidal, extra size, with fruit buds.

CHERRY TREES.—Standards, a large collection embracing 43 best sorts. Dwarf and Pyramidal, 2 years old, for orchards and gardens.

PEACH TREES.—All the desirable varieties.

PLUM, NECTARINE AND APRICOT TREES.

QUINCE BUSHES.—Portugal, and the Apple or Orange.

GRAPE VINES.—Native—Catawba, Clinton, and Isabella. Foreign, in pots, suitable for planting at once; embracing 13 of the finest sorts.

CURRENTS.—White and Red Grape, Cherry, May's Victoria, White and Red Dutch, Black Naples, English, and 8 other kinds.

GOOSEBERRIES.—A large stock of 40 Prize Lancashire varieties, best suited for cultivation in this climate.

RASPBERRIES.—Yellow, or White, and Red Antwerp, Fastoff, Franconia, Large Fruited Monthly (Rivers), and the Red Antwerp which is so extensively cultivated on the Hudson for the New York market.

STRAWBERRIES.—12 of the best sorts.

ESCULENT ROOTS.—Asparagus, 2 years; Rhubarb of all sorts; Sea Kale, &c. The Asparagus will be sold very low, if a large quantity is taken.

HEDGES.—Privet, 2 years; Buckthorn and Osage Orange, 1 year.

THE ORNAMENTAL DEPARTMENT

is very extensive, and they refer parties to their catalogue for the varieties they cultivate, but will notice the following: **SALIX PENDULA.**—A new Weeping Willow. It is one of the most beautiful and graceful trees, for lawns, &c., in cultivation.

ROSES.—An extensive stock on hand, comprising more than 300 of the varieties. 150 of the sorts are Remontant or Hybrid Perpetuals, many of which that are now offered by them are presented to the public for the first time in this country.

BULBS.—Of those that are suitable for planting in the spring, they have strong flowering ones of Japan Lilies, which will produce from one to five blooms each, as follows: *Lancifolium album* and *rubrum*, *Lancifolium punctatum*.

BEDDING PLANTS.—Their stock of Dahlias, Verbenas, &c., &c., for extensive and choice varieties of the respective kinds, cannot be excelled, if equalled, in the United States. 100,000 Norway Spruce Firs, and other hardy evergreens. 4 to 15 inches high. Price very low by the quantity.

The following Descriptive Catalogue, lately published, and containing the prices, will be mailed free, upon application, when one cent postage stamp is enclosed for each Catalogue wanted, to any part of the country.

No. 1. A Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, &c., &c.

No. 2. A Descriptive Catalogue of Dahlias, Verbenas, and other bedding plants.

No. 3. A Wholesale Catalogue or Trade List, for nurserymen and others who wish to buy in quantities. March, 1853.

Gooseberries, Fastoff Raspberries, &c.

JOHN SAUL, Washington, D. C., offers the following for sale:

4,000 Lancashire Gooseberries, comprising all the leading varieties, such as Crown Bob, Roaring Lion, Red Warrington, Champagne, Leigh's Rifleman, Parkinson's Green Laurel, Woodward's Whitesmith, &c. The plants are very vigorous and thrifty, and true to name.

4,000 Fastoff Raspberries, strong canes, warranted the genuine variety.

300 Raby Castle or Victoria Red Currant,—the largest and best. 300 Wilmot's large Red do. 500 White Dutch do. 300 Black Naples do.

The above at very reasonable prices. March, 1853—2t.

D. S. MANLEY & BROTHER, BUFFALO NURSERY, Buffalo, N. Y.

HAVING purchased this well established Nursery of its original proprietor, Col. B. Hodge, we take pleasure in offering for sale an unusually fine assortment of

FRUIT AND ORNAMENTAL TREES, SHRUBS AND PLANTS.

Our Fruit Department is supplied with fine healthy trees on their own stocks, of all the desirable varieties now in cultivation, together with Cherries and Pears dwarfed on superior stocks.

The Ornamental Department includes all the best varieties of Evergreen and Deciduous trees.

Roses.—One of the finest collections in this country, comprising all that are new and rare.

Dahlias.—An unrivalled selection of Dahlias, which has been procured at great cost.

Peonias.—We call particular attention to our stock of Peonias, both herbaceous and tree varieties.

The stock of *Shrubs* is unusually extensive and was collected by the late proprietors with peculiar care.

Of Currants, Gooseberries, Raspberries, Grapes, and Strawberries, we have vigorous plants of the best varieties.

It will please us to furnish all applicants with our Catalogue.

NURSERY NOTICE.

A Rare Chance for Beginners.

THE subscribers, being desirous of clearing the land for other purposes, offer for sale the coming spring, at very low rates, and in lots to suit purchasers,

15,000 Apple trees, 2 years from graft.

25,000 " " 1 year "

2,000 Pears on Quince, 1 year from bud.

5,000 Standard Cherries, 1 year from bud.

2,000 Peaches, 2 years from bud.

Also, 10,000 yearling Cherry Seedlings, root-pruned.

The trees are well grown, in good condition, and may be relied on; and for beginners this is a rare chance, not only for obtaining a marketable stock sooner and cheaper than the usual mode, but also for securing as good an assortment as can be desired, comprising the principal varieties of merit now cultivated in our country.

All communications, &c., should be sent in as early as possible, to prevent disappointment or delay.

Catalogues furnished to all post-paid applicants enclosing one postage stamp. Address

SHEPPARD, CHERRY, & CO.,

Feb'y, 1853. River Bank Nursery, Rochester, N. Y.

Norway Spruce, Silver Fir, &c.

JOHN SAUL, Washington, D. C., offers the following for sale:

300,000 Norway Spruce, 4 to 6 inches.

300,000 " " 6 to 8 "

15,000 " " 9 to 12 "

8,000 " " 2 to 3 feet.

10,000 Silver Fir, 4 to 5 inches

30,000 " " 5 to 6 "

10,000 " " 6 to 7 "

1,000 " " 12 to 15 "

1,000 " " 2 to 3 feet.

3,000 Larch (Enrop'n) 2 to 3 "

The attention of Nurserymen and Planters generally, is respectfully called to the above extensive collection, which will be sold at very low prices. Persons taking large quantities will be dealt with liberally. The whole are remarkably thrifty and fine.

March, 1853—2t.

Premium Dahlias.

THE subscribers offer for sale this Autumn and the ensuing Spring, 10,000 Dahlia Roots, which have proved to be the choicest collection in the States and Canadas. [See records of the Fairs for the last four years.]

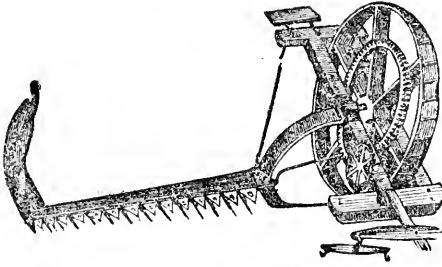
Persons commencing the Nursery business, and Amateurs, will find it to their advantage to give us a call, or make enquiries before purchasing elsewhere.

C. J. RYAN & CO.,

Rochester and Charlotte Plank Road Nurseries, Rochester, N. Y. [11-4f]

Prouty and Mear's Plows.

A large assortment of these celebrated Plows can be found at the North River Agricultural Warehouse and Seed Store, 53 Corland St., New York. **GEO. H. BARR & CO.**



KETCHUM'S PATENT MOWING MACHINE.
Howard & Co., Proprietors & Manufacturers,
BUFFALO, N. Y.

THIS justly celebrated machine has been steadily advancing in public favor, for its simplicity durability and efficiency—and it has settled the question beyond a doubt that grass can be cut by Horse Power; for during last season, five hundred of these machines were sold by us, and universally approved of by those who used them. Farmers were daily in the habit of cutting from ten to fifteen acres per day, with ordinary driving. It leaves the grass uniformly spread over the ground, requiring no turning to cure properly. In the Report of the Committee who served at the Trial of Mowing and Reaping Machines, held at Geneva in July last, they show fully and conclusively *this to have been the only machine in the field which cut its allotted two acres without clogging or any interruption*, doing its work admirably, and in far better manner than can be done by manual labor with a scythe. Our knives are not *sickly-slegel*, consequently do not clog at every little hummock or bog they may happen to come in contact with. The Committee also show that there is an actual saving, by the use of this machine over hand labor, of \$18 per day. We have only to refer those who want a perfect Mowing Machine to examine the Report and judge for themselves. This machine took the first premium as a mower, at the trial in Springfield, Ohio; a gold medal at the Fair of the American Institute, N. Y., also, first premium at the Provincial Fair at Toronto, C. W.

They are so very compact that one of them can be easily carried in an ordinary one-horse wagon, and so very simple that it requires no machinist to put it together, as there are but two bolts (beside the pole bolts) to be secured to have the machine ready for use, and which does not require over ten minutes time. They weigh about 750 lbs., and can be worked by any boy who can manage a team. We have made all the improvements suggested by experience in the way of strength, durability, &c., and sell them under the following warranty: That said machines are capable of cutting and spreading, with one span of horses and driver, from ten to fifteen acres per day, of *any kind of grass*, heavy or light, wet or dry, and do it as well as is done with a scythe by the best of mowers. They are equally capable of cutting barley, buckwheat, millet, &c. It is much less trouble to keep the knives in order than a scythe, as they have frequently been known to cut from ten to fifteen acres without sharpening, which can be done on an ordinary grind-stone in a few minutes. We can give any reference required, for the full performance of our machine, as above stated.

Orders should be sent in early, as we shall manufacture but a limited number. The price of our machine, including two sets of knives, extra knife blades, wrench, &c., is \$140, cash, in Buffalo, the machine to be delivered on board of boat or cars free of charge.

Office and shop, corner of Chicago street and Hanburgh canal, near Eastern R. R. Depot, Buffalo.
March, 1853.—H. HOWARD & CO.

J. RAPALJE & Co., are sole agents for the sale of the above machine in Rochester, which they will sell at manufacturers' prices.

Manures.

FERTILIZERS of all kinds for sale by the subscribers. Improved Superphosphate of Lime, Superphosphate of Lime—both the above made under the recipe of Prof. Mages. Peruvian Guano, Sulphuric Acid, Bone-dust, Potash Sparings, Pondrette, Plaster of Paris, &c. &c.
GEO. H. BAER & CO.
13 Cortland St., New York.

EMERY'S MOWER AND REAPER.

THE subscriber, not only having made himself practically acquainted with the construction and working of all the successful machines of this class, but having made and successfully introduced several valuable improvements in some classes of agricultural machinery, which have already gained favorable and world-wide reputation and adoption, flatters himself that he has also made an improvement in the construction of a Mower and Reaper of equal if not greater merit, than any of his former improvements.

It will suffice to say, that while this is the most compact, light, simple, cheap, durable, easy working machine, it is at the same time the most perfectly adjustable, and easily convertible into a Mower or Reaper, working as perfectly in either form as those of the best other kinds, whether simple or combined. The frame itself is so suspended upon the axis of the main wheel, as to be elevated and depressed at pleasure, so as to secure a horizontal or inclined (forward or back) position of the whole machine, at whatever elevation used, thus always having the cutting works in proper position.

In reaping, a reel is used, and the raker stands erect, face forward and directly behind the platform, with a support about him; the movable platform being on the same plane with the frame-work at the side of the discharge, and at the same time about two inches above the stubble. With the above introduction, and the diagrams to follow, together with those in this number of the Genesee Farmer, the public will have before them several machines from which to make a selection before purchasing for the coming season, and at the same time know what they are purchasing, much better than to be guided alone by impracticably written and published reports of committees of public trials, and be enabled to purchase only such articles as have their practical as well as theoretical merits plainly pointed out, or if not so pointed, to purchase only of responsible manufacturers, who are willing to back their machines by their reputation and capital.

For further particulars concerning the Reaper and Mower above described, address

HORACE L. EMERY, Albany, N. Y.

March, 1853.

E. D. HULLOCK, No. 50 State street, Rochester, is agent for Western New York, and will have one put up in running order in his store. Those in his vicinity wishing to obtain a Reaper and Mower, are requested to call and examine the merits of the above machine before purchasing elsewhere.

Superphosphate of Lime.

THIS extraordinary fertilizer, the effects of which as a manure and general assistant to soils, has proved itself invaluable to the agriculturist. This most important constituent of the soil is being daily removed and taken up in solution by plants, and unless such substance be returned fertility must decrease and the land become poor, its promoting and pushing power of growth giving strength to young plants while in their tender state and fortifying them for early maturity, exceeds over all other manures. It is some ten years since its introduction in England, where, from its pronounced *magic effects*, its introducer received a patent right from the English government.

The progressive high repute of its properties has caused the demand to increase each year. At the present time some thousand tons are annually sold to the farmers.

The subscriber has had much experience in the peculiar manufacture of this manure in Europe, which leads him to suppose that he stands unequalled by any competitor. Some considerable quantity was sold last season and tried on various crops, the beneficial results of which has caused orders for forward delivery in the coming spring to a large extent. Being in a powder, it is easy in handling, may be drilled in with seed, sown, &c.

To prevent deception being practiced, all packages will henceforward be branded with the maker's name. For sale at the following Agricultural warehouses:

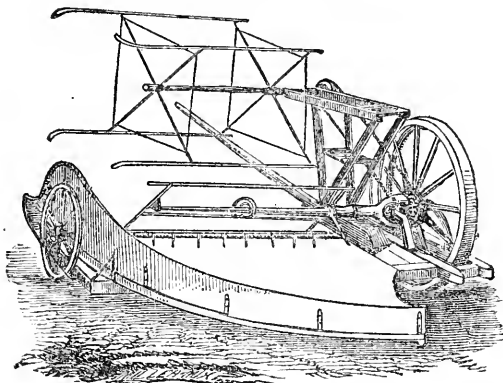
LONGETT & GRIFPING,

25 Cliff St., New York,
R. J. ALLEN, (late A. B. ALLEN & Co.)
189 Water St., New York.

where purchasers may be sure of obtaining a chemically pure and genuine article.

Enquire for C. E. DeBURE's No. 1 Superphosphate of Lime. [3-31]

Northern N. Y. Live Stock Insurance Company, Plattsburgh, N. Y. For terms, please apply to agents of the Company.



PALMER AND WILLAMS' SELF-RAKING REAPER.

THIS machine was patented July 1st, 1851, and has been thoroughly tested the two past years. It is very simple in construction, having only one entire cog wheel and one pinion in the whole machine. The driving wheel is about four feet, and the ground wheel thirty inches in diameter, and are so arranged as entirely to obviate the side draft, and hence a single team can manage it with speed and ease. The knife or sickle is scolloped, and cannot be clogged in any kind of grain. The grain is raked off so as to be out of the way of the team in re-passing, and is in good shape for binding. The size of the sheaf is perfectly under the control of the driver. By a simple movement of his foot, he can throw the rake in and out of gear. If, however, he pays no attention to it, then the raking off will be done at regular intervals. In backing, the entire machine is thrown out of gear, and ceases to operate. We are the exclusive manufacturers of this Reaper for the harvest of 1853, and have been extensively engaged for several years in the manufacture of agricultural implements, and have examined the working of several Reapers, and received proposals for building others, but consider this far superior to them all. Such is our confidence in its superiority that we now have *one hundred* of them in course of manufacture, and shall be ready to deliver them on orders by the 1st of June next. We warrant the Reaper *well made* of good materials, durable with proper care, and capable of cutting better than by ordinary cradling, from 15 to 20 acres of standing grain per day, laying it in gavels for binding.

Appended are a few certificates of its operations:

JANESVILLE, Wisconsin, Jan. 12, 1853.

MESSES. PALMER & WILLIAMS, GENTS:—After receiving your Reaper I laid mine aside, and finished my harvest with yours, (40 acres.) It is a perfect self-raker, it cuts the grain perfectly in all conditions, and rakes it off out of the way of the team in re-passing. It runs lighter than any reaper I have ever used, two horses managing it with ease. Farmers can now rely upon a Self-Raking Reaper, that will work to their satisfaction.

H. P. CULVER.

BATAVIA, Oct. 6, 1852.

MR. PALMER, SIR:—I have cut 70 acres of wheat with the Reaper I purchased of you. Much of it was heavy and lodged. It cut it in the neatest manner and raked it off better than it could have been done by hand, leaving the grain ready to bind. I only used one span of horses and cut nine acres and a half in 3 hours and 55 minutes. I cut nineteen and a half acres per day. I believe I can cut with one good team, 25 acres per day. I have used other kinds of Reapers, but consider yours vastly superior to all others; in a word, it is easy for a team, does the work well, and is a very great saving of labor and grain.

Yours, &c., C. R. BRINKERHOOF.

BATAVIA, N. Y., Oct. 25, 1852.

MESSES. WILLIAMS & PALMER, GENTS:—We, the undersigned, saw the Reaper (known as "Williams & Palmer's Self-Raking Reaper,") in full work in C. R. Brinkerhoof's wheat field, in the last harvest, in this town and we are glad of the opportunity to express our entire approbation in the work done, both in cutting the grain and raking it off the machine. We were surprised with its simplicity, and could

not but admire the ease with which the raking part is controlled.

H. U. SOPHER,
JOSEPH GATES,
JOHN DOKMAN,
H. BOSTWICK,
CHESTER SCOTT,
H. H. CORBIN,
M. U. SOPHER,
E. HOWELL,
REV. A. STEEL,
R. FERRON.

SWEDEN, Jan. 1, 1853.

MESSES. J. GANSON & Co.:—I have examined the Self-Raking Reaper Machine now being built by you. I have had a good deal of experience in harvesting grain with a Reaper, usually cutting my own grain, from 100 to 150 acres per year, and am free to say that I consider Palmer & Williams' Self-Raking Machine the best Reaper I have ever seen.

F. P. ROOT.

BROCKPORT, Jan. 1, 1853.

MESSES. J. GANSON & Co., SIRS:—I cut with the Self-Raking Machine I had of Palmer & Williams, in the last harvest, about 50 acres of wheat; some of it was badly lodged. I have tried several reapers, but consider yours vastly superior to any I have ever used. The raking off was well done. It drops the grain in good shape for binding, without leaving a trail. The cutting is done without clogging and the draft I think full one-third easier for a team than the ordinary reaper.

ISAAC PALMER.

SPRINGFIELD, Ohio, July 2, 1852.

MR. PALMER:—This certifies that we were the binders of the grain on the final trial of Reapers, by the Ohio State Agricultural Society, and that it is our opinion that Palmer & Williams' Self-Raking Reaper left the grain in the best manner for binding of any Reaper on the ground, and that it done all its work equal to any of them.

SAMUEL PATTEN, JOHN MANGAN,
WM. A. REID, JOHN FARRELL,
TIMOTHY MANGAN, MICHAEL HARD,
WM. FOSTER, *Owner of the Land.*

AGENTS—J. Rapajje & Co., Rochester; W. K. Marvin, Lockport; C. R. Brinkerhoof, Batavia; N. U. Tracy, Penn Yan.

French Zinc Paint.

THIS new and beautiful article of Paint is now offered to the trade and public, ground in prepared linseed oil, for the first time in this country. It has been used successfully in France for the last five years, where it has superseded white Lead as a paint.

The French Zinc when properly prepared and used, makes the most brilliant and durable white in use, and is entirely free from all poisonous qualities.

The French Zinc is not more expensive than white lead, and is prepared in such a manner that it requires no further preparation for use, than to thin it with Turpentine or raw Oil to the consistency of white lead paint.

The French Zinc is very much whiter, and has a better body, than the New Jersey Zinc.

The French Zinc is offered dry, and prepared as above, in quantities to suit purchasers, at the Manufacturer's Depot, No. 17 Buffalo st., Rochester, N. Y.

July, 1852,

M. F. REYNOLDS.

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Emery's Patent First Premium, 1852,
RAILROAD HORSE POWER,
THRASHING MACHINES, SEPARATORS, &c.,
 Western New York Agency.
E. D. HALLOCK, Agricultural Warehouse,
 No. 56, STATE ST., ROCHESTER, N. Y.

THE Subscriber, late from the Albany Agricultural Works, Warehouse, and Seed Store, where he has been engaged for the past six years, has secured the sole Agency for the sale of Emery's Patent Railroad Horse Power for Rochester and vicinity, so widely and favorably known throughout the country, and which has, without exception, taken every highest premium awarded in the States of Ohio, Michigan, and in New York, for the best Railroad Horse Powers, in 1850, 1851, and again in 1852, also at the Provincial Fair of Canada, recently held at Toronto, was awarded a Diploma and £2, of which the judges highly commend the principle and workmanship of this Power, now offer them at manufacturer's prices, with the transportation added, and subject to the warrantee as follows:

"To work to the satisfaction of the purchasers as represented in Circulars and Catalogues, or to be returned within three months and full purchase money to be refunded."

For further particulars see Circulars and Catalogues, which are furnished gratis on application to the subscriber.

The attention of the Farming public is solicited, and a careful investigation into the construction of this Power, and its comparative merits, as well as price, is requested before purchasing elsewhere.

The Wheeler Power is also offered ten dollars cheaper than heretofore by any other agency, and subject to same warrantee as given by others for the same kinds. Samples will be kept constantly on hand, and to insure promptness and avoid disappointments in supplying them, farmers are requested to send in their orders at as early a date as possible.

He will keep for sale, Emery's Seed Planters, the best in use; Circular and Cross Cut Saw Mills, Feed Mills, Corn Stalk and Hay Cutters, Corn Shellers, Churning fixtures, &c., adapted to the Power.

Also, Reapers, Mowing Machines, Grain Drills, Plows, Harrows, Cultivators, Corn Shellers, Hay Cutters, Fan Mills, and agricultural and horticultural implements generally. He will be prepared to furnish dealers with Dunn and Taylor's well known Scythes; also, Manure, Straw, and Hay Forks, Smalls, Rifles, and other haying tools, at manufacturer's prices, wholesale and retail.

Particular attention is called to A NEW PLOW, which is believed to be the best cast-iron Plow ever offered, and which is warranted to do better work, with less expense of team than any plow heretofore sold in this vicinity, while the price is less than for any other equally well finished.

The "uniform one-price, cash system" will be adopted, with the prices as low as the cost of articles and just compensation for labor and time will allow. Farmers and others are invited to call and examine the stock of Machines and Implements,—and are assured no effort shall be wanting to meet promptly the wants of a discriminating public.

[11-1] E. D. HALLOCK.

THE HORTICULTURIST,

And Journal of Rural Art and Rural Taste.

THIS is a Monthly Journal of 48 pages, beautifully printed on the finest paper, and elegantly illustrated, making one of the most beautiful Monthly Magazines published in the world. It is devoted to Horticulture, in its various departments, Rural Architecture, and to all that concerns Rural Life, and to the cultivation of Rural Taste.

It is edited by P. BARRY, so long known and esteemed as the Horticultural Editor of the *Genesee Farmer*, and published at the low price of \$2 per year. A discount of 20 per cent. allowed to agents.

JAMES VICK, Jr.,
 Publisher, Rochester, N. Y.

LINNÆAN GARDEN AND NURSERIES,
FLUSHING, N. Y.

WM. R. PRINCE & Co. intend selling off the trees from fifty acres of their Nurseries the present spring, the ground being wanted for buildings. The collection is unrivalled, and Nurserymen that desire assortments of the very best articles will never meet a more favorable opportunity, as they will be sold low for cash, or at credits suitable to the purchasers where payment is sure. Priced Catalogues sent to post-paid applicants who enclose stamps; also, a Wholesale Catalogue for Nurseries.

Those who desire large quantities or special assortments, can send their lists to us to be priced.

N. B.—Scions of the six finest European Osiers at \$20 per thousand. March, 1853.—11.

Patent Mammoth Premium Corn-Stalk,
Hay, and Straw Cutters & Grinders.

CAPABLE of preparing 100 bushels of Corn-stalks, or One Ton of Hay or Straw, per hour, and reducing the largest Corn-stalks to the consistency of Cut Straw, avoiding the necessity of steaming or soaking, and saving 80 per cent. over the common way of feeding fodder. Horses and Cattle will do as well on fodder prepared this way, as on the best hay. The First Premiums have been awarded at every exhibition where they have been exhibited for competition. It can be worked by hand or power, without additional cost. The inventor will forfeit \$50, after an impartial trial, when this Machine is used in preparing good fodder, if it does not prove to save 80 per cent. over the common way of feeding fodder, and it may be fed in the same condition as the machine leaves it, without meal or soaking. Cows fed on fodder produce sweeter butter. Over 900 of these Machines have been sold. Price—\$35.

State and County Rights for sale.

Gilbert's Excelsior Thresher and Cleaner, Accomplishing more, with the same power, than any other Machine. It can be driven with two horses.

Price—\$200 and upwards, according to size. Horse Power included. Apply post paid to J. G. GILBERT,
 [2-1] 216 Pearl st., New York.

The Practical and Scientific Farmer's own Paper.

THE GENESEE FARMER,

A MONTHLY JOURNAL OF

AGRICULTURE AND HORTICULTURE,

ILLUSTRATED WITH NUMEROUS ENGRAVINGS OF

Farm Buildings, Domestic Animals, Implements, &c.

VOLUME XIV, FOR 1853.

DANIEL LEE, JAMES VICK, Jr., & JOSEPH HARRIS, EDITORS.

P. BARRY, Conductor of Horticultural Department.

Fifty Cents a Year, in Advance.

Five Copies for \$2—Eight Copies for \$3, and any larger number at the same rate.

All subscriptions to commence with the year, and the entire volume supplied to all subscribers.

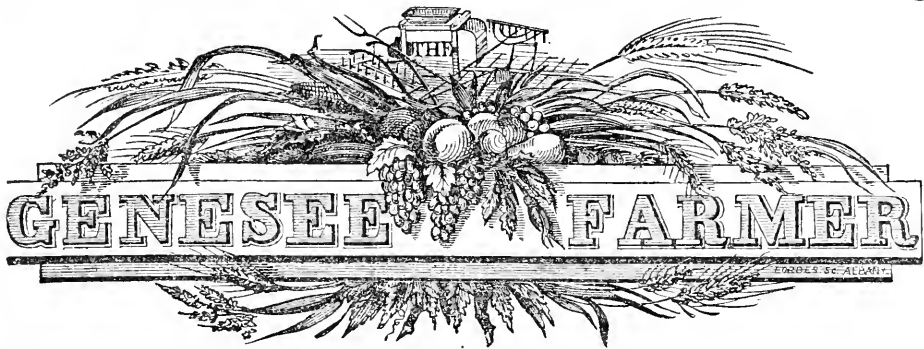
Post-Masters, Farmers, and all friends of improvement, are respectfully solicited to obtain and forward subscriptions.

Subscription money, if properly enclosed, may be sent (post-paid or free) at the risk of the Publisher. Address to DANIEL LEE,

November, 1852.

Rochester, N. Y.

STEREOTYPED BY J. W. BROWN, ROCHESTER, N. Y.



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No. IV.

DAIRY HUSBANDRY IN NEW YORK.

ABOUT forty years ago the dairy business was commenced as a distinct branch of husbandry, in the State of New York, under favorable auspices. It had a slow growth for twenty years, during which several millions of acres of native forests were cleared and brought under the plow, and paid a larger immediate profit in grain culture, than could be realized from milk, butter, and cheese. As the virgin soil parted with its elements of crops by tillage, and failed to produce remunerating harvests, farmers extended their pastures and meadows, and diminished their grain fields, until New York has become the largest stock growing and dairy State in the Union. It has about sixty per cent. more capital invested in live stock than either Ohio or Pennsylvania, according to the census of 1850. The returns are respectively as follows: New York, \$73,570,499; Ohio, \$44,121,741; Pennsylvania, \$41,500,053. The six New England States contained live stock worth \$49,867,721. These figures reveal the interesting fact that New York contains more live stock by \$23,702,777 than all New England. The latter contained in June 1850, 618,237 milch cows; New York, 931,324; being fifty per cent. more than the six New England States.

New York reported at the last census, 49,741,413 pounds of cheese, and 79,766,094 pounds of butter. The six New England States reported 27,128,778 pounds of cheese, and 43,637,477 pounds of butter. If we divide the number of pounds of butter made in New England, by the number of cows, the average is a fraction over seventy pounds a head. In New York the average is eighty-five pounds ten ounces to each cow. Of cheese the average in New York is fifty pounds five ounces; in New England it is forty-three pounds thirteen ounces. These figures show that the cows of New York produce some twenty per cent. more butter, and twelve per cent. more cheese than the cows of New England. Do the former yield any more milk each on an average than the latter?

We think that they do; not alone from the facts above stated in reference to butter and cheese, but because the population of New York in 1850 exceeded that of New England, by 363,174. New York contained 3,090,022; New England, 2,726,848 inhabitants. There is no good reason for believing that the people of New York consume less milk per capita, than the people of New England, before it is used for making butter or cheese; and if they do not, then a larger population by 363,174 should leave a less quantity of milk for dairy purposes. Hence we infer that the dairy cows of New York are superior as a whole, to those of New England; and we will now add that they are not only better than those of any other State in this country, but better than any which exist in Ireland, England, or Scotland, or on the continent of Europe, taken as a whole.

To do full justice to the dairy husbandry of New York in comparison with that of

Great Britain, Ireland, and other nations, as well as with the several States of this Republic, would require the space of a volume, and much more labor than we can bestow upon the subject. There are some State statistics, however, bearing on the improvement of the dairy stock in New York, to which we invite particular attention, as deserving of far more consideration than they have hitherto received. In drawing up the bill and schedules for the collection of the agricultural statistics of New York in 1845, (as chairman of the committee on agriculture,) the writer was careful to have all the cows milked in the State counted. This was done, and resulted in a total of 999,490; and now showing a falling off in 1850 of 68,066. Large as this decrease appears, it is really larger than the figures indicate.

There was a difficulty in stating in the census of 1850, the number of cows actually milked in each State, because in some States most of the cows giving milk rear their calves by their sides, and are never milked by hand at all. Hence the schedule calls for "milk cows," in which dry cows are returned as belonging to this division of neat stock, rather than to "other cattle," or "working oxen." In New York, one cow in twenty, (perhaps one in fifteen,) gives no milk. Deducting the former number, or five per cent. from the 931,324 returned in 1850 for dry cows, and the number milked would be 874,758. These figures show that the number milked in 1850 was 124,732 less than in 1845. Possibly this estimate of the reduction may a little exceed the truth; but the aggregate falling off in five years of the neat stock in the State, was 194,691; or nearly 200,000 head. Of this diminution, it is safe to say that one-half were cows; indicating a falling off of about ten per cent. in five years.

We come now to the interesting and exceedingly instructive fact, that nine hundred thousand cows (in round numbers,) yielded more milk, butter, and cheese, (being better milkers and better kept,) in 1850, than a million did in 1845. The cheese returned in 1845 was 36,747,976 pounds. These figures are less than the returns of 1850, by 12,991,437 pounds. The pounds of butter in 1845 were 79,501,733, showing an increase in five years of 264,361 pounds. These figures are the more note-worthy from the fact that while nine cows actually yielded more cheese and butter than ten did, the population to consume milk every day in the year, before it was made into cheese or butter, was 494,323 larger in the State in 1850, than in 1845. Of course it is impossible to say how much milk this increase of population would consume; but in 1845 there was a fraction over five persons to two cows in the State. At this ratio of increase, the number of cows in 1850 should be nearly 1,200,000 instead of 931,324. No one, we trust, will understand us as intimating that all the cows in New York are good milkers, or are properly kept. We desire simply to do justice to the intelligent dairymen and farmers, who, during the last forty years have rendered their country an invaluable service. These are the men who sustain our State and County agricultural societies, and the agricultural press, and with whom it is an honor to co-operate for the advancement of the arts and sciences which belong to the several branches of rural affairs.

Dairy husbandry has a deeper philosophy than many suppose; nor can it be comprehended without considerable close thinking and study. Let the pastures and meadows of a dairyman represent a thousand tons of grass per annum exclusive of the water which the forage may contain. This forage is to be fed to cows for the most economical production of milk, butter and cheese. Would it not be cheaper in the long run for him to pay \$50 a head for first rate milkers than to take poor ones as a free gift? We believe that poor cows do not pay the cost of their keep, or the value of their food twelve months in that length of time; therefore the more of such animals there is in a County or State, the poorer it is in agricultural wealth and income. In the State of New York, a mean animal is a tax upon its owner and the community, and should be so regarded by all. As the natural resources of the soil become exhausted, farmers can less afford to keep inferior animals of any kind; for the first cost of grain, hay, grass,

roots, and straw, increases with the increase of manure needed to produce good crops. In 1845, New York contained 6,443,865 sheep; in 1850 the number was reduced to 3,453,241; decrease in five years 2,990,624. The number of sheep slaughtered in the five years named, was much larger than the difference between the larger and smaller sums, otherwise the natural increase would have prevented so great a reduction. It was necessity that cut their throats. To replace three millions of sheep by dairy stock, at least four hundred thousand cows would be required. We shall take another occasion to demonstrate beyond all dispute, that not less than eight and a half of the twelve and a half million acres of land under improvement in New York is suffering deterioration at the rate of three dollars a year by parting with its elements of fertility. What we desire at this time is to call attention to the science of transforming the proper food of cows into milk, so that any given quantity of forage shall yield the maximum of dairy products.

The elements of this science are both anatomical and physiological; they relate to the digestive, respiratory, assimilative, and milk-secreting organs of the cow. Improper feeding will result in a far greater loss of milk from any given amount of food consumed even by a good cow, than would be likely to occur from a poor cow, if properly fed. In the first place, each and every lactiferous animal is compelled to support the natural warmth of her body by respiration, which never ceases, and literally burns up nearly, if not quite two-thirds of the aliment which passes through the walls of the intestines into the blood vessels; and from whose blood milk is separated. Not only does breathing take priority of milk-making in the economy of nature, but the daily and indispensable repair of every muscle, bone, membrane, nerve, and other organ, also claims priority to the full secretion of milk. In a word, the blood of a cow takes care of her system first, before it yields more than a trifle to feed her offspring, for whose benefit milk is elaborated.

Milk being the natural surplus of food in the blood vessels, over and above what the ever pressing calls of respiration and nutrition demand, we trust that it is not difficult for the reader to comprehend the fact that a given amount of aliment thrown into the stomachs of four cows, may yield twice the surplus, after supplying all the wants of their systems, to be transformed into milk, which could be obtained if the aliment had five systems to warm and support instead of four. In the case assumed, there is nutriment enough to keep four cows in sound and vigorous health, and allow each to have a surplus in her blood, equal to the formation of four or five gallons of milk in twenty-four hours. Divide this mass of food or aliment into five parts instead of four, and the breathing and other vital functions of the fifth cow, (we care not how excellent a milker she may be,) will consume and substantially waste full one-half of what might have been milk in the lacteal glands of four cows.

It is not enough to have first rate cows; the dairyman should know so much of their anatomy and physiology, as to be able to use the living machines in his possession to the best advantage. A good machine of any kind in the hands of an ignorant unskillful operator, uniformly turns out bad work. That is, the net profit is much less than it ought to be. Without entering into any explanation of the science of dairy physiology, the reader may make this induction from our remarks: The dairyman should keep no poor cows, and as few good ones as will consume the food to be converted into milk. If he intends to feed high, let the transition from low to high feeding be gradual; all sudden changes are injurious, whether upward or downward in their course. Provide, by the aid of corn grown for forage, by manuring pastures and meadows, and by root culture, a plenty of food for whatever cows are kept for dairy purposes. Have yards and stables so arranged and littered with straw, muck, forest leaves, or some other absorbent, as to preserve from waste or loss all the droppings of domestic animals.

After the writer came to Washington in 1849, to take charge of the agricultural

department of the Patent office, he went immediately to the office of the Census Board, to get the agricultural schedule changed so far as to enumerate all the cows in the United States. This was done, and the number returned by the marshalls was six million three hundred and ninety-one thousand nine hundred and forty-six. For what useful purpose was this separation of milch kine from other neat stock? This is a question which every farmer ought to study. A general and most valuable improvement of the bovine race was contemplated by the mover in this matter, who had long felt the necessity of reliable agricultural statistics. The six and a half million cows in the United States now yield less than a moiety of the milk which the food consumed is capable of producing. Now, if we had an experimental dairy farm, with the needful appliances, we would soon demonstrate the truth of this statement in the most satisfactory manner. But public opinion is not yet ripe for the application of science to American husbandry; and therefore no truly scientific experiments, like those of BOUSSINGAULT and THOMPSON, are likely to be made in this country during the life of the present generation. According to the experiments of M. PERRAULT and PABST, a cow giving a full flow of milk, needs six and a quarter pounds of good hay or its equivalent in grass or roots for every 220 pounds live weight.

We will take an early occasion to resume the consideration of this subject, and endeavor to point out what part of the food consumed is voided by the bowels; what part by the kidneys; what by the lungs; what by sensible and insensible perspiration, and what through the udder as milk, in a good cow, properly fed and otherwise cared for. It is not too much to say that one hundred million dollars a year may be added to the income of the country by the judicious improvement of dairy stock, which implies equal improvement in their management and keep.

MAPES' IMPROVED SUPERPHOSPHATE OF LIME.

It will be recollected that in the December number of the *Farmer* we made a few comments on some statements by the editor of the *Working Farmer*, respecting the manufacture and value of "Mapes' Improved Superphosphate of Lime." What we particularly called attention to, was the assertion of the editor that his improved superphosphate of lime could not be made in England for \$100 per ton. Now it would appear to be of little consequence to us whether it could or could not be there manufactured for this sum; but, judging from the frequent reiteration of this assertion, the editor is of a different opinion. He knows that superphosphate of lime has been extensively used in England for the last ten years; British farmers therefore have had ample time to ascertain its comparative value, and to what particular crops it is best applied. He also knows that about seven million dollars worth of guano is used per annum in Great Britain. Now the editor wishes to have it understood that his improved superphosphate of lime is much more valuable than the best Peruvian guano; and to reconcile this assertion with the fact that such immense quantities of guano are used in England, where the value of superphosphate has been fully tested, the editor would have his readers believe that his improved superphosphate of lime cannot be made in England for twice what it sells for in this country. He says if it could be made in England for \$100 per ton, it would sell readily, and would soon, to his certain knowledge, take precedence of all other fertilizers. If this is so, how cheap a manure this must be to us American farmers at only \$50 per ton.

The editor objects to our publishing the analysis of his manure by Dr. ANTISELL, on the ground that it was not a fair sample of the article. He publishes another analysis of Dr. ANTISELL, of a sample sent by MAPES' manufacturer, which is of course as good

as the average. This sample appears to have been free from the lumps and undecomposed animal charcoal, which composed more than half the sample sent us. This analysis does not show whether the article is or is not a good superphosphate. It does not give us the per centage of ammonia, or of *soluble bi-phosphate of lime*,—the two ingredients of most value in any manure. It is said to have contained *free ammonia*. We are at a loss to know how a good *super-phosphate* mixture could contain *free ammonia*. But let that pass.

There is an analysis of "Mapes' improved superphosphate of lime," in the *Country Gentleman*, of March 3d, by Prof. S. W. JOHNSON, of Yale College, which is far more satisfactory, and clearly sets forth the true value of the manure. The thanks of the agricultural community are due Prof. JOHNSON, for these critical and valuable analyses. According to this analysis, 100 lbs. of "Mapes' improved superphosphate of lime" is composed of sulphate of lime, (plaster) 37 lbs.; *insoluble phosphate*, 21 lbs.; *soluble superphosphate of lime*, 15 lbs.; free sulphuric acid, 5 lbs.; ammonia, $2\frac{1}{2}$ lbs. The non-nitrogenous organic matter, water, and sand, which compose the other 20 lbs., are of course of but little value. This, then, is the manure that is far superior to Peruvian guano, and which cannot be duplicated in England for \$100 per ton.

Now, the fact is, that several thousand tons of superphosphate of lime, or as it is generally called "turnip manure," are annually sold in England, warranted to contain 18 per cent. of soluble superphosphate of lime, (MAPES' containing only 15,) and in every other respect equal to MAPES' improved article, for \$28,22 per ton, wholesale. Comment on these facts (which we are prepared to prove) is unnecessary. We would not be understood as saying that Prof. MAPES' manure is of little value. On the contrary, if it contains 15 per cent. of bi-phosphate of lime, it is one of the best manures that can be used for ruta бага, lettuce, radish, and other garden crops; and we recommend all our readers who intend sowing ruta бага and other turnip crops, to *drill in* with the seed about 300 lbs., of this manure, per acre, believing that it will pay them to do so, even at the high prices charged for it. As a manure for wheat, maize, barley, oats, timothy, and potatoes, we again assert, and we have had considerable experience in the use of both manures, that Peruvian guano will be found much more valuable than this improved, or any other superphosphate of lime; and even for turnips, if both are sown *broadcast*, we should prefer guano to superphosphate of lime.

SPRING WORK.

APRIL has at length arrived, ushering in the farmers' busy season. All that could be done in winter to facilitate spring work has, we trust, been accomplished. Everything is in readiness—plows, drags, roller, whiffletrees, cleveices, all are fixed for action; seed barley, oats, peas, corn, clover, timothy, potatoes, carrots, beets, &c., &c., are all obtained. The farmer has long concluded where he will sow this or that particular crop; he only waits for fine weather and a dry soil to commence operations. You need not wait, there is plenty to be done. We hope you have a large quantity of well prepared barn-yard manure, composts, &c. These can be drawn out on the soil and spread, ready to commence plowing. But, says a scientific objector, that is not right, a good deal of the most valuable part of the manure will fly off and be lost if spread and allowed to remain exposed for a week or two. This is certainly an objection, and were it not for the great convenience of drawing out manure previous to commencing plowing, we should not recommend it. There is doubtless some loss, but if the manure has been well prepared, and is not in an active state of fermentation, it is not so great as many suppose. To what crop is manure most profitably applied? We cannot satisfactorily

answer this question to our own mind. Will some of our experienced correspondents give us their views on this point? We would premise that it depends somewhat on the relative prices of the various crops.

Barley is usually sown after corn. It seldom does well on a recently inverted sod. It delights in a gravelly, light, warm soil; requires fine tilth and early sowing—the earlier the better. Two bushels seeds per acre is none too much. If the soil has been well worked the past year with corn and is free from weeds, we would seed it down with clover. Barley is often followed by good wheat crops, but strong fertile land is required, or such a course of cropping will soon impoverish it.

Oats should be sown as soon after the barley as possible. Two bushels per acre is the usual quantity sown in Western New York. A little more seed would be better on most soils. Oats do better on heavy soil than barley or corn. It is a general opinion here, that wheat does not do so well after oats as after barley. We are by no means satisfied that such is a fact. Let us have your experience on this point? If such is the case, it is probably owing to oats yielding a much larger crop than barley. Thus 60 to 80 bushels of oats per acre is a not uncommon crop, while 20 to 30 bushels of barley is a first rate average yield. We cannot see how the production of 100 bushels of oats should impoverish the soil any more than the production of 100 bushels of barley. Don't sow clover with oats if you can possibly avoid it. The oats grow so thick at the bottom that the clover seldom does well.

Peas.—On all wheat farms, well established theory commands us to sow several acres with peas. Except clover and turnips, no crop removes so little of the substance specially required for the production of wheat as peas. We told a friend this last year, and induced him to sow eight acres of peas—four acres Scotch grey, and four acres the common white pea. He had a first rate crop—twenty-five to thirty bushels per acre. They were harvested in fine order. Our friend was pleased with his “experiment,” and began to think that we did know a little about practical farming, even though we talked about phosphate of lime and ammonia, and edited a paper. The peas were threshed in February, and alas for our scientific credit, nearly every pea was destroyed by bugs. But we will not give up our theory yet. It will pay to sow peas if they are good for nothing but to plow under for manure for wheat. But they are. The bug damages them but little till November or December, and ere this they may be all fed out to hogs, producing at least as much pork as the same quantity of corn, and leaving a large quantity of manure that is *far superior* to that made from corn, while the peas have been produced at comparatively no injury to the soil. Some farmers who sowed peas last year as late as the last of May, obtained good crops; yet the earlier you sow them after getting in barley and oats, the better. They need to be sown early in order to be off the land in season for sowing wheat in the fall. Two bushels per acre sown broadcast is the common way. It is far better to *drill* them in rows twelve inches apart and hoe them. The increase of the crop will pay the extra expense, while the land is left as clean as if it had been summer fallowed.

Clover.—On wheat, clover seed is often sown on the snow and does very well. We like to sow about twelve pounds per acre on wheat, as soon as the land will do to roll. The rolling not only covers the seed, but is of great advantage to the wheat. On heavy wheat soil we prefer to harrow in the clover seed. The benefit to the wheat will astonish all who have never tried harrowing their wheat in the spring. You cannot sow too many acres with clover. We admit the direct profit is small, but the indirect gain is very considerable. At least one-fourth of the arable land should be seeded with clover each year.

Carrots.—The value of carrots as an auxiliary food for horses and milch cows is very great. No crop that we know of pays so well in this neighborhood. No farmer should be without them. For the best method of cultivation see Mr. E. S. HAYWARD'S valuable

communication page 116. We would add that good Peruvian guano, sown broadcast, at the rate of 300 lbs., per acre, will be found a valuable and economic manure for this crop. One great advantage in using guano for the carrot crop is the absence of weeds. An advantage which all who have grown carrots will readily appreciate.

Potatoes.—The cause of and remedy for the potato disease are yet to be discovered. We are at this moment as much in the dark respecting it as ever. Early planting on a well *under-drained*, light, sandy loam, using potatoes obtained from seedling, or as recent a variety as can be readily obtained, appear to be the best means of obtaining sound palatable potatoes.

COWS AND CALVES.

IN some districts it may be best economy to cut the throats of calves as soon as they are born, the milk being more valuable converted into cheese and butter than into veal. Such however is not the case when veal sells as it does here, at from five to eight cents per pound, unless fresh butter commands an unusually high price. The relative prices of the veal and butter determine the advantage of one or the other of the courses, and any intelligent farmer can easily calculate which is best economy for him.

In fattening calves for the butcher, they should be suckled regularly, have as much milk as they can take, after they are ten days old; they should be *tied up* in a dark, clean stable, and have a little fresh, clean straw given them every day. Much depends on their being kept clean and quiet. If they are kept clean they will not be troubled with lice. If they should be, give them a little sulphur, it will both purify the blood and rid them of the lice. In suckling them, let the strap remain round their necks and take them away from the cow as soon as they have had their fill, and *do not let them run about*. The rate of increase of a calf depends a good deal on the breed, and on the food of the mother; when a calf is more than six weeks old it seldom gets as much milk as it would take, unless the cow be very well kept. As a general thing, therefore, it is not profitable to keep fattening calves after they are six weeks old.

For rearing calves, of course, a different treatment is necessary. You must have an eye to *health and the development of muscle*, and not, as in the other case, to the accumulation of fat. They should be allowed more light and exercise. If fed by hand, after the first two or three weeks a little fresh skim milk and linseed tea might economically be substituted for a part of the fresh milk. A dairyman will be paid for a little extra feed and care to his cows in the spring. It often happens that cows are very costive a week or two preceding and following parturition. A feed of *mangel wurtzel*, or two pounds of oil-cake per day, will be found of great advantage in such a case. The increase of milk will pay for the oil-cake, while the increased health and strength of the cow will be pure gain and will tell well in the milk pail during summer.

We need scarcely say that it is very important that a cow be *milked clean* at all times, but especially immediately after calving. As soon as the cow has calved, we like to take all the milk out of the udder we can get, previous to letting the calf suck, and if the udder gets hard or is inflamed, as is often the case, *rub it well* with cold soft water or buttermilk, and take out the milk before the calf is to suck. The calf will then draw it clear and bunt it well, speedily effecting a cure. An eminent writer has said, "For my part I never see a *man* milking a cow without being impressed with the idea that he is usurping an office which does not befit him." Certainly there are few men that are fit to milk, or have anything at all to do with a cow. We have known cows that would not suffer a man to milk them without their legs were tied, yet they would be as quiet as a lamb while a woman with her soft hands, kind words, and pacifying manners, performed the operation. However unruly and ugly a cow may be, never beat or kick her; harsh treatment only makes the temper worse, while kindness will tame a tartar.

BRITISH AND AMERICAN AGRICULTURE.

(Continued from Page 82.)

B. You promised to give me any information I might desire on under-draining. From all I can learn on the subject, it appears to me there can be but little doubt that it will amply pay to under-drain, even though it does cost \$30 per acre. Mr. Jounstox, of Seneca county, says the increased yield on the drained land in two years pays the entire cost of the drains. I intend to under-drain a few acres, this spring and summer, on the clover lot that I shall summer fallow for wheat. It is good, strong, heavy soil, and though it brings but little at present, I think by under-draining it may be made to produce very heavy wheat crops. I intend cutting a ditch three feet deep through the low land in the lot adjoining it, and shall therefore have a good discharge for the water.

A. I should cut the ditch at least five feet deep. In all our attempts at draining we miss it in nothing so much as cutting shallow ditches. If we have a quantity of low land to drain, we cut a ditch two feet deep, and think forsooth, that that will be sufficient to drain perfectly all the land within a hundred rods of it. It will do no such thing. It may drain the land a little better than if there was no ditch at all, and the water was allowed to find the lowest land, and so pass off naturally; but as for its draining the land perfectly, there cannot be a greater mistake. What is wanted is not *surface*-draining, but under-draining; or, so to speak, sub-soil draining. We want the land dry three feet deep. A ditch two feet deep carries off a good deal of the surface water, especially if furrows from the adjoining lands are run into it; but at the same time the soil six or eight inches deep is as full of water as it will hold, and needs under-draining just as much as ever. Cut the ditch you speak of five feet deep, and you will then and not till then, have accomplished the first step in under-draining your farm. In England I do not recollect a single farm, except those resting on chalk, on which there was not ditches, or, as they call them, water courses, some five or six feet deep. These are cleansed at least once a year, and kept free from all impediments, for they have found by experience that it is impossible to drain land so long as there is stagnant water in the open ditches.

B. Enough; I will do as you say. So, having cut the ditch five feet deep, what shall I do next?

A. I should cut a main drain some four feet deep from the ditch right along the lowest part of the field to be drained. This main drain should be laid with large tile, say four inches in diameter. I should then cut drains from this main drain, up and down, or lengthwise of the natural slope of the land. In the field you mention, I would not have them further apart than forty feet. The deeper the drains, within certain limits, the further apart you may make them. It is important that the drain may be made with a gradual fall, and not have some places deeper than others, for though if the mouth of the drain be lower than the summit, the water will run off, yet it is found by experience that if in any part of the drain the tiles are full of water, the land in the immediate neighborhood is not drained at all. I had this fact pointed out to me several times while in England. If the drains are made in the spring or fall, there will be plenty of water in the drain at the time of throwing out the last inch or two of soil, so that nothing is easier than to make the drain so that the water will just run from you, and will not lie in any place.

B. What is the cost of digging these drains, say three feet deep? I have some thoughts of letting the job.

A. In England, the average price paid per rod for digging a drain, laying the tile, and filling in, all complete, is *eight cents per rod*. But as we pay our help just twice as much per day as do English farmers, it will probably cost you at least sixteen cents per rod, exclusive of tile.

B. Which kind of tile do you prefer, the round pipe or the horse-shoe tile?

A. In England there is much difference of opinion on this subject. The "new lights," as they are derisively called, think and prove that the $1\frac{1}{2}$ inch pipe is just as good as the horse-shoe tile, while they cost much less, and the drains from being narrowed are dug with much less labor. The old farmers, however, are slow coaches; they stick, with a pertinacity truly refreshing in these days of change, to the good old horse-shoe tiles, laid, not lengthwise of the fall, but across it. They maintain, in spite of theory and demonstration, that this is the best method of draining. They certainly, many of them, drain land well in this way; but I think the pipes altogether the best, considering their relative cost.

B. I see accounts in some of the papers of a new machine that cuts the drains and deposits the pipe at the proper depth without removing any of the soil.

A. Yes; I saw the machine at work when in England. It did the work well, and is certainly ingenious; but I doubt if it will come into general use. You understand the principle of the machine. A borer, to which is attached the drain pipes linked together, is drawn at the required depth through the soil, dragging the pipes after it in a string. Any one can see that when the string of pipes is long, great force is required to draw them through the soil. I was surprised that it worked so well as it did.

B. They have a stationary horse-power at one end of the field, and by this means two horses easily draw the apparatus slowly through the soil. I hope it will answer, any how. It would be a glorious thing for this country, where labor is so high, if some cheap means of under-draining could be discovered. I think if we had under-drained as much land here as they have in England, we should ere this have had a machine to dig our drains by horse-power. I see no real difficulties in the way.

A. Cheap labor is a great curse to a country. If wages had been as high in England as they are here, I have no doubt, with you, that they would have had many more labor-saving machines than they have. But a brighter day is dawning on the land of our forefathers; the price of labor is gradually rising while the prices of necessaries have been greatly reduced. Free trade has mortally wounded the landed aristocratic party. State Church, and the law of primogeniture, will in a few years be done away with; the great estates will be divided up, and a new order of things adopted founded on just principles.

AGRICULTURE IN CALIFORNIA.—The following extracts from a letter of one of our California correspondents, a Western New Yorker, will be read with interest. Great improvements in agriculture are rapidly progressing. There is a great demand for agricultural reading. Mr. SANFORD alone takes *one hundred* copies of the *Farmer*. We have large lists in several other places in California and Oregon. All our correspondents speak highly of the agricultural capabilities of the soil, and of the prospects of acquiring wealth by farming.

"Since I last addressed you the weather has been exceedingly fine. I notice our wild strawberry is in bloom, and the blossom buds of the peach have begun to unfold their petals. The verdant hill sides seem to smile with great beauty. Soon they will be bedecked with the loveliest of flowers.

"As soon as farmers can obtain good titles to their lands, you will hear of improvements in farming to an extent that will astonish the agriculturists of the east.

"Messrs CLARK and CURTIS, of Solano Co., have furnished me with a brief statement of their farming the past season—this being their commencement:

"They own 40,000 acres of land, and broke 1700 acres, requiring four yoke of oxen to the plow. They sowed 1000 acres to barley and oats, which crops yielded an average of 40 bushels to the acre; 100 acres were sown to wheat, yielding only 20 bushels to the acre; and seed being 12½ cts. per lb., 500 acres were not sown. They cut and pressed 1700 tons of (wild oats) hay. They have a stock of 500 horses and 1000 cattle, and are investing largely in swine. They commenced sowing wheat the 25th January. They sowed barley all the month of January, and oats all of February. The crops were all sowed from one to two months too late, and therefore only half the usual crop was harvested.

"Quite unlike the lands of old Wayne and Monroe, the first crop of cereals grown on high lands are not a fair test, and never equal to the second and third.

"They are selling their hay at \$50 to \$80 per ton—average, \$65; barley at 3½, oats at 4½, and wheat at 10 cts. per lb.; and at said prices, these crops will amount to \$185,620. The increase of stock, and value of vegetables grown, will swell the amount to \$200,000. They employ twenty men on the average, at \$60 per month including board. They purchased their farm, in December, 1851, for \$10,000, and could now sell it for \$20,000." J. L. SANFORD.—*San Francisco, Cal., Feb. 1.*

STABLE.—I think of building a stable in the following manner: I will have an addition on the side of the barn at one end of the barn floor, the floor of which I will have elevated about six feet above the old sill, the cattle to enter by an inclined plain under or at one side. My floor plank I will have come to within about a foot of the back sill, having a plank running the other way so fixed that it may be turned up, making it very easy to clean the stable and house the manure, thus saving it all without the expense of tanks. D. A. R.—*Attica, N. Y.*

SANDY SOILS.—I was pleased with your remarks "on the proper management of sandy soils." In fact the editorial matter of the *Genesee Farmer* has of late united theory with practice so ably and well advisedly with the best agricultural improvements, and scientific discoveries of this progressive age, that I have felt "Othello's occupation gone;" hence any contribution from my pen would only be a trespass on your columns. But apropos of sandy *versus* clay loam. For many years I had been in the habit of growing Indian corn and vegetables on a heavy clay loam; being tired of the universal cry, that a sandy loam was the soil for a garden. I once bought an acre of dry, sandy loam, drained by a quick descent to the south. As its nitrogen had been exhausted by cropping, I applied to it about thirty two-horse loads of strong stable manure, with nearly the same weight of leached ashes. Vegetation came forward earlier and progressed faster through the month of June and July, than on the clay loam; but in a drouth in August, vegetation came to a dead stand—the corn leaves curled, and the tops of the ruta bagas dried and withered; stirring the soil between the rows was of no other benefit than killing the weeds, no moisture by capillary attraction, no union of the oxygen of the air with the hydrogen in the manured soil took place to form water; the corn leaves did not expand in the dews of evening, the ears did not fill to the end of the cob; the crop was short. On the other hand I never had a greater yield from my old clay garden. Slow to advance in the early part of the season, vegetation seemed to luxuriate in the drouth of August; the corn leaves curled in the middle of the day, but in the dewy morn they were the open ready conductors of the rich, watery treasure to their roots; stirring the alluminous surface of the soil let in atmospheric influence to the forming of artificial moisture. The carrots and beets grew apace, the latter far outstripping in size the ruta bagas on the sandy lot.

The next year I tried the same experiment over, giving to the sandy lot twice as much stable manure to the square rod, as to the clay loam. But the final result was the same; the organic matter in the sandy loam seemed to be exhausted and gone, while the clay loam needed manure only to ameliorate its close mechanical structure.

But I have since got a new *wrinkle* in the management of sandy soils. In that desert waste of sand, exhausted of every element inorganic and combustible, two miles north of Providence, R. I., is a farm now an oasis in the desert. Some years ago a rich merchant of New Bedford, who owned it, employed an experienced farmer friend to bring up this farm to the highest point of fertility. He began by applying 250 bushels of leached ashes to the acre; this alone enabled him to get a crop of millet and clover. This he plowed into the soil to supply the indispensable nitrogen. He now built stables for forty milch cows, employed Irishmen to dig muck and peat from a swamp, which when dried was placed in the cow stalls for bedding. These cows were soiled, early in the season with green rye, hen clover, then Indian corn, sown in drills for fodder only. All the saturated peat and manure was saved intact under the sheds which flanked the stables. I never saw better crops on any soil, potatoes perhaps excepted. This is a case in point to confirm the truth of your theory in favor of dried peat and swamp muck composted with animal excreta, as the best amendment for loose sandy soils. The leached ashes were only necessary from the complete exhaustion of inorganic matter in the soil; the after process of manuring with peat, &c., will not fail to supply mineral as well as organic matter for all coming crops.

Turnip culture is undoubtedly suited to the climate of England; but on all aluminous soils in this country the crop is small, and always injured by insects; beets are a more certain crop on manured soil; blood turnip beets require little more tillage than turnips; they bear close planting, have no insect enemies, and grow to a large size. As a green crop to plow under for its nitrogen, I apprehend that no plant can compare with clover, if required as an intrinsic amendment to a hungry sandy loam.

Why is not guano an economical manure for sandy soils, if applied in small doses as the growing plants require it? The fault of a sandy soil is, its incapacity to hold organic matter until it is wanted by the growing crop; hence it strikes me that small and frequent applications, as the plants require, is the most economical mode of treating sandy soils. S. W.—*Waterloo, N. Y., March 1853.*

We once tested the above suggestion with potatoes on a black sandy soil. Three hundred pounds of Peruvian guano were sown on an acre at the time of planting, and on another acre by the side of it we sowed one hundred and fifty pounds at the time of planting, and one hundred and fifty pounds more just previous to the last hoeing. Both acres yielded good crops, (350 bushels per acre,) but there *was no difference* in favor of

either of the two modes of application. This is the only experiment on *sandy soils* we ever made in reference to this matter, and we confess it is anything but conclusive to our own mind. On heavy loams we know for certain that there is nothing gained by applying ammoniacal salts or guano in small doses at short intervals during the growing season. This has been tried repeatedly without any advantage. The economic application of guano and other ammoniacal compounds is occupying the attention of several eminent scientific men at present. We have many theories on the subject, but very little practical experience. Any of our readers who have experience, bearing on this point, will much advance the cause of agriculture by making them public.

WIRE FENCE.—As it is now the time of year when the farmers have the least to do, and the time that they read most, and form their plans for the work of the next season, perhaps it will be well to put something more before them on the subject of Wire Fencing.

What has been written on this subject, and the plans that have been submitted for its construction, have induced the building of many miles of wire fence; but the most of it has proved to be of little value to the farmer, and it is to be feared that they have about abandoned the idea of using it as common fencing material; therefore what I have to say as to the practicability of using wire to construct cheap, strong, and durable fences, is said with diffidence. Still, with your permission, I will tell my story, and give my plan; for, like a great many others in the world, I do think that my story will be instructive, and that my plan will be the best yet published for the construction of wire fences, for the farmer's use.

In the year 1850, by a combination of circumstances, it became necessary for me to build two hundred rods of fence in a short time, and as I had not made preparation for any other kind, I concluded to try wire fence. I obtained from New York a quantity of No. 10 annealed wire, and had posts made from hemlock scantling, three inches by four inches square, and six feet in length, which were nicely sharpened. Having these materials on the ground, I proceeded to draw a cord on the line where the fence was to be, which being well drawn, and straight, was to be my guide in making holes for the posts. Using an iron bar, I made holes about eighteen inches deep once in every rod throughout the whole line. The posts were then placed upright in these holes and driven with a sledge hammer until they stood just four feet out of the ground, appearing as straight and trim as a company of soldiers. Fine holes were then made through each of them with a "bit" three-eighths of an inch in diameter. These holes were six inches apart, and the upper one three inches from the top of the posts. As the fence was to confine only horses and cattle, I supposed five wires would be enough. The wires were then drawn into these holes. Whenever splicing was necessary, it was done by binding the ends to be connected like staples, hooking them together and then twisting the short legs around the long ones several times. This is the best way of splicing wires that I have tried, and if it is well done they will rarely give out at the connection.

At one end of the sections, the wires were passed through the post, and then brought around and tied strongly; at the opposite end, they were tightened by a little machine, consisting of two pieces of iron, which I will describe as well as I can without drawings. An iron roller is made four inches long, and three-fourths of an inch in diameter, having a hole large enough to admit the wire, punched through it an inch and a half from one end, and the other end squared an inch in length. To this square end is fitted a washer four inches long, an eighth of an inch thick, and an inch and a half wide, with two small nail holes punched through one end—one of them near the end, and the other two inches from it. The square mortice to receive the roller is made at the opposite end. These machines will cost one shilling each, and will last indefinitely. The manner in which the wires were stretched is as follows:—A wire passed through the post and into the roller—the washer being on—a wrench is applied, and the roller turned round until the wire is well tightened, when the washer is nailed to the post, by nails passing through the small holes.

When each wire was thus stretched and confined, I had a fence that appeared very neat and strong. Eighty rods of it enclosed a lane along which the dairy cows passed twice each day—so the fence was used. During the first year I found that this fence was a good barrier against most all my horses and cows, &c.,—which means bulls and oxen—but that some of them would not be confined by it. Some cows would get down on their knees and crawl under it, and others would put their heads between the wires, and by pressing heavily on the wire next under their necks

would break it, and so get through. It not being perfectly satisfactory, I the next spring had it all taken down, and rebuilt in a manner which made it a perfect fence against all cattle, horses, calves and sheep. And now, from this last experiment, I will give a plan for a cheap and durable fence, which in most localities, will be the cheapest that can be built equally serviceable.

The posts should be six and a half feet long, three inches by four inches square, and well sharpened, and of cedar wood; they should stand in the ground two and a half feet, and be ten feet apart. The sections should be twenty rods long, and the posts at the ends of them should be four inches square, and well braced by scantlings bearing against their top ends, and the bottoms of the posts next to them. The wires should be eight in number, of No. 10 annealed, and be drawn in and stretched in the manner before described. The first wire should be three inches from the tops of the posts, and all six inches apart. The last passed summer, thirty rods of fence constructed after this plan, divided a field of grain from a pasture in which a large dairy stock ranged daily, and it fulfilled its office perfectly.

With the posts and rollers and wire prepared, two men can easily build fifty rods of it in a day, and it can be taken down in one half the time. A person of ordinary ingenuity will soon learn to handle the wires, so as to facilitate the work much. The tools required after the posts are made, are an iron bar, a sledge hammer, a strong pair of pincers, a bit-stock and bit, a line, and a wrench, which is best made of a piece of strong iron about a foot in length.

Every spring the fence should be looked to, and the wires tightened, for the frosts of winter will loosen them. A little attention given promptly when it is needed, keeps such a fence in order cheaply. Among the good qualities of such a fence are these:—The space it occupies is the least that a fence can occupy; it harbors no weeds, mice, or snakes; it does not cause snow banks; the wind never breaks it down; it confines the most unruly animals; it can be put down or taken up easier than any other, and whenever by great force it is broken it can be mended in a few moments. There are many places in snowy countries, where this fence would be serviceable indeed; as, along the roadsides, to prevent the backing of snow.

Hoping that many will be induced to *try my plan*, I will leave the subject. W. R. MANLEY.—
Buffalo, N. Y.

CULTURE OF CARROTS.—This important part of agriculture has been very much neglected by farmers generally. Very few know the value of a good crop of carrots till they have raised and fed them to their stock during winter, or know little of the profits of an acre till they have had the opportunity of turning a crop into money. There is no crop the farmer can raise that pays so well, or yields so much good feed for stock. The tops may all be fed to cattle at harvesting, and the roots stored in the cellar for winter use. For fat cattle they are the very best roots that can be fed. For milk cows they are almost invaluable. They keep the cows in good condition, and the milk is rich and the butter is of good color and flavor, entirely free from that disagreeable taste caused by feeding ruta bagas, turnips, &c. Horses are very fond of them and will work well when fed on carrots and keep in good flesh without any grain. Some writers say they are equal to oats for horses; I put them at half the value and make good profit raising them at that. Store hogs winter first rate on them and water alone, and will show good keeping in the spring. I feed them whole to horses and hogs, and cut them for cattle. Fat hogs will eat them when they have plenty of corn, and I think them beneficial, for the reason that hogs shut up in a close pen require something green to satisfy nature. A yellow chestnut loam well manured, say 20 to 40 loads of rotten yard manure per acre, makes a first rate soil for carrots, but they will grow on any deep rich soil, and produce well. The soil should be thoroughly pulverized with the cultivator and harrow on the top before plowing after the manure is spread. Then plow deep and follow with rakes and rake the top of the furrow and the manure, if there is any left in sight, to the bottom of the furrow, and continue in this way till the piece is prepared, which leaves the ground level and clean on the surface. Four hands will follow and rake as fast as a team will plow. The subsoil plow I think could be used to great advantage. I never have tried it, but intend doing so the coming season. The ground should be sown while moist, soon after it is fitted, in rows 12 or 14 inches apart and half an inch deep. The soil should be pressed on the seed by treading or rolling, to ensure its vegetation. If sown by hand the usual quantity of seed is four pounds per acre; if with a machine, two pounds is sufficient. The seed should be soaked in warm water forty-eight hours or more before sowing, then mix with plaster till the seed will separate. Sow as early in May as the season will allow. The ground may

be marked out with a marker made for the purpose and the seed covered with a rake. If the weather is favorable they will be up and ready for the first hoeing in about three weeks. The hoe should then be passed lightly through, between the rows to kill the weeds and help the growth of the carrots. In ten days hoe again, weed and thin, leaving one plant in a place; in two weeks hoe deep, weed and thin, leaving the plants four or five inches apart in the rows, and the work will be completed for the season. If weeds grow after the last hoeing, weed them out, for weeds and carrots cannot grow on the same ground at a good advantage. A good crop is eight or nine hundred bushels per acre; and is worth at least 1s. 6d. per bushel amounting to one hundred and fifty dollars per acre. The cost of cultivating, manure, seed, storing, and interest on land, will not vary much from fifty dollars; leaving for the nett profit the sum of one hundred dollars from one acre of land. What farmer will say that this is not good profit. Then who will not raise an acre or more. The greatest difficulty in raising a crop is bad seed, bad weather after sowing, and neglecting to thin them in the right time. The seedsman is often blamed, and unjustly too for selling bad seed, when the fact is the seed is good but badly managed by the cultivator of the crop. If the weather is very dry and dry seed sown, or if cold and wet it will be a long time in vegetating, and nine times in ten the weeds will have much the start, so you may look very close to find the poor weakly plants and perhaps only find a few scattering ones, and without further thought or investigation, the land is plowed again, and the seedsman must bear all the blame for bad weather, and bad management. I usually raise my own seed, but sometimes run out, and have bought from the Genesee Seed Store, and never had bad seed, and always had a fair crop. E. N. HAYWARD, Rochester.

PLOWING IN GREEN CROPS.—I am becoming every day more satisfied that the science of farming must look "upwards;" that the air we breathe is the great fountain that sustains animal as well as vegetable life; and that the great primitive source of all the richness in our soil is from the air. Nothing is destroyed. No sooner does the animal and vegetable die, than it commences its round of change until it returns to its original elements, and is prepared to be remodeled into new animals and vegetables. Let man do his worst, and he cannot destroy one jot or tittle of substance; neither can he impoverish the earth so that skillful agriculture cannot restore. My neighbor, an intelligent man, has collected all the barn-yard manure he could buy, and has mingled with it caustic lime, and has made an immense heap which is now a perfect crater almost on fire. Think you if he could see the wheat, corn, and grass, that is continually ascending from that heap, he would continue the fire? Far from it. He can smell at a great distance, the ammonia and enriching gases, arising of course. Now, if, as I have said, we could see the enriching gases arise, and knew their value, the world would have been convinced long ago; for "to see is to believe."

Well, I hear you say, what a destruction. Not so; not a particle is destroyed; it floats off in the air over your farm, and any farm, ready to be brought into the harness by the skillful farmer, who has his clover and other ammonia-absorbing plants in his broad fields ready to catch and devour it. I hold that air above, is and has been for all time charged with all the organic properties of plants, and that it is a fountain that will never fail, ever ready to respond to the demands of science. Yet, we must of course properly cultivate the soil. I believe fully in TRILL'S theory. If I had the means of retaining all the ammonia and invisible nourishment for plants that is foolishly expelled from my neighbor's farm, I am satisfied that I should have the lion's share. C. W.—Lake Grove.

VIRGINIA LANDS.—I have received, probably, in the last few months, one thousand letters, mostly from your State, making inquiries about lands in Eastern Virginia, but mostly making their requirements such that an answer would be useless. A farm of 150 or 200 acres near a village, well apportioned into mowing, pasturing, and woodlands, is not easily found for \$4 or \$5 per acre, for the following reasons: first, those villages are very rare; second, not more than one farmer in a hundred makes any point of cutting hay, and as little for pasturage. Cattle get some coarse food two or three months; sheep none, yet do exceedingly well. Good ewes will probably net \$2.50 to \$3.50 per year, by wool and increase.

Any one that expects to see lands looking anything like the lands in Western New York, will surely be disappointed and had better stay at home or go West. As to crops, our very poorest, worn-out fields, with 200 lbs. of guano, costing say 2½ cents per lb., will average 12 bushels, at least, of wheat per acre and generally a stand of clover, or 15 to 25 bushels of corn. Very little attention

is paid to fruits, but they grow well enough with a little attention. Wild fruits are in profusion.

Lands near public works, are rising in value at least 10 per cent. per annum, yet many good locations can be bought on railroads, or near them, 10 to 50 miles from good markets, for \$4 to \$10 per acre. The places advertised some months since in the *Genesee Farmer* are sold, with the exception of one of 390 acres. The present cash price is \$2000, until the 1st March; afterwards, not in the market for anything like that sum. Taxes, State and County, 20 cts. on each \$100 valuation.

As to the health of the country, from tide water up there is no healthier region; on the rivers and at tide water, it is rather billious a few months in the year.

The prices of produce at present are, wheat, white, \$1.15; red, 80 c. a \$1.05; corn, 65 a 70 c.; oats, \$1 a \$1.50 per cwt. in sheaf; hay, \$1 a \$1.50 per cwt.; butter, 20 a 31 c.; cheese, 10 a 14 c.; pork, \$8 per 100 lbs.; eggs, chickens, turkeys, &c., out of sight. S. CLARKE, JR.—*Proctor's Creek, Va.*

THE VALUE OF A GARDEN.—Though not a farmer by profession, yet I have taken your paper since 1845, and have read it with much interest, and, I trust, profit. I have but three-fourths of an acre. My house, barn, fruit trees, and ornamental shrubbery, occupy one-fourth of an acre, leaving me one-half of an acre for a garden. My fruit trees are just coming into bearing condition, and last fall I gathered, as their first fruits, seven bushels of excellent winter apples, besides an encouraging supply of other luxuries. My garden, previous to my occupying it, four years since, was impoverished. But it has gradually become more fertile, and last season yielded me \$100 worth of vegetables. From 20 rows I had 60 bu. of potatoes; from 8 rows I had 35 bu. of carrots; and cabbages, beets, turnips, ruta bagas, onions, corn, beans, tomatoes, and all the variety of a kitchen garden about in proportion. But for whatever of taste displayed, or of comfort enjoyed in my little home, I am indebted much to the *Genesee Farmer*. From this I have learned to manage my hot-bed, and cultivate my yard and garden, and, I think, with some degree of success. The exercise thus obtained has given me health and cheerfulness, and I have been enabled to keep up with the spirit of the times and set an example to the people with which I am surrounded and to whom I minister. E. O. WARD.—*Dundaff, Pa.*

SHANGHAI FOWLS.—I bought last summer a pair of Shanghai chickens for \$5; my neighbors called me a fool, but I bided my time. In October my pullet began to lay very large eggs, and laid all winter. I kept no account of them until the 15th day of January; the egg laid on that day I marked No. 1, and every egg laid afterwards I marked with its number, until September; I then let the hen set on some of her own eggs. Up to that time she had laid, from January 15th, 113 eggs. Had I kept the account from her first laying, in October, I have no doubt the round figure would have been 150. I have realized \$18 from her, and have stock that I would not take \$25 for. Of course I set her eggs under other hens. She weighed, when she first began to lay, 5½ lbs., and the stag (or rooster) 7¼ lbs. JNO. HOWE.—*Darien, N. Y.*

ILLINOIS FARMING.—The following extracts from a valuable communication on the "future prospects of Illinois," will be read with interest:

"All kinds of farm produce now sell well throughout the State. Wood for fuel is tolerably plenty by hauling eight or ten miles. Horses, cattle, and mules are high; everything is in a prosperous condition. Good water is everywhere easily obtained; we seldom have to dig more than sixteen feet. Cattle do well on the prairies from the middle of April to the end of October. All kinds of grass seeds do well on our prairie soil. Osage Orange is coming into general use; it does well and makes a good hedge in four or five years. Black locust grows very fast on our upland prairies, but does not answer on the low land. Walnut grows thrifty and soon makes good timber. Apple and other fruit trees grow with astonishing rapidity, bearing at from four to seven years of age. Our soil is very rich; it is very muddy in wet weather, but dries rapidly with the sun and wind. The past winter has been very disagreeable and wet. Our oldest inhabitants never remember so rainy and muddy a winter. Our prospects for large crops are good, though the wheat has been somewhat injured. Fruit is not hurt; we shall have fine crops. We have very good orchards in this country, as also some very fine hogs, horses, cattle, mules, and sheep. The land is good for sheep; wolves seldom trouble us, but dogs are a terrible scourge. D. J. CONNELLY.—*Paris, Edgar County, Ill.*

HOOSIER FARMING.—I think we have some of the finest exemplifications of the "skinning system" that is practiced in modern times. Many of the original settlers (being mostly from North Carolina) having cropped with corn after corn, till the yield was but little greater than the seed, and being unable to live on their exhausted farms any longer, were compelled to sell out at small profits and move west, there to run another round of "skinning" and exhausting the soil. But a great change is now taking place; the "skinning system" is gradually giving way to the light of science. We have a very valuable agricultural journal—the *Indiana Farmer*—published at Richmond, and an agricultural society in this county in a very healthy condition. We have a number of those who take and read the papers; who use the subsoil plow in connection with barn yard manure, draining, &c., producing from twenty-five thirty-five bushels of wheat per acre, and from seventy-five to one hundred bushels of corn. Plowing from eight to ten inches deep is now very common, which seldom fails of producing double the amount raised by the three-inch style of farming, while hundreds of others are watching these results and, like King Agrippa, are "almost persuaded" to be (book) farmers. Our State is a great corn-growing State. We have upwards of five million acres of land improved in farms. The annual production of Indian corn is about fifty-two million bushels, which I think is taxing the ground rather too heavy.

G. W. GILBERT informs us, on page 52 of the present volume of the *Farmer*, of some extra hogs, ten in number, all raised by *mechanics*, but fails to give the most important part, *how they were raised*, and says: "Now farmers beat this!" I would inform him that I raised and sold, the past season, twenty-seven hogs; their aggregate weight was 7636 lbs. net. They were slaughtered at the age of about *fifteen months*; they had no extra attention, running on pasture through the summer season, equal parts of timothy and clover, with a small quantity of corn each day.

I think it takes about five pounds of corn to produce one of pork, and I think it would be good economy to give a hog all it would eat. I think we have not paid sufficient attention to raising hogs. JAMES H. ARNETT.—*Economy, Wayne Co., Ind.*

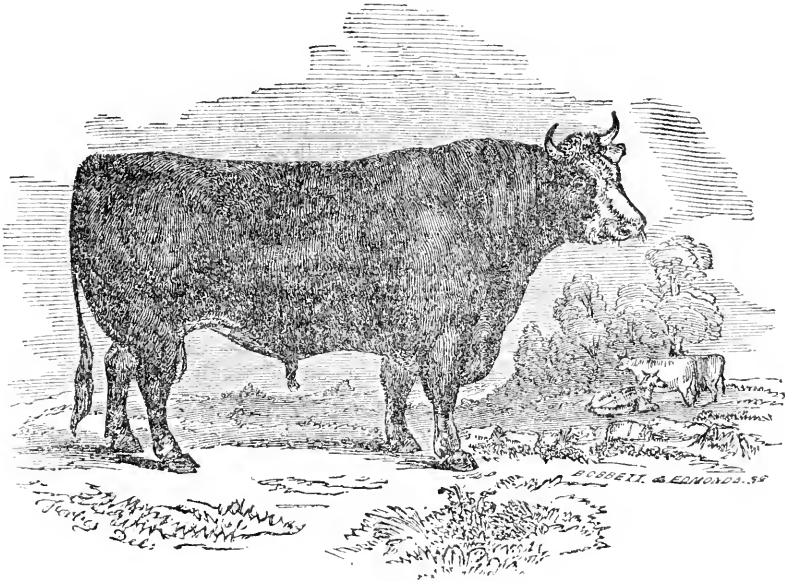
FATTING CALVES.—POTATO CULTURE.—If I beat my neighbors in any branch of agriculture, perhaps it is in fattening calves. I do not allow them to run about and play at all. Perhaps a very little exercise would be of benefit if they did not generally get so crazy for a frolic, and neglect their food to have a spree. If allowed to run about much, they fat very slow and the meat is tough. I have a manure cellar with room enough for my cow and calf pens; and being nearly dark, and pretty uniform in temperature, it is a first rate place to fat calves. If I let them suck at seven in the morning, I want to do it as early as six at night, and then they will be hungriest at night. I make the pen so narrow they can but just turn around in it, and have the door or barrel or whatever I fasten with, crowded in so far that the calves will not play, and they will fat much faster than any other animal I know of. I put in a little clean straw every day.

My most profitable crop for a few years has been potatoes. I like to break up some dry, gravelly ground in September or before, and at a dry time harrow, and plow and harrow again before winter, and as early as I can in the spring, plow and harrow again, and run furrows three inches deep and four feet apart, and as soon as I can plant and not have them freeze, drop pink eyes two feet apart in the furrow and cover deep, and when they begin to come up, harrow over the whole with a large harrow, straddling the row with the team, and shortening the teeth if it tears up many. We don't usually tear up more than ten or fifteen to an acre. When I hoe I use the cultivator, and do not make the hills high, or they dry up badly. N. N.—*Hannibal.*

NEEDLE IN THE DIAPHRAGM OF A COW.—My brother killed a cow last fall and found a *darning needle* in the diaphragm, near the heart. It was bent and discolored, and from marks on the stomach and elsewhere, it seemed to have made journeys through her internal regions with a "perfect looseness." The cow's health had been vacillating during two or three previous seasons; but whether her being "armed and equipped," *not* "as the law directs," had any sensible influence upon her physical condition, deponent knoweth not. ABEL G. EMERY.—*Lincoln, Morrow Co., Ohio.*

HEREFORD CATTLE.

THE Herefords, as grazers, are unequalled. They are larger than the Devon, mature quite as early, and their beef is finely grained and mottled. For working oxen, there is none better. They are more powerful than the Devons, though perhaps not quite so active. They are better milkers than the improved Short-horn, though, we think, not quite equal to the Devon—certainly not equal, in this respect, to the Ayrshire. We are not aware that there has ever been any conclusive or satisfactory practical test of the relative feeding qualities of the Durham and Hereford. It is, however, the general opinion that the Durham will lay on fat more rapidly than the Hereford or any other breed.



HEREFORD BULL TROMP.

THE PROPERTY OF ALLEN AYRAULT, GENESEO, N. Y., WINNER OF THE FIRST PRIZE, \$25,
AT THE NEW YORK STATE FAIR, ROCHESTER, N. Y.

MARSHALL gives the following description: "The countenance pleasant, cheerful, open; the forehead broad; eye full and lively; horns bright, taper, and spreading; head small; chap lean; neck long and tapering; chest deep; bosom broad, and projecting forward; shoulder-bone thin, flat, no way protuberant in bone but full and mellow in flesh; chest full; loin broad; hips standing wide, and level with the chine; quarters long, and wide at the neck; rump even with the level of the back, and not drooping, nor standing high and sharp above the quarters; tail slender, and neatly haired; barrel round and roomy; the carcass throughout deep and well spread; ribs broad, standing flat and close on the outer surface, forming a smooth, even barrel, the hindmost large and full of length; round-bone small, snug, and not prominent; thigh clean, and regularly tapering; legs upright and short; bone below the knee and hock small; feet of middle size; flank large; flesh everywhere mellow, soft, and yielding pleasantly to the touch, especially on the chine, the shoulder, and the ribs; hide mellow, supple, of a middle thickness, and loose on the neck and huckle; coat neatly haired, bright and silky; color a middle red, with a bald face characteristic of the true Herefordshire breed."

Horticultural Department.

CONDUCTED BY P. BARRY.

HEADING IN TREES AT THE TIME OF TRANSPLANTING.

PERHAPS there is nothing connected with transplanting trees more important to the success of the operation than pruning the tops, or, as it is usually termed, "heading them in." We are very sure, that notwithstanding all that has been written upon the subject within a few years, thousands of trees annually die outright from the want of a judicious pruning when transplanted, and thousands of others grow so feebly that they too might as well have died. Some people are ignorant of the necessity of such an operation, others are too busy when their trees are planted, and they have no time to do it. Others again, are aware that it has been recommended, but they are loth to spoil the trees by depriving them of their branches, or they are not much accustomed to handle the pruning knife, and are afraid if they should attempt to prune they would do more harm than good. We have heard all these excuses made, and many more, time and again.

If a tree could be removed from its place in the nursery to its permanent situation with every root and fibre entire and uninjured either by digging, packing, carriage or exposure, there would be comparatively little necessity for heading in, because the natural balance that existed between the roots and branches would not be destroyed; but how seldom is it that such trees are found in this state! Rarely ever, as we know by ample experience. The transplanting season is *always* a hurried one with the nurseryman; his customers are pressing him for the trees, the season is bounding forward, the buds are swelling rapidly, or winter is threatening an embargo, and the work must be done. Raw, untrained laborers, who know just as much about roots or their importance as they do about Euclid, are turned in to dig and pull; and dig and pull they do with a vengeance. The roots are cut and bruised and mangled until they look as though they had been taken out with a grub hoe. This is not always the case, we admit; there are careful nurserymen who take up their trees as though they knew what trees were, and intended they should live and prosper, but even at best there are injuries inflicted that break up the nice harmony that existed between the different parts of the tree, and for this a remedy must be applied.

Now the theory on which the practice of heading in rests, is that the roots are the principal nourishers or feeding organs of the tree, and must be adequate to provide a sufficient supply for the buds or leaves, which are the consumers. If the roots be so injured as to be unable to fulfil their ordinary functions while the demand of buds and leaves continues the same, the tree will not only be unable to grow, but will in a very short time become exhausted and *die*. Hence the necessity of reducing the number of buds or leaves, and thus cutting off a portion of the demand upon the roots. By this heading in we economise the nutriment stored up within the tree, and it is then sufficient to sustain the process of vegetation until the tree has formed new roots to collect nourishment and is once more at home. It is sometimes objected to heading in at the time of transplanting, because the tree is not in a condition to throw up vigorous shoots that will make a new and handsome head; and it is recommended to defer the heading in until the second year, when the tree is well rooted and will have sufficient force to make vigorous and thrifty shoots. This would do very well we admit, and we prefer it when the tree has not a large head and the roots are all safe and sound; but as general thing, such a system would be like "locking the stable door after the horse was stolen." The heading in must always be proportioned to the condition of the roots

and the amount of top. If the roots are much dried and injured, it may be necessary to cut in every branch to within two or three buds of the base. If the tree be young and all perfect, a slight pruning only is necessary. Peach trees particularly require close heading always. In fact it is well to cut in every shoot to a bud or two at the base.

In the March number of *Hovey's Magazine*, we find this subject touched upon in a report of some discussions by the members of the Massachusetts Hort. Society :

"THE PRESIDENT. Some remarks have been called for in regard to heading in pear trees. So far as his experience was concerned, he thought it best to head in. Trees newly set should be headed in, say one-half to two-thirds the previous year's growth. Trees set out in the streets of Paris, he was told, were headed in to nearly bare poles."

"Mr. BRECK said he had remarked that trees headed in had done better than those not pruned. He had noticed this in street trees, where they had been pruned to bear poles and had done well. Pear trees might do better in light soil, such as Mr. FRENCH had alluded to at Plymouth, than in a heavier one; but he thought some persons might make a mistake, if they should plant their trees in any sandy soil without knowing of what it is composed. It would not answer in all light soils."

"Mr. C. M. HOVEY objected to the general system of heading in trees indiscriminately, as was a common practice, without regard to the state of the roots and other conditions of the tree, and should take occasion to enlarge upon the subject, if gentlemen contended that the practice should apply to all transplanted trees.

"In the discussions now before the members, he presumed we were assuming that we were talking to practical men, or, at least, to gentlemen who had some information upon the subject; and that we also assumed that the system he or any one else advocated, was that which should be pursued with a healthy, properly grown tree. This being understood, he was entirely opposed to heading in newly transplanted trees. He had not done so for many years, and, after careful observation, he had become convinced that trees removed and not headed in the *same year*, had done far better than those that were.

"His practice was to transplant trees in the fall, if possible; but if not then, in spring, rather than lose a year. Such trees were not shortened in, unless merely some straggling branch, to shape the tree a little. The following year, however, they were cut in rather short. This gave the young shoots a vigorous start, and the trees formed fine heads, much better than those pruned in the first year.

"If, however, trees had been imported, or out of the ground many weeks, these, of course, he would head in to keep up the equilibrium between the roots and branches; the former evidently being more or less injured by drouth, exposure, decay, or other causes, not to mention the loss of many of them by removal, which would materially change their natural condition. He therefore, as a *general rule*, always advised shortening in *one-third* or *one-half* of the previous year's wood, for the reason, as a *general thing*, trees were badly cut or mangled in removal and transportation. He condemned the plan of heading in forest trees to bare poles, as generally practised."

"Mr. CABOT said he agreed with Mr. HOVEY, that young trees taken from the nursery did not perhaps require cutting in so severely as older ones. In the removal of large trees, he thought it was necessary to shorten in, to keep up the equilibrium between the branches and the roots. He took up two very large pear trees last year, and did not shorten them in; but he found they did poorly,—one died, the other did pretty well. His experience was that large trees required considerable heading in."

"Mr. WALKER. Some remarks had been made relative to heading in forest trees; he should confine his to the pear. He had removed many trees; he had taken them up in April or May and cut them in,—and had taken up others and not headed them in; those not pruned were much the best trees at the end of the second year. His opinion was that a good tree *should not* be pruned the *first year*. It then had time to recover itself; and properly headed in the second spring, it made vigorous branches and a good top. Imported trees he thought it would be best to prune when set out. He quite agreed with Mr. HOVEY; his whole experience quite concurred with his."

NORTH WESTERN FRUIT GROWER'S ASSOCIATION.

In the February number, page 92, we gave some account of the proceedings of this association. We now proceed to notice the discussion on qualities of fruits :

DISCUSSION ON APPLES.—The *Autumn Strawberry* was recommended for further trial in the west.

"CYRUS BRYANT has fruited it several years; a fair grower, and abundant bearer, alternate years—ripe about first of September; juicy, with a very slight astringency.

Mr. PHENIX has fruited it several years, esteems it highly—very productive—would plant it in a collection of six varieties in his locality.

Mr. McWHORTER—Its flavor is exceedingly delicate, of tender texture. Esteems it an excellent fruit. Passed as recommended by Committee."

With us the *Autumn Strawberry* is a crisp, juicy, high flavored fruit, uniformly fine. We think it bids fair to be worthy of very general culture. We are glad to hear such favorable reports of it from the west.

Sweet Nonsuch, (local name.)—From the general tenor of remarks made by several cultivators, this seems to be a hardy, vigorous, productive, sweet baking apple.

Monarch.—We received this apple several years ago from Mr. J. A. LAZELL, of Columbus, Ohio, and it has borne regular abundant crops of large, very beautiful and and "good" fruit. The following remarks were made concerning it:

"Dr. PENNINGTON has fruited it several years; tree a rapid grower, good, though not a prolific bearer, has been, with him, profitable—knows no early apple of its season superior—would recommend to bud or stock-graft, tender root-grafted.

Mr. BELLANGEE received it from Ohio as *Monarch Sweet*. It is of an agreeable sub-acid flavor, has ripened last of August, in use through September. A beautiful fruit, sells readily at good prices in market.

Mr. AVERY considers it far superior to *Maiden's Blush*.

Mr. S. M. COE has proved it an early bearer."

Fall Pippin.—We have been anxious to know how this famous apple would adapt itself to the soil and climate of the west. The following remarks give unfavorable indications:

"PRESIDENT had it bear plentifully; soil with considerable clay.

Mr. FINLEY's experience ditto; soil alluvial.

CYRUS BRYANT—Trees planted in 1837, have never borne a dozen apples in a season; soil, clay loam; hopes *Hawley* may supersede it.

Mr. McWHORTER has seen a few trees bearing well.

Mr. WILLIAMS—Where stock budded or grafted, has seen it bear well, has several trees root-grafted, 12 years old, have never borne but little. Believes the different modes of propagation a subject of great importance to fruit cultivators in the West.

Mr. LOOMIS—It bears profusely in Northern Indiana, generally root-grafted; soil, oak opening, Mr. AVERY has five trees planted in 1840; had first good crop this year, say five bushels in all; soil good prairie. Would value one tree of *Rambo* or *Rawles' Janet* worth seven of *Fall Pippin Belmont* also superior, and *Fall Wine* is generally preferred to it."

The difference between the success of Mr. LOOMIS, in Indiana, and that of the other gentleman in Illinois, is very striking and worth further inquiry.

Red Gilliflower.—Recommended for further trial in the west.

Yellow Bellflower.—Recommended for general cultivation, by a vote of 12 to 11, (other members not voting,) "to be budded or stock-grafted," instead of root-grafted; the general impression being that it does not succeed well root-grafted.

Dominie.—All spoke well of its quality and productiveness, and it was passed as "very good for general cultivation."

Rawles' Janet.—Generally considered productive, and varying in quality from good to very good according to locality, exposure, &c. We apprehend that like our *Spy*, it needs a full exposure to the sun to bring out its excellence. Nothing said of the best mode of propagating it.

Winesap.—Only alluded to by two speakers, and they pronounce it productive and good.

Willow Twig.—Passed without discussion. This is one of the best long keepers of the west.

Fallwater.—Known also in the west as *Mountain Pippin*, *Tulpehocken* and *Pound* apple. Highly recommended by three speakers, and passed as good for general cultivation.

White Winter Pearmain.—Unanimously pronounced valuable and productive.—Passed as best and recommended for general cultivation.

Belmont.—This is a beautiful and excellent fruit, but quite variable. We find it succeeds well in Western New York. It is particularly so in Northern Ohio, and in certain soils and localities in Illinois. The fruit is somewhat liable to drop prematurely. Mr. ELLIOT advises to cultivate it on dry, elevated soils, and to gather early. Recommended for limited cultivation.

Vandervere.—Pronounced variable. Mr. McWHORTER has seen it bear full crops on a clay soil,—“hickory barrens,” similar to the “oak openings” of Michigan. Mr. LOOMIS of Northern Indiana, has had it do well in all respects on a clay loam. It needs good culture. Recommended for limited culture.

Talman Sweet.—“Recommended for general cultivation, for baking and stock.”

Detroit Red.—Passed as not sufficiently known, being confounded with *Black Pippin* and *Black* apple.

R. I. Greening.—From the testimony of eight or nine speakers the cultivation of this famous fruit has not been successful so far in the west, and more especially when root-grafted. One speaker (Mr. BRAYTON,) goes so far as to doubt whether it would ever bear when so worked. This is very remarkable. The finest trees of this sort, and indeed the best orchards in Western New York—and the world could not produce more healthy or productive trees,—are all root-grafted; but we intend to say something on this particular point soon. “Passed as not sufficiently known to be recommended.” This strikes us as a strange decision after several members having expressed decided opinions based upon the experience of 15 or 16 years cultivation.

Roxbury Russet.—The experience of Illinois cultivators is unfavorable; in some cases not keeping well, in others the fruit spongy. Blossom buds injured, and frequently injured in the winter near the ground surface. Considered generally as being much better budded than root-grafted. Mr. LOOMIS, of Indiana, said with him “It had no competition in June; thinks more money can be made from it than from any other variety. His trees are root-grafted. Has never noticed any difference in the productiveness of root-grafted and stock worked trees.”

Jonathan.—Recommended for further trial. Highly spoken of by Mr. BRYANT of Illinois, and Mr. LOOMIS of Indiana.

Ladies Sweeting.—Not sufficiently known.

Hubbardson Nonsuch.—For further trial.

Baldwin.—Generally a failure in Illinois. Mr. LOOMIS said it bore well in Indiana.

Swaar.—Recommended unanimously for general cultivation, “when worked standard high on thrifty seedling stocks.”

Red Astrachan and *Hawthornden.*—Favorably mentioned.

Pryor Red.—Spoken of as a tardy and shy bearer.

The association adopted a resolution to petition the legislature of Illinois to make fruit stealing larceny. Also, appropriate resolutions on the death of A. J. DOWNSING, and another recommending the *Western Horticultural Review* as worthy the patronage and cordial support of every horticulturist in the West, being particularly adapted to that soil and climate. We are glad to see the *Review* thus recommended, first, because it deserves it, and second because the information it imparts is much needed. It strikes us that the western cultivator stands peculiarly in want of minute and varied information on account of the innumerable difficulties of the climate.

FRUITS IN MICHIGAN.—I send you a description of the *Gravenstein* apple grown with us from trees brought from your garden and other gardens in Western New York. The tree is a great grower, forms a large spreading top, with extremely long-jointed boughs. Leaves very large, and much serrated. The bark of the young wood is dark red, and has an uncommon bright and shining appearance. Fruit very large, oblong,

and well shaped, often ranging from twelve ounces to a pound, striped with dull red over a yellowish green ground. The skin is uneven, very much resembling the *Twenty Ounce* red streak. Calyx closed, in an even round basin of medium depth; stem long, and rather slender for so large a fruit. Flesh coarse, and no better than the *Twenty Ounce* in quality, of a greenish color. Ripens in October, and continues but a short time. Can this be the *Gravenstein* apple? There are several trees in different gardens among us, and they are all uniformly the same tree and same fruit. [We think so, but it is greatly superior to the *Twenty Ounce* in flavor.—Ed.]

My *Northern Spys* have fruited the past season. The fruit is very fair, and nearly the size of the *Full Pippin*. I think our warm and deep soils in this section will be favorable for that apple. I think we raise the best *Newtown Pippins* in the world, at least, Long Island cannot come up to us in size or flavor. *Spitzenbergs* and *Swaurs* are also very fine; *Baldwins* and *Greenings* are only middling. *Russets* are not worth cultivating; they are large in size, but coarse, dry, flavorless things, more than one half of them rot before spring. If the Pomological Congressmen had stricken out the *Dearborn's Seedling* from the list of pears, we would have been entirely ruined in this quarter for a good August pear after the *Bloodgood*, but thanks to *Seedling's* friends, I should mourn to see it turned out of the door. The *Flemish Beauty*, *Gansel's Bergamot*, *Duchesse d'Angouleme*, come up to the highest standard of perfection with us on standard trees. Pear on the quince has never amounted to a hill of beans with us yet; it is doubtful whether they will, for the quince itself does poorly, and with the best care is short lived, although in some locations they are fine, but such are rare. GEO. KETCHUM, 2d.—*Marshall, Mich.*

[The varieties of pears you inquire about can be had at the nurseries here.—Ed.]

THE CURCULIO.—It would have done you good had you seen my *Jeffersons*, *Washingtons*, *Huling's Superbs*, *Green Gages*, *Columbias*, *Goldendrops*, apricots, nectarines, last year, all bending under a tremendous load of the finest fruits ever beheld in the neighborhood of Port Dalhousie, saved as follows:—Placed two or three well made wind mills in the head of each tree, with a clapper attached to each which struck upon a piece of sheet iron, and when the wind blew kept up a terrible jingling noise; one and a half yards of white muslin tied up so as to float nicely in the air as close to the tree as possible without touching it; and lastly, when dinner was over each day, I would catch up a sheet made for the purpose, and say, "Come, boys, hold the sheet," and I would jar the tree and kill all that fell upon it. Operations to commence as soon as the blossoms have fallen, and continued until the stone becomes hard in the fruit, after which the curculio cannot make it drop, though some half or one-sided fruit will appear by his work, but the quantity will be small and not missed. W. H. READ.—*Port Dalhousie, Canada West.*

HOW TO DESTROY THE APHIS IN THE ORCHARD AND NURSERY.—Having seen several inquiries in different publications, asking information as to some means of destroying the small green insects called Aphis, which are very injurious to the young shoots of apple trees, especially of young grafts, nearly destroying them, and having found by fair experiment a sure and safe remedy, I take the trouble for the benefit of others, to forward it to you for publication, if you deem it worthy of a place in your columns.

Take a convenient vessel, put into it a quantity of white lead, and add water to bring it to the consistence of whitewash. Apply it to the young growing scions with a soft brush, or by dipping them into it. Several applications may be necessary in the course of the season. J. MORSE.—*Granville, Bradford Co., Pa.*

Editor's Table.

FAIR OF THE METROPOLITAN INSTITUTE.—The Metropolitan Institute, of Washington, D. C., altho' only six months old, has held one of the most successful exhibitions ever witnessed in the United States. Three steam engines were in operation, one of which, outside the building, drove PAGE'S Saw Mill. This is a recent invention, or improvement, having two circular saws, one above and the other below the saw-log, and each cutting to its center as the log passes between them. A cheap and good saw mill which is portable, is a machine greatly needed in many farming districts. Mr. P. is a resident of Baltimore.

The Conical Burr Mill of Mr. CHAS. ROSS, of Rochester, N. Y., attracts much attention, and has been honored with some fifty premiums at previous exhibitions.

In the Fruit line, nothing could well exceed in beauty and truthfulness Mr. T. GLOVER'S artificial fruits, of almost every kind grown in the Northern States. His display of pears, apples, plums, cherries, and strawberries, deserves especial commendation. Mr. G. resides at Fishkill, N. Y., and is constantly adding to his collection, which we hope to see purchased and placed in some agricultural museum to which the public may have constant access for study and improvement. The insects injurious to fruit trees and fruits, are true to the life; and the plan is equally applicable to all the larger insects that attack the plants and animals owned by man.

The Marbleized Cast Iron Mantels, manufactured in New York by Mr. E. DEMING, are distinguished for beauty, cheapness and durability.

Mr. S. C. MENDENHALL, of Richmond, Ia., has in operation a recently invented Hand Loom which is destined to supersede and drive out of use everything of the kind now to be found in families that still weave fabrics for home consumption. Both the throwing of the shuttle and working of the treadles are dispensed with as pedal and manual efforts. The weaver does nothing but move the lay backwards and forwards with one hand; and this simple motion drives the shuttle and treadles, and enables one to weave two or three times faster than he can on a common loom. It will doubtless supersede common power-loom factories, being less complicated, much cheaper, and little subject to disarrangement.

Marble Slab Coffins, manufactured by JOHN

McF. LYETH, of Baltimore, are impervious to air and water; and where tombs and vaults are used instead of graves, for depositories of the dead, these stone coffins possess many advantages. They neither rot like wood, nor oxidize like metals; and covered with earth in graves, they will last for indefinite centuries.

The above refers to but a very few of the new and useful inventions practically illustrated and exhibited in the magnificent hall of the east wing of the Patent Office. This Hall is itself no mean emriosity in this country; it being 270 feet in length by 70 feet in width. Both the floor and walls overhead are of solid masonry, supported by marble columns. The Hall is soon to be filled with Patent Office models, put up in iron and glass cases, at great expense, that all may be fire proof.

PRIVATE CORRESPONDENCE.—We receive many letters containing inquiries which are not of sufficient general interest to warrant their insertion in the *Farmer*. Some of these we answer privately, but during the winter months such is the press of business consequent on the renewal of subscribers, &c., that we find it absolutely impossible to keep even with our correspondents. Any who have written us and received no answer shall be attended to if they will only pardon our negligence, and write us again during the present leisure season.

A CORRESPONDENT writes that he has a three year old sow of the Native and Leicestershire breed, that brought sixty-four pigs at three litters in the course of fifteen months, forty-seven of which were sold when four weeks old for \$64. Three that were fatted, weighed, when six months old, 200 lbs. each. He adds in a post-script that she has just made another report of twenty little ones all alive and well. This makes eighty-four pigs in twenty-one months.

COL. SHERWOOD'S SALE.—It will be seen by our advertizing pages, that Col. SHERWOOD will sell part of his stock of Short Horns, at his farm in Auburn, in June next. Col. S. has spared no expense necessary to enable him to avail himself of the best stock to be procured either at home or abroad, and the present sale will be one possessing great attraction to breeders.

CHEMICAL FIELD LECTURES FOR AGRICULTURISTS. By Dr. J. A. STOCKHART, Professor in the Royal Academy of Agriculture at Tharand. Translated from the German. Edited, with Notes, by JAMES E. TUSCHKMACHER. Published by JOHN BARTLETT, Cambridge, Mass.

This is one of the best little works on agricultural chemistry extant. It is eminently practical and scientific. Though written more especially for German readers, it is a book which no intelligent American agriculturist can read without much profit. It embodies many of the more recent developments of science, and judiciously applies them to the details of farm husbandry. It contains some few theories which do not accord with our experience, and which we have good reason to believe erroneous; but as a whole, these "chemical field lectures" contain more science and sound common sense than any other work we have read on agricultural chemistry.

OREGON.—On one day of the present month, we received six letters from Oregon, each containing orders for clubs of the *Farmer*. Already we have more subscribers in Oregon than in any Southern State, except Kentucky. Large shipments of fruit trees have been made from this section to Oregon, and we have sent by mail more agricultural and horticultural books than to any State in the Union. This speaks well for the enterprise and intelligence of the farmer on the shores of the Pacific.

From a letter from JOHN MIXTO, of Salem, (Jan'y 5th) we make the following extract:

"You have an Oregonian's thanks for the compliment in the September number of the *Farmer*. But there is one item in the said number, methinks, neither flattering nor true, viz: the amount of wool that a sheep is said to yield. It is very questionable whether half the amount of wool was given in to the census taker, as there was no pains taken to save it, there being no market for it. The writer himself keeps a small lot of sheep, of which the following is an account for 1882: 21 head, 1 year old and upward, yielded 87 lbs.—washed on the sheep; 14 ewes brought 24 lambs and raised 21; sold washed wool at 49 cts. per lb.; lambs, nine months old, \$8 per head; grown sheep commands from \$10 to \$12 per head. As a general thing, sheep do well without any other attention than penning up at night, which is amply paid for by the manure they make.

"This winter has been an exception, as we have had snow on the ground two weeks; it is all gone now, however.

"To conclude, I beg leave to predict that Oregon will yet be one of the first countries in the world for wool and mutton."

Inquiries and Answers.

(H., Valley Farm, N. H.) Guano would give you good crops of rye and corn. We do not know whether it would pay you to use it on these crops when they sell at \$1 per bushel, but should think it would. Can you not get the same amount of fertilizing matter in barn-yard manure, composts, &c., for a less cost than in guano? If you cannot, Peruvian guano is far the cheapest artificial manure in the market. Try a few

hundred weight and let us hear the result. Sow it broadcast for rye, and in the hill for corn, being careful, however, that the seed does not touch the guano. 300 lbs. per acre is the usual quantity.

(A. J. HINDS, Grand Rapids, Mich.) There is no foul meadow-grass seed in the seed stores in this city.

(JESSE OSBORN, Paoli, Ind.) The earlier you plant potatoes after the land is in good working condition, the better. They ripen earlier in the fall and so stand a better chance of escaping the disease. Whole potatoes planted in hills 2½ feet apart, is attended with less labor than cutting and planting them in rows, though the latter probably gives the largest yield per acre. We prefer planting in hills. Well rotted hog manure is considered best for potatoes.

(E. WARE, Jr., Hancock, N. H.) We do not think it would be profitable to mix salt at 50 cts. per bushel, or plaster at \$10 per ton, with guano, previous to sowing on spring wheat. We have had no experience in composting it with meadow muck. We should think, however, that it would be advantageous to use it in this way. Salt is not, to our knowledge, used by New York farmers in stacking wheat. It is used to great advantage on hay.

Multicaul Rye is a winter grain.

Back numbers of the *Genesee Farmer* are not subject to a higher rate of postage than when mailed at the regular time of publication.

BEEF SUGAR.—I have noticed various accounts for years past relating to the manufacture of Beet Sugar, and I think I have seen statements of the expense of an establishment upon a small scale—the whole process of manufacturing—but I do not know where to look for the account. A number of subscribers seem to feel interested in the matter, and would be pleased to understand the whole plan. HERVEY JOHNSON.—*Holland.*

Much has been said and written on the production of beet-root sugar in this country, but so far as we know little has been satisfactorily done. We are still destitute of that practical and pecuniary information which farmers most desire. Any of our readers who have experience on this subject, will do us a favor by expressing their views in the *Farmer*.

BARN-YARD MANURE.—Please notice in the *Farmer* the best method of treating barn-yard manure that is made during the winter—I mean in the yard. Whether it should be applied in the spring, or otherwise; and where it is intended to be preserved for the following spring crop, how it should be preserved to the best advantage? W. J. COLE-GROVE, *Norwich, Pa.*

The above questions are of great practical importance, and we trust they will call out the opinions of our experienced correspondents. For our opinions on the proper management of manure

during winter, see last December number. If the manure has been properly prepared during winter, and is sufficiently decomposed, we should decidedly prefer to use it for spring crops rather than let it lie over for wheat. It is, perhaps, better applied to corn than any other spring grain crop. It is, however, sometimes very convenient and advantageous to plow it in early for barley. For root crops, manure should be thoroughly decomposed.

Will not four quarts of lime if heaped against peach trees injure them? (1.)

We use soft soap mixed with an equal quantity of water, in this part, as a wash for fruit trees, and think it is much superior to any other, as each rain dissolves some of the soap and makes it appear as if freshly washed. Now would this running down of the soap prevent the *borer* in apple and peach trees? (2.)

Which do you consider the best treatise on poultry? (3.)

Which agricultural chemistry is considered the best? (4.) D. M. LEE.—*Ancaster, C. W.*

(1.) No.

(2.) It might to a slight degree.

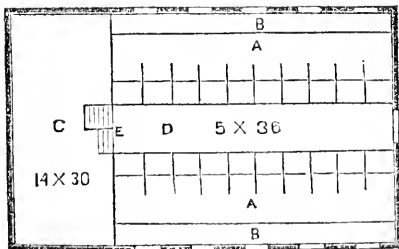
(3.) Dixon & Kerr's Domestic Poultry.

(4.) Boussingault's Rural Economy, Johnston's Agricultural Chemistry, or Norton's Elements.

SWAMP LAND.—I am the unfortunate possessor of some swamp lands, respecting which I wish to make some inquiries of you, or, through your paper, of some one who can give the desired information. The swamp contains about 150 acres, and in its composition appears to be purely vegetable, being of a reddish brown when first thrown up, but becoming black by exposure to the atmosphere. It is of unknown depth, being easily probed with a pole to the depth of twenty feet. Now what I want to know is, whether if it was made dry it would be likely to be good farming land. I can get it made dry for \$1,000—too much money to throw away, but a good investment if it will make farming land, or even bring good crops of cultivated grass. Any information will be thankfully received. J. K. TAYLOR.

We cannot tell whether it would pay to improve such a swamp, unless we had a sample of the soil and submitted it to a thorough chemical examination.

COW STABLE, &c.—In reply to Mr. LEVI PADDOCK, I send you the following plan:



PLAN FOR A COW STABLE.

The stable is 30 feet wide, 36 feet long, with a bay 14 feet by 30 feet. The stable should be 6 feet 6 inches high in clear, with floor descending back 1 to 25 or 30 inches, with a gutter 2 inches deep behind the cows and the back end of the floor plank to lie on the top of the gutter; the

manger to be 2 feet 6 inches wide at the top, 2 feet at the bottom, 1 foot 8 inches deep in front, 4 feet deep next the feed room, and set up from the floor 4 inches. The floor should be on the ground, so as to admit of no air under it. Make the stalls 2 feet back from the manger by setting boards on end, and divide the manger at each stall, in order that each cow may get her allotted food, meal, &c. The cellar, I think, is not necessary at all, but if it is wanted to keep vegetables for the cows, let it be under the bay with a window east and west; dig it 4 feet below the stable and raise it 2 feet above the ground and bank it up with earth. I have six steps to go down cellar and three to go up into the bay. The cows should be fastened by a strap around the neck (not on the horns) and a half-inch rope tied to the center of the front part of the manger. To save the liquid manure, put an inch thickness of tan-bark in the gutter, in order to absorb it, and all may be put out together; old tan-bark is the best, but sand or any dry earth will do. Cut the stable doors in two a little above the center, to open the top, and light and ventilate the stable. The stalls are 3½ feet wide, to give room to milk and card the cows.

I have a number of objections to putting a cow's head in stanchions. One is, she is in misery from the time she lies down till she gets up. You will see a cow at liberty, when lying down, swing her head toward her feet to balance herself. It being an old habit does not argue that it is a good one. NAZRO PARK.—*Bridgewater, Pa.*

SUN FLOWER SEED.—I take the liberty to answer "J. W. N.'s" inquiry in the last *Genesee Farmer* in relation to sun-flower seed. I have fed it to poultry for the last two winters, and found it valuable. It being oily supplies the place of meat—a bushel of seed yielding a gallon of oil. I find one-third sun-flower seed, and two-thirds oats and wheat, mixed together, the best proportion. However, corn might be used for a change in place of the two latter. The hens should have plenty of lime near them. Have boxes made eight inches deep, with bars across the top wide enough apart to admit a hen's head, which will prevent wastage of grain; fill the boxes in the morning, so that they may be supplied through the day. Hens not being acquainted with sun-flower seed, may not eat it at first, but soon will. By so doing, you will be supplied with eggs through the winter, beside the fowls fattening fast. If you wish them to lay, have plenty of gravel near them. Sun-flower seed is not in the least injurious. H. C. ANGLER.—*East Bethany, Gen. Co., N. Y.*

CHIP MANURE.—I notice some inquiries about chip manure. I will say what I do with mine. I put it in my hog pen in the fall when my hogs are fattening. I take about two wheel-barrow loads at a time and let it remain till thoroughly stired up by the hogs; I then throw it out and wheel in some more; and in the spring I have a fine pile ready to put under corn. I. FRENCH HUBBELL.—*Burlington Flats, Ots. Co., N. Y.*

STRETCHES.—In the March number of your paper the inquiry is made whether there is such a disease among sheep as "stretches." I answer yes, it is cured by taking the sheep by the hind feet, and as he springs forward you pull back. Jerk back so half a dozen times, if you please. It will effect a cure. I have never lost one served in this way. L. N.—*Augusta.*

ROOT CULTURE.—Will you do me the favor to inform me at your earliest convenience, the best method of raising the ruta бага carrots and sugar beet. How the soil should be prepared, the time of planting, the space of planting—in short, I wish you would give such information as you may deem profitable, as the raising of these valuable roots is not much attended to in this country. C. Long.—*Mt. Carroll, Ia.*

HORTICULTURAL

(J. S., Brookfield, Wis.) **HOW TO SAVE, AND WHEN TO PLANT, RASPBERRY AND BLACKBERRY SEED.**—Take the largest and finest *well-ripened berries*, press the juice out of the pulp, dry it a little, and sow immediately in a mixture of light, sandy loam and leaf mold, either in the open border or in pots or boxes.

(R. L. G.) The weeping willow succeeds quite well on "dry upland." The best specimens we know are on dry soils.

(S.) We have no faith whatever in your theory of the production of "sweet and sour" apples. We know the apple well which you send, and have it bearing on our own grounds; but it has not been produced by "bisecting buds,"—that is mere moonshine.

(J. L. H., Steubenville, Ohio.) We know of no monthly bearing strawberry the size and shape of yours. It may be a valuable variety. We would be glad to get a few plants for trial.

(A. M., Oberlin, Ohio.) Your orange and lemon trees should be grafted or budded. It may be done any time.

(J. S. P., New Holland, Ind.) Osage Orange seed is sold at the seed stores for about \$1 per quart. Two or three quarts will give you plants enough for 100 rods of hedge.

(N. C. Y., West Creek, Ia.) You can get Osage Orange seed of N. G. MAXN & Co, Louisville, Ky, at \$20 per bushel. Probably you can get it in Cincinnati.

(J. W. G., Ball's Pond, Conn.) We do not know that the *Baldwin* will be suitable for shipping.—Its flavor and texture will not please the better class of foreign purchasers as well as the *Newtown Pippin*. They prefer crisp, high flavored fruits.

(A. G. B., Merrillville, Ia.) It is better to grow the Osage Orange plants in a seed bed or drills, and then transplant to the hedge-row. We have directed another correspondent where to obtain seeds.

(J. H., Chippewa.) You can obtain the pears in any of the nurseries here. See advertisements.

(J. N. B., Yellow Creek, Ohio.) We will thank you for a few scions of three or four of your best seedling apples—long keepers.

(R. P. W., Picton.) Bone dust is valuable for trees. Either mix with the earth at the time of planting, or spade in lightly around the trees. The old lime may be applied in the same way.

Peach trees, on the south side of a building, will be too much subjected to freezing and thawing. They will do better on the north side. *Crawford's Early* is a hardy variety for September.

(H. M., Bodega, California.) Easterly winds are not injurious to our fruit crops here. Our most destructive winds are the west and north-west, generally.

Fruit buds are larger, rounder, and more prominent, than leaf buds, generally. The differences are pointed out and illustrated in the *Fruit Garden*.

(J. D. E., Rough and Ready, Ky.) The sheep skin, with wool, placed around the trees might prevent the ascent of ants, but the cretulin *can fly*, and no mistake; you can't draw the wool over his eyes.

A correspondent asks:

"Will cranberries succeed profitably on wetish creek bottom land which overflows three or four times in the course of the season? This land is never overflowed longer than two days at a time.

"Would they do well on the margin of a pond?"

Superphosphate of Lime.

IN BAGS and Barrels, made by C. B. DE BRON, with full directions for use,—warranted a pure and genuine article—for sale by GEO. DAVENPORT.

No. 5 Commercial, corner of Chatham street, Boston, Agent for the manufacturer.

Also, for sale, Ground Bone, Bone Dust, Burnt Bone, Guano, and Grass Seeds, of reliable quality. [4-tf]

Farm Implements for California.

BURRALL'S Prize Reapers, Mowers, Threshers, and Separators; Clod Crushers, Field Rollers, Cultivators, Horse Powers, &c., &c.; all warranted of the best material and workmanship,—strong, simple, and reliable,—expressly for that market. Made, and sold cheap for cash, by

THOMAS D. BURRALL,

[2-3t] Geneva, Ontario Co., N. Y.

Emery & Co.'s Improved Horse Powers, Threshers, and Separators.

THE undersigned have been appointed sole agents for the sale of Emery's new Patent Improved Horse-Powers, Threshers, and Separators, in the city of New York. The State Agricultural Warehouse is the only depot where this superior Power can be had.

LONGETT & GRIFFING,

7-tf. State Ag. Warehouse, 25 Chiff st., New York.

New Pension Laws.

REVOLUTIONARY, Indian Wars, War of 1812, Florida, and Mexican Wars. Claims for Pensions allowed the widows of those who died in service, prosecuted by

F. E. HASSLER,

Washington City, D. C.

All letters must be pre-paid.

Refers to Hon. Lynn Boyd, Speaker, H. R. Hon. J. D. Doty, H. R. March, 1853.

Fruit and Ornamental Trees.

FOR sale, as usual, at our old location on East Avenue
BISSELL & HOOKER,
[3-24] Commercial Nurseries, Rochester, N. Y.

Prouty and Mear's Plows.

A large assortment of these celebrated Plows can be found
at the North River Agricultural Warehouse and Seed Store,
53 Cordand St., New York. GEO. H. BARR & CO.

Basket Willow.

CUTTINGS of the best kind of basket willow (with di-
rections for planting) for sale at \$5 a thousand by
WM. H. DENNING,

March, 1853—2¢. Fishkill Landing, Dutchess Co.

Hong Kongs!

THE subscriber offers for sale the present season, Eggs of
the famous Hong Kong Fowl. Address, post-paid,
SAML. MCINTOSH,

April, 1853. Canoga, Seneca Co., N. Y.

Eggs for Hatching.

THE subscriber offers for sale during the coming season,
Brahma Pootra, Shanghai, and Black Spanish eggs for
hatching, from as good stock as can be found in America.
THOMAS WRIGHT,

[4-21] Uica, N. Y.

Eggs of Chinese Fowls for Sale.

I HAVE a fine collection of all the improved varieties of
fowls, and will sell eggs the present season of the following
varieties:

White Shanghai, Black Shanghai, and Red Shanghai,
at \$3 per dozen, nicely packed and forwarded as directed.
Also, Royal Cochon China and Brama Pootra, at \$4 per
dozen. All fresh and fit for setting.

Address WM. VICK,
April, 1853. Rochester, N. Y.

Cochin China Eggs for Sale.

THE subscriber has the best collection of Cochin China
fowls in the State, and, perhaps, in the country—so stated
by those who have seen them. They obtained the first premium
at the Monroe County Agricultural Fair last fall. My
stock was obtained from J. Vick, Jr., one of the editors of the
Farmer, and are pure and exceedingly fine.

I will sell eggs from these fowls, nicely packed, and for-
ward by express, or in any way directed, for \$4 per dozen.

MILES DECKER,
April, 1853. Rochester, N. Y.

Clarke's Excelsior Churn!

FROM present indications 100 to 500 of these improved
and most valuable Churns are needed, and can be sold in
every dairy county of the Union. Warranted superior
to any other kind!

Price—two sizes—delivered on the railroad at Uica, \$7
and \$10 each.

County rights for sale. Apply to
GEO. B. CLARKE, Patentee,
[4-14] Leonardsville, Madison Co., N. Y.

Plows and Cultivators.

PROUTY & MEARS' Patent Center Draft Plows—all
sizes—and castings for the same.

MORSE & HOWES' New Improved, fitted up in the most
substantial manner.

Iron's Iron Beam Plows, of all sizes,
Universal Cultivators, with Sowerers; Expanding do.;
and Hand Garden Cultivators and Plows.

For sale by LONGETT & GRIFFING,
[4-14] No. 25 Cliff street, New York.

American Eloquence for the Million.

NOW PUBLISHED, *Daniel Webster's* three Greatest
Orations, and the Speech in Reply to Hayne.—The volume
contains the Entree on Adams and Jefferson; First Settle-
ment of New England; the Bunker Hill Monument; and
the Reply to Hayne. The work is embellished with a fine
and accurate portrait on steel, of the great statesman and
orator.

Price—Single copies, 37½ cts., in paper; in muslin bind-
ing, 50 cts. It can be mailed to any part of the world.
Three copies for \$1.

Address all orders to
WILBUR M. HAWARD, Publisher,
▲April, 1853. Rochester, N. Y.

Charles Moulson

OFFERS for sale at his nursery, situated on North Union
street, a few rods north of New Main street, a general as-
sortment of Fruit Trees, consisting of the best varieties of
Apples, Pears, Plums, Peaches, Apricots. Dwarf Apples
and Pears on Paradise and Quince stocks. Also Currants,
Gooseberries, Raspberries, Strawberries, Grape-vines, Rhu-
barb, and Asparagus plants. Also, 10,000 Apple seedlings,
for stocks.

All orders will receive prompt attention, and when requi-
site, trees will be packed suitable for transportation.
Rochester, April 1, 1853.

Manures!

Superphosphate of Lime, (Deburgh's), 2¼ to 2½ cts. per lb.
Peruvian Guano,..... 2¼ to 2½ " "
Bone Dust, Sawings, or Meal,..... \$2.50 per bbl.
Turnings, and Fine Crushed,..... 2.25 " "
Potash,..... 3¾ to 4 cts. per lb.
Charcoal, pulverized,..... \$1 per bbl.
Sulphuric Acid,..... 2¼ to 2½ cts. per lb.
Plaster of Paris,..... \$1 to 1.25 per bbl.

For sale at the State Agricultural Warehouse,
LONGETT & GRIFFING,
[4-21] No. 25 Cliff street, New York.

REMOVAL!

HALLOCK'S AGRICULTURAL WAREHOUSE has
been removed from No. 50 State street, to

No. 24 Exchange St., Rochester.

in the Store formerly occupied by J. E. CHENEY as a Store
Store. The new store is well supplied with Implements,
Seeds, &c., comprising a larger and more complete assort-
ment than heretofore. Former customers and farmers gen-
erally are invited to call at the new establishment and ex-
amine for themselves. E. D. HALLOCK,
April, 1853. 24 Exchange St., Rochester, N. Y.

Improved Superphosphate of Lime.

AND C. B. Deburgh's No. 1 Superphosphate of Lime.—
The subscribers have been appointed sole agents for the sale
of C. B. Deburgh's No. 1 Superphosphate of Lime, and do
hereby agree to warrant the above article sold by us, with
our names on the bags, to be equal to the analysis made by
Prof. Johnson, of Yale College, of the so-called Improved
Superphosphate of Lime, manufactured under the direction
of Prof. Mapes. And any person who may have the said
C. B. Deburgh's No. 1 analyzed, if not equal to that analysis,
we will pay the cost of such, not to exceed \$5, and will re-
fund the money to the purchaser upon the return of the
Superphosphate.

Price \$45 per ton. LONGETT & GRIFFING,
State Agricultural Warehouse, 25 Cliff st., near Fulton,
New York. [4-14]

Imported Horse, "Consternation."

THIS thoroughbred horse has been so often exhibited at
the Fairs of the New York State Agricultural Society, and
always without a rival, that it is unnecessary either to de-
scribe or praise him. Six or seven of his colts, of various
ages, were shown with him at Uica last fall. Two of them
received first premiums, and all of them were greatly admir-
ed. Many of them, now four and five years old, are owned
in Oneida county. Any person may be convinced of their
great superiority by inquiring of almost any farmer or horse-
man in the towns of Rome, Lee, or Western. His colts and
fillies are already in demand for breeding. Several have
been sold during the past winter, at handsome prices, to go
out of the State.

His pedigree will be found complete in Derby & Miller's
edition of Youatt, and is confirmed in every particular by
breeder's certificates and copies of the English Racing Cal-
endar, and English Stud Book, now in possession of the
subscriber.

He will stand the coming season at the farm of the sub-
scriber, two miles west of Syracuse and adjoining the town
of Geddes.

Terms.—\$10 for the season, and \$15 to insure; the money
to be paid in advance in all cases. When a mare is insured
and left at the farm of the subscriber or regularly returned
to the horse until the groom is satisfied she is in foal, a re-
ceipt will be given promising to refund the money if the
mare was not got in foal. Pasturage furnished at three
shillings per week. Mares to be at the risk of owners in all
respects.

J. B. BURNETT,
[4-34] Syracuse, N. Y.

THORBURN'S SEED STORE.

THE Subscribers, wholesale and retail dealers in VEGETABLE, FLOWER, FIELD, FRUIT and TREE Seeds, offer, all of last year's growth, the largest and most complete assortment to be found in the United States, all pure and of unsurpassed qualities, derived from first sources in Europe or raised expressly for them in this country.

MARKET GARDENERS, and others requiring large quantities of Seeds for their own planting, may rely on obtaining Beets, Cabbages, Carrots, Brocoli, Cauliflower, Onions, Early and Late Peas, Beans, Radishes, and other leading articles, raised from the same unrivalled stocks, which have given such general satisfaction heretofore in all parts of the Union.

AGRICULTURISTS are offered White French and Yellow German Sugar Beet, Long Red and Yellow Globe Mangel Wurtzel, Purple Top and Skirving's Improved Ruta Baga, all at 50 cents per pound. Long Orange, Albringham and White Field Carrots, \$1 per pound; with all other varieties of Agricultural seeds, Clovers, Grasses, Vetches, &c., at corresponding fair prices, and of qualities to be depended on.

RETAILERS and **COUNTRY MERCHANTS** supplied on the most favorable terms.

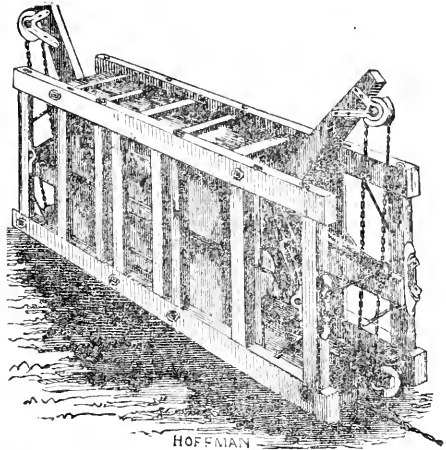
CATALOGUES furnished to post-paid applicants.

FLOWER SEEDS can be forwarded expeditiously by mail at trifling cost.

Particular attention given to the careful packing of seeds for long voyages, and the smallest order by mail promptly attended to.

J. M. THORBURN & CO.
15 John street, New York.

Just Published—Thorburn's annual catalogue of Native and Exotic Tree, Shrub, &c. Seeds. April, 1853—2t.



H. L. Emery's Newly Invented Double, Toggle-Jointed, Horizontal, Progressive Lever Hay and Cotton Press.

PROBABLY no one thing has been more wanted, and less improvements made upon it of late years, than the Hay Press. Notwithstanding this was completed quite late the past season, a large number were made and put into successful operation. As seen in the cut it is closed up and about midway in process of compressing a bundle of Hay. When fully pressed home, the ends of the levers, which are seen at each end extending above the box, are brought down by the chains or ropes and shelves, until the levers themselves become horizontal with the floor. The Press is provided with two followers, both working from the ends towards the center and each other. The chains or ropes from the levers are connected together by passing one of them under the machine and both joining in a larger chain or rope—this larger one being connected with a capstan or blocks and ropes, as most convenient.

When the Press is driven home, the hay becomes pressed into a bundle standing on its end. The side doors are thrown open while the bands are passed round the bundle and secured, when the top doors are loosened and the bundle thrown out. For operation, the levers are raised, the followers drawn back, and the top doors opened from the center to each end by unbuttoning the middle cross bar, as seen in the cut. The opening on the top for receiving hay, is 2 feet wide and 8 feet long. The Press stands upon the floor or ground when in use, which makes it both convenient and capacious for filling and treading in the hay.

The whole Press measures 14 feet long, 2 ft. 10 in. wide, 4 ft. 10 in. high, outside measurement, and weighs, complete, from 1200 to 1500 lbs., and is capable of compressing 250 lbs. of Timothy Hay into 16 cubic feet, (being 2x2x4 ft.) at the rate of five bundles per hour, with two men and one horse, and heavier bales in proportion as to size and time required.

For transportation, the inside work is readily removed and boxed up, while the sides are packed together making solid cubic measurement of the whole thing.

Price complete, with chains and capstans, \$135, and warranted to work as represented, to the satisfaction of the purchaser.

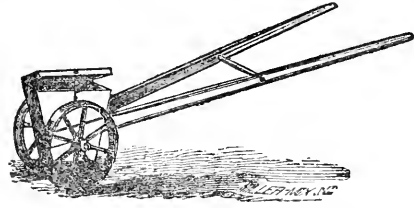
I will, in a future number, give a further notice in detail, with more cuts illustrating its several parts detached. For further particulars address H. L. EMERY, April, 1853. Albany, N. Y.

Phosphoric Plaster,

FOR FARM & GARDEN USE.—This plaster as analyzed by Prof. J. P. NORRIS, of Yale College, contains the following ingredients: Silicia, Magnesia, Alumina, Oxide of Iron, Lime, Phosphoric Acid, and Phosphate of Lime.

From the most thorough trial of its properties in the growth of grains and other vegetable matters, this plaster has been proved to be the best adapted to all kinds of land of any that has been heretofore brought into use.

Manufactured at Clymer, Chaut. Co., N. Y. by EMANUEL BEARDSLEY.



Hallock's Hand Seed Drill.

THIS Drill is adapted to sowing carrot, turnip, beet, onion, and other small seeds in drills, with perfect regularity, and without regard to their weight or shape. The seeds are forced out by a circular brush, which revolves against a perforated tin plate inserted in the bottom of the hopper. A series of these plates accompany each drill, with holes of different sizes for regulating the quantity and kinds sown. It is a light, compact, and durable machine, and not liable to get out of order. They can be forwarded to any part of the country by railroad or stage. Remittances by mail at my risk. All orders (which should give full directions for forwarding,) promptly attended to. Price, \$5.

Address E. D. HALLOCK, Rochester, N. Y.

April, 1853.

Patent Mammoth Premium Corn-Stalk, Hay, and Straw Cutters & Grinders.

CAPABLE of preparing 100 bushels of Corn-stalks, or One Ton of Hay or Straw, per hour, and reducing the largest Corn-stalks to the consistency of Cut Straw, avoiding the necessity of steaming or soaking, and saving 80 per cent. over the common way of feeding fodder. Horses and Cattle will do as well on fodder prepared this way, as on the best hay. The First Premiums have been awarded at every exhibition where they have been exhibited for competition. It can be worked by hand or power, without additional cost. The inventor will forfeit \$50, after an impartial trial, when this Machine is used in preparing good fodder, if it does not prove to save 80 per cent. over the common way of feeding fodder, and it may be fed in the same condition as the machine leaves it, without meal or soaking. Cows fed on fodder produce sweeter butter. Over 900 of these Machines have been sold. Price—\$35.

State and County Rights for sale.

Gilbert's Excelsior Thresher and Cleaner, Accomplishing more, with the same power, than any other Machine. It can be driven with two horses.

Price—\$200 and upwards, according to size. Horse Power included. Apply post paid to J. G. GILBERT, [2-4] 216 Pearl st., New York.

**PRINCE & CO.'S
IMPROVED PATENT MELODEON.**

GEO. A. PRINCE & Co., MANUFACTURERS, 200 MAIN ST., BUFFALO, N. Y.
WHOLESALE DEPOT, - - - - - 87 FULTON STREET, NEW YORK.

For the convenience of MUSIC DEALERS in all parts of the United States, we have made an arrangement with the following firms, who will supply the TRADE at our regular Factory prices:
GEO. P. REED & CO., 17 Tremont Row, Boston, Mass. COLBURN & FIELD, 154 Main St., Cincinnati, O.
BALMER & WEBER, 58 Fourth St., St. Louis, Mo.

General Agent for New York City,
Wm. HALL & SON, - - No. 239 Broadway, opposite the Park.

The subscribers take this method of calling the attention of the public to a new Musical Instrument, as yet but little known to the musical world, viz: Prince and Co.'s Improved Patent Melodeon.

It is now about five years since these instruments were first offered for sale, and during that time the increased demand for them has been unparalleled. One hundred and fifty workmen are constantly employed in the manufacture and finishing from 75 to 80 instruments per week, and as yet they have not been able to supply the demands promptly.

For the benefit of those residing at a distance, and consequently unable to inspect the Melodeon before purchasing, we will endeavor to give a short description of the instrument.

The cases are made of Rosewood, and are as handsomely finished as any piano forte. The keyboard is precisely the same as the piano or organ, and the tone (which is very beautiful) closely resembles that of the Flute Stop of the Organ—the notes speak the instant the keys are touched, and will admit of the performance of as rapid passages as the Piano. The Pedal on the left is intended for a swell, and with which the most beautiful effects can be produced. The Pedal on the right supplies the wind, and works so easily that a child can manage it without any exertion. The Bellows, (which is something entirely new, and for which a Patent was granted in December, 1846,) is a reversed or exhaustion Bellows, and it is this, in a measure, which produces the peculiar tone. The instrument can be immediately made portable without detaching any part, the bellows receding into the body of the instrument, and the legs folding under and springing to their places, leaves the whole in a compact form. Each instrument has a packing case secured by lock and key.

The volume of tone is equal to that of a small organ, and by means of the swell may be increased or diminished at the pleasure of the performer: it is sufficiently loud for small churches, and is well calculated for a parlor instrument. Hundreds have examined them, and all have been loud in their praise; and the best evidence of their merit is their rapid sale. But it is a new instrument—a new invention, and is yet but little known in the musical world, and it is for this reason that we call to the attention of all lovers of Music, believing that there are thousands who would lose no time in securing one, were they aware of the existence of such an instrument, and the low price at which it could be obtained.

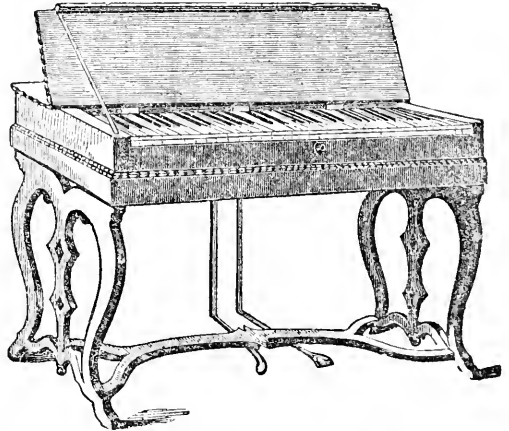
The following letter from Lowell Mason, Boston, to G. P. Reed, we are permitted to use:

Mr. GEO. P. REED, No. 17 Tremont Row, Boston, Mass.

Dear Sir—At your request I have examined one of the Melodeons manufactured by Messrs. Geo. A. Prince & Co., of Buffalo. I think the instrument in all respects equal, and

in some respects superior, to any others of similar kind which I have seen, and in particular with respect to quality of tone and promptness of touch, or action of the reeds, by which quick passages may be performed with certain and distinct articulation of tones. An instrument of this kind is the best substitute for an Organ in Church Music with which I am acquainted.
LOWELL MASON.

Boston, Mass., Sept. 26, 1849.



Five Octave—Portable. Price, \$75.

PRICES.

FOUR OCTAVE MELODEON, extending from C to C.....	\$45 00
FOUR AND A HALF OCTAVE MELODEON, extending from C to F.....	65 00
FIVE OCTAVE MELODEON, extending from F to F.....	75 00
LARGE FIVE OCTAVE MELODEON—Piano style.....	100 00
LARGE FIVE OCTAVE MELODEON—Piano style with two sets of reeds, tuned in octaves.....	150 00

Just published, "PRINCE'S COMPLETE INSTRUCTOR FOR THE IMPROVED MELODEON," to which is added favorite Airs, Voluntaries, and Chants, arranged expressly for this Instrument. Price 75 Cents.

CAUTION.—In consequence of the great success which has attended the introduction of Prince & Co.'s Melodeons, numerous imitators have sprung up in different parts of the country—offering instruments under the same name, and in outward appearance resembling them. We would therefore caution the public to be on their guard, and examine those made by Prince & Co. before purchasing. Many improvements applied *exclusively our own*, and being the original manufacturers, our experience has enabled us to produce Instruments which a discerning public have unanimously pronounced superior to any thing of the kind hitherto manufactured. Many of the most eminent Musicians of the cities of New York and Boston have voluntarily given testimonials as to the high character of our Instruments, which can be seen on application.

All orders from a distance will be promptly attended to, and a written guaranty of their durability will be given if required.

GEO. A. PRINCE & CO.

FRUIT TREES, &c.

A. Frost & Co., Genesee Valley Nurseries, Rochester, N. Y.

OFFER for sale the following at low prices, which comprises a part of their large stock, that they will forward to any part of the country. Parties can depend that no second rate articles will be sent out, and that they will prove to be true to description. The packing is done in the most secure manner, that plants may reach their destination in perfect safety.

APPLE TREES.—Standards of fifty best leading varieties of apples. Dwarf and Pyramidal bushes, 1 and 2 years old, for gardens.

PEAR TREES.—Standards, on pear stock, 2 and 3 years old, comprising all the fine sorts. Pyramidal and Dwarf, worked on imported Quince, 2 and 3 years old. Pyramidal, extra size, with fruit buds.

CHERRY TREES.—Standards, a large collection embracing 45 best sorts. Dwarf and Pyramidal, 2 years old, for orchards and gardens.

PEACH TREES.—All the desirable varieties. PLUM, NECTARINE and APRICOT TREES.

QUINCE BUSHES.—Portugal, and the Apple or Orange.

GRAPE VINES.—Native—Catawba, Clinton, and Isabella. Foreign, in pots, suitable for planting at once; embracing 15 of the finest sorts.

CURRENTS.—White and Red Grape, Cherry, May's Victoria, White and Red Dutch, Black Naples, English, and 5 other kinds.

GOOSEBERRIES.—A large stock of 40 Prize Lancashire varieties, best suited for cultivation in this climate.

RASPBERRIES.—Yellow, or White, and Red Antwerp, Fastolf, Franconia, Large Fruited Monthly and the Red Antwerp which is so extensively cultivated on the Hudson for the New York market.

STRAWBERRIES.—12 of the best sorts.

ESCULENT ROOTS.—Asparagus, 2 years; Rhubarb of all sorts; Sea Kale, &c. The Asparagus will be sold very low, if a large quantity is taken.

HEDGES.—Privet, 2 years; Buckthorn and Osage Orange, 1 year.

THE ORNAMENTAL DEPARTMENT

is very extensive, and they refer parties to their catalogue for the varieties they cultivate, but will notice the following:

SALIX PENDULA.—A new Weeping Willow. It is one of the most beautiful and graceful trees, for lawns, &c., in cultivation.

ROSES.—An extensive stock on hand, comprising more than 300 of the varieties. 150 of the sorts are Remontant or Hybrid Perpetuals, many of which that are now offered by them are presented to the public for the first time in this country.

LILIES.—Of those that are suitable for planting in the spring, they have strong flowering ones of Japan Lilies, which will produce from one to five blooms each, as follows: Lancifolium album and rubrum, Lancifolium punctatum.

BEDDING PLANTS.—Their stock of Dahlias, Verbenas, &c., &c., for extensive and choice varieties of the respective kinds, cannot be exceeded, if equalled, in the United States.

100,000 Norway Spruce Firs, and other hardy evergreens, 4 to 15 inches high. Price very low by the quantity.

The following Descriptive Catalogue, lately published, and containing the prices, will be mailed, free, upon application, when one cent postage stamp is enclosed for each Catalogue wanted, to any part of the country.

No. 1. A Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, &c., &c.

No. 2. A Descriptive Catalogue of Dahlias, Verbenas, and other bedding plants.

No. 3. A Wholesale Catalogue or Trade List, for nurserymen and others who wish to buy in quantities.

March, 1853.

Gooseberries, Fastolf Raspberries, &c.

JOHN SAUL, Washington, D. C., offers the following for sale:

4,000 Lancashire Gooseberries, comprising all the leading varieties, such as Crown Bob, Roaring Lion, Red Warrington, Champagne, Leigh's Rifleman, Parkinson's Green Laurel, Woodward's Whitesmith, &c. The plants are very vigorous and thrifty, and true to name.

4,000 Fastolf Raspberries, strong canes, warranted the genuine variety.

300 Raby Castle or Victoria Red Currant.—the largest and best. 300 Wilmot's large Red do. 500 White Dutch do. 300 Black Naples do.

The above at very reasonable prices.

March, 1853—2t.

D. S. MANLEY & BROTHER, BUFFALO NURSERY, Buffalo, N. Y.

HAVING purchased this well established Nursery of its original proprietor, Col. B. Hodge, we take pleasure in offering for sale an unusually fine assortment of

FRUIT AND ORNAMENTAL TREES, SHRUBS AND PLANTS.

Our Fruit Department is supplied with fine healthy trees on their own stocks, of all the desirable varieties now in cultivation, together with Cherries and Pears dwarfed on superior stocks.

The Ornamental Department includes all the best varieties of Evergreen and Deciduous trees.

Roses.—One of the finest collections in this country, comprising all that are new and rare.

Dahlias.—An unrivalled selection of Dahlias, which has been procured at great cost.

Ponies.—We call particular attention to our stock of Pconias, both herbaceous and tree varieties.

The stock of *Shrubs* is unusually extensive and was collected by the late proprietors with peculiar care.

Of Currants, Gooseberries, Raspberries, Grapes, and Strawberries, we have vigorous plants of the best varieties.

It will please us to furnish all applicants with our Catalogue.

Norway Spruce, Silver Fir, &c.

JOHN SAUL, Washington, D. C., offers the following for sale:

300,000 Norway Spruce,	4 to 6 inches.
300,000 " "	6 to 8 " "
15,000 " "	9 to 12 " "
8,000 " "	2 to 3 feet.
10,000 Silver Fir,	4 to 5 inches.
20,000 " "	5 to 6 " "
10,000 " "	6 to 7 " "
1,000 " "	12 to 15 " "
1,000 " "	2 to 3 feet.
3,000 Larch (Europ'n)	2 to 3 " "

The attention of Nurserymen and Planters generally, is respectfully called to the above extensive collection, which will be sold at very low prices. Persons taking large quantities will be dealt with liberally. The whole are remarkably thrifty and fine.

March, 1853—2t.

Osage Orange.

IT has now been demonstrated that this plant will make a better hedge than anything heretofore used for that purpose, and that it is perfectly adapted to this climate. Some of its advantages are as follows:

Animals of every kind are fearful of it, for it has as many strong, sharp thorns as there leaves upon the plant.

No animal will browse it, not even to eat a single leaf.

It grows rapidly and will make a perfect hedge against man or beast in four or five years.

It is perfectly hardy, as has now been well proved on our own premises.

We offer for sale 25,000 fine plants. Price \$10 per 1000.

BISSELL & HOOKER,

[3-2t] Commercial Nurseries, Rochester, N. Y.

Premium Dahlias.

THE subscribers offer for sale this Autumn and the ensuing Spring, 10,000 Dahlia Roots, which have proved to be the choicest collection in the States and Canadas. [See records of the Fairs for the last four years.]

Persons commencing the Nursery business, and Amateurs, will find it to their advantage to give us a call, or make enquiries before purchasing elsewhere.

C. J. RYAN & CO., Rochester and Charlotte Plank Road Nurseries, Rochester, N. Y. [11-4t]

Superphosphate of Lime.

THE genuine article, manufactured by C. Duburg, in bags of 150 lbs. each. The subscribers have made a contract for a large quantity. We are now prepared to supply any quantity that may be ordered. Farmers and gardeners would do well to call on us before purchasing elsewhere, as we are now able to sell for a less price than heretofore offered. Every bag is branded "C. Duburg, Extra, No. 1."

LONGETT & GRIFFING,

State Agricultural Warehouse, No. 25 Cliff Street, New York. [11-4t]

MOUNT HOPE NURSERIES.

FRUIT AND ORNAMENTAL TREES.

ELLWANGER & BARRY desire to call the attention of nurserymen, dealers, and planters, to the immense stock of trees now on their grounds, embracing Fruit Trees of every description, viz:

STANDARD APPLES, PEARS, PLUMS, CHERRIES, PEACHES, &c., on free stocks, for orchards, vigorous and well formed.

DWARF and PYRAMIDAL PEAR TREES, on quince stocks. About 5,000, embracing every fine variety that can be worked, two year old trees, low branched, vigorous and beautiful.

DWARF and PYRAMIDAL CHERRIES, on Mahaleb stocks. Fine one, two and three years old trees, well branched and finely fruited.

DWARF APPLE TREES, on Paradise and Doucean stocks. Beautiful two year old trees, with heads, for immediate bearing—besides vigorous yearlings.

GOOSEBERRIES.—Large Lancashire sorts. Strong plants for immediate bearing.

CURRENTS.—Including the Cherry, Victoria, White Grape and many other new and fine sorts. See our Catalogue.

RASPBERRIES.—The new Large fruited Monthly, Fastcliff, &c. &c. A complete collection of all desirable varieties.

GRAPES.—Hardy, native sorts—Isabella, Catawba, Clinton, &c.—strong 5 and 3 year old vines. Thirty varieties of Foreign Grapes, for vineries—strong, thrifty plants, in pots.

STRAWBERRIES of all desirable varieties, and all other fruits cultivated.

RHUBARB.—Genuine Myatt's Victoria, Myatt's Linnaeus, Mitchell's Royal Albert, Downing's Colossal, and hybrids of the above, of our own raising from seed, quite equal to any of them.

The entire fruit department is under our own personal supervision. The best quality of stocks is used, and the most scrupulous attention given to insure accuracy. We flatter ourselves that no nursery collection can offer a stronger guarantee to purchasers, in this respect. The stock is all grown on new, fresh soil, and is healthy, well matured, and hardy. We ask purchasers to examine it.

ORNAMENTAL.—Large trees, for streets, parks, &c., such as Horse Chestnuts, Silver Maples, Sugar Maples, Snowy Aboles, Mountain Ash, Elms, and Tulip Trees, in large quantities, cheap.

RARE ORNAMENTAL LAWN TREES—embracing the most novel, remarkable, and beautiful trees and shrubs, both deciduous and evergreen, that can be grown in our climate. For particulars we must refer to the descriptive catalogue.

ROSES.—One of the richest collections in the country, including the newest and best European varieties, selected by us in person, last summer.

BULBOS ROOTS—imported annually from Holland. DAHLIAS.—The new English and French prize sorts of 1851 and 1852, besides fine older ones.

All articles packed in the best manner, and forwarded to any part of the United States, Canada, or California.

Orders strictly complied with in every particular. The following catalogues are sent gratis to all who apply and enclose stamps to cover postage, which must be prepaid:

- No. 1. A Descriptive Catalogue of Fruits.
- No. 2. A Descriptive Catalogue of Ornamental Trees, Shrubs, &c.
- No. 3. A Catalogue of Dahlias, Fuchsias, Chrysanthemums, and bedding plants.
- No. 4. A Wholesale Catalogue, for nurserymen and others who wish to purchase largely.

Mount Hope Nurseries, Rochester, N. Y., March, 1853.

Evergreen Trees and Shrubs.

The following Evergreens can be supplied by the quantity, at low prices:

- Norway Spruce, from 6 inches to 2 feet.
- American White Spruce, 2 to 3 feet.
- Balsam Fir, 2 to 4 feet.
- Austrian Pine, 1 to 3 feet.
- Scotch Fir, 1 to 3 feet.
- Red Cedar, 1½ to 2 feet.
- American Arbor Vitæ, 1 to 2 feet.
- Chinese Arbor Vitæ, 2 to 3 feet.
- Decodar Cedar, 1 to 1½ feet.
- Chili Pine, (*Auracaria imbricata*), 12 to 18 inches.
- Japan Cedar, (*Cryptomeria japonica*), 1 to 5 feet.
- Lofy or Bhotan Pine, (*Pinus excelsa*), 1 foot.
- Himalayan Spruce, (*Abies morinda*), 6 to 12 inches.

And many other rare species and varieties, forming one of the most complete assortments of Conifers in the United States.

ELLWANGER & BARRY,
Feb. 1, 1853. Mt. Hope Nurseries, Rochester, N. Y.

HIGHLAND NURSERIES, NEWBURGH, N. Y.

A SAUL & CO., in inviting the attention of their patrons and the public in general to their very extensive collection of

FRUIT & ORNAMENTAL TREES, SHRUBS, &c., would respectfully inform them that the stock which they offer for sale the coming spring is unusually fine, both as regards quality of trees, variety of kinds, &c., &c.

The soil and climate of the Hudson Highlands have rendered proverbial the success of the trees sent from here to all parts of the Union, and the accuracy and precision so indispensable in the propagation of fruit trees for which this establishment has long been celebrated, render errors in nomenclature of rare occurrence.

They have propagated in large quantities all the leading standard varieties which are proved best adapted for general cultivation, especially those recommended by the American Hortological Society, as well as all novelties both of native and foreign origin.

To particularly dwell within the limits of an advertisement would be impossible; they refer to their General Catalogue, a copy of which will be sent to all post-paid applicants, on enclosing a Post Office stamp.

The following comprises a portion of their stock, and are all of fine growth, viz:

PEARS in over 400 varieties, both standards on their own stock for orchard culture, and on the quince for dwarfs, pyramids, and queneoile, for garden culture.

APPLES in over 300 varieties, both standards and dwarfs. CHERRIES, both standards and dwarfs.

PLUM, APRICOT, PEACH, NECTARINE, and QUINCE trees, in every variety.

GRAPE VINES, both native and foreign for vineries. Also, GOOSEBERRIES, (50 best Lancashire varieties.) CURRENTS, RASPBERRY, and STRAWBERRY plants, of all leading and known kinds, together with

SEA KALE, ASPARAGUS, and RHUBARB roots.

ORNAMENTAL TREES, SHRUBS, and VINES, both deciduous and evergreen, suitable for street and lawn planting, embracing all the new and rare Conifers, weeping trees, and shrubs of recent introduction.

ROSES in every variety, including Hybrid Perpetual, Hybrid Bourbon, Hybrid China, Hybrid Damask, Prairie, Boursault, Ayrshire, and other hardy climbing and garden varieties, as well as the more tender Tea, China, Bengal, Bourbon, and Noisette varieties.

HERBACEOUS PLANTS.—A large collection of Paeonies, Phloxes, Campanula, Penstemon, (Etonia, &c., &c.)

DAHLIAS and BEDDING PLANTS, for the parterre and flower garden, in large quantities and variety.

HEDGE PLANTS.—100,000 Buckthorn and Osage Orange plants, two years growth; Arbor Vitæ for screens, &c., &c.

Dealers and Planters of trees on a large scale will be dealt with on the most liberal terms.

Newburgh, March, 1853.—21.

North River Ag. Warehouse and Seed Store.

53 CORTLAND ST., NEW YORK.

GEORGE H. BARR & Co. invite the attention of Farmers, Planters, and others, to their large and varied assortment of Agricultural Implements, Seeds, Manures, &c., &c., all of which will be furnished at the lowest prices. Their assortment includes

Plows—All the improved kinds by the most approved makers.

Horse Powers—Of all kinds and sizes, with and without Threshers, &c.

CORN SHELLERS—All the approved kinds, and some of recent introduction.

STRAW CUTTERS—Of all sizes, and kinds, for hand and horse power.

CORN and COB CRUSHERS—Of all kinds and sizes.

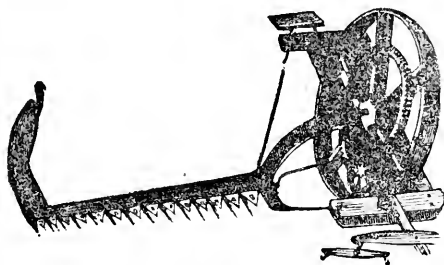
FANNING MILLS, CULTIVATORS, HARROWS, CHURNS of all the approved kinds.

RAKES, HOES, FORKS, and a general assortment of Horticultural and Garden tools.

New York Ag. Warehouse and Seed Store.

THE subscriber has constantly on hand the most extensive assortment of the best and latest improved Agricultural and Horticultural Implements, and Field and Garden Seeds, ever offered for sale in the United States, embracing every Implement, Machine, or Seed desirable for the planter, farmer, or gardener. Also, Guano, Bone Dust, Poudrette, Plaster of Paris, and Superphosphate of Lime.

R. L. ALLEN,
March, 1853.—31. 189 & 191 Water St., New York.



KETCHUM'S PATENT MOWING MACHINE.
Howard & Co., Proprietors & Manufacturers,
BUFFALO, N. Y.

THIS justly celebrated machine has been steadily advancing in public favor, for its simplicity, durability and efficiency—and it has settled the question beyond a doubt that grass can be cut by Horse Power; for during last season, five hundred of these machines were sold by us, and universally approved of by those who used them. Farmers were daily in the habit of cutting from ten to fifteen acres per day, with ordinary driving. It leaves the grass uniformly spread over the ground, requiring no turning to cure properly. In the Report of the Committee who served at the Trial of Mowing and Reaping Machines, held at Geneva in July last, they show fully and conclusively *this to have been the only machine in the field which cut its allotted two acres without clogging or any interruption*, doing its work admirably, and in far better manner than can be done by manual labor with a scythe. Our knives are not *sickle-edged*, consequently do not clog at every little hummock or bog they may happen to come in contact with. The Committee also show that there is an actual saving, by the use of this machine over hand labor, of \$13 per day. We have only to refer those who want a perfect Mowing Machine to examine the Report and judge for themselves. This machine took the first premium as a mower, at the trial in Springfield, Ohio; a gold medal at the Fair of the American Institute, N. Y., also, first premium at the Provincial Fair at Toronto, C. W.

They are so very compact that one of them can be easily carried in an ordinary one-horse wagon, and so very simple that it requires no machinist to put it together, as there are but two bolts (beside the pole bolts) to be secured to have the machine ready for use, and which does not require over ten minutes time. They weigh about 750 lbs., and can be worked by any boy who can manage a team. We have made all the improvements suggested by experience in the way of strength, durability, &c., and sell them under the following warranty: That said machines are capable of cutting and spreading, with one span of horses and driver, from ten to fifteen acres per day, of *any kind of grass*, heavy or light, wet or dry, and do it as well as is done with a scythe by the best of mowers. They are equally capable of cutting barley, buckwheat, millet, &c. It is much less trouble to keep the knives in order than a scythe, as they have frequently been known to cut from ten to fifteen acres without sharpening, which can be done on an ordinary grind-stone in a few minutes. We can give any reference required, for the full performance of our machine, as above stated.

Orders should be sent in early, as we shall manufacture but a limited number. The price of our machine, including two sets of knives, extra knife blades, wrench, &c., is \$110, cash, in Buffalo, the machine to be delivered on board of boat or cars free of charge.

Office and shop, corner of Chicago street and Hamburg canal, near Eastern R. R. Depot, Buffalo.
March, 1853—*lf*. HOWARD & CO.

J. RAPALJE & Co., are sole agents for the sale of the above machine in Rochester, which they will sell at manufacturers' prices.

Manures.

FERTILIZERS of all kinds for sale by the subscribers. Improved Superphosphate of Lime, Superphosphate of Lime—both the above made after the recipe of Prof. Mapses. Peruvian Guano, Sulphuric Acid, Bone-dust, Potash Sparlings, Pondrette, Plaster of Paris, &c., &c.
GEO. H. BARR & CO.
53 Cortland St., New York.

EMERY'S MOWER AND REAPER.

THE subscriber, not only having made himself practically acquainted with the construction and working of all the successful machines of this class, but having made and successfully introduced several valuable improvements in some classes of agricultural machinery, which have already gained favorable and world-wide reputation and adoption, flatters himself that he has also made an improvement in the construction of a Mower and Reaper of equal if not greater merit, than any of his former improvements.

It will suffice to say, that while this is the most compact, light, simple, cheap, durable, easy working machine, it is at the same time the most perfectly adjustable, and easily convertible into a Mower or Reaper, working as perfectly in either form as those of the best other kinds, whether simple or combined. The frame itself is so suspended upon the axis of the main wheel, as to be elevated and depressed at pleasure, so as to secure a horizontal or inclined (forward or back) position of the whole machine, at whatever elevation used, thus always having the cutting works in proper position.

In reaping, a reel is used, and the raker stands erect, face forward and directly behind the platform, with a support about him; the movable platform being on the same plane with the frame-work at the side of the discharge, and at the same time about two inches above the stubble. With the above introduction, and the diagrams to follow, together with those in this number of the Genesee Farmer, the public will have before them several machines from which to make a selection before purchasing for the coming season, and at the same time know what they are purchasing, much better than to be guided alone by impracticably written and published reports of committees of public trials, and be enabled to purchase only such articles as have their practical as well as theoretical merits plainly pointed out, or if not so pointed, to purchase only of responsible manufacturers, who are willing to back their machines by their reputation and capital.

For further particulars concerning the Reaper and Mower above described, address

HORACE L. EMERY, Albany, N. Y.

March, 1853.

E. D. HALLOCK, No. 50 State street, Rochester, is agent for Western New York, and will have one put up in running order in his store. Those in his vicinity wishing to obtain a Reaper and Mower, are requested to call and examine the merits of the above machine before purchasing elsewhere.

Superphosphate of Lime.

THIS extraordinary fertilizer, the effects of which as a manure and general assistant to soils, has proved itself invaluable to the agriculturist. This most important constituent of the soil is being daily removed and taken up in solution by plants, and unless such substance be returned fertility must decrease and the land become poor, its promoting and pushing power of growth giving strength to young plants while in their tender state and fortifying them for early maturity, exceeds over all other manures. It is some ten years since its introduction in England, where, from its pronounced *magic effects*, its introducer received a patent right from the English government.

The progressive high repute of its properties has caused the demand to increase each year. At the present time some thousand tons are annually sold to the farmers.

The subscriber has had much experience in the peculiar manufacture of this manure in Europe, which leads him to suppose that he stands unequalled by any competitor. Some considerable quantity was sold last season and tried on various crops, the beneficial results of which has caused orders for forward delivery in the coming spring to a large extent. Being in a powder, it is easy in handling, may be drilled in with seed, sown, &c.

To prevent deception being practiced, all packages will henceforward be branded with the maker's name. For sale at the following Agricultural warehouses:

LONGETT & GRIFFING,

25 Cliff St., New York,

E. L. ALLEN, (late A. B. ALLEN & Co.)

189 Water St., New York,

where purchasers may be sure of obtaining a chemically pure and genuine article.

Enquire for C. B. DeBurg's No. 1 Superphosphate of Lime. [3-31]

Northern N. Y. Live Stock Insurance Company, Plattsburgh, N. Y. For terms, please apply to agents of the Company.

**THE HORTICULTURIST,
And Journal of Rural Art and Rural Taste.**

THIS is a Monthly Journal of 48 pages, beautifully printed on the finest paper, and elegantly illustrated, making one of the most beautiful Monthly Magazines published in the world. It is devoted to Horticulture, in its various departments, Rural Architecture, and to all that concerns Rural Life, and to the cultivation of Rural Taste.

It is edited by P. BARRY, so long known and esteemed as the Horticultural Editor of the *Genesee Farmer*, and published at the low price of \$2 per year. A discount of 20 per cent. allowed to agents. JAMES VICK, Jr., Publisher, Rochester, N. Y.

**NEW YORK AGRICULTURIST,
AND FARM AND GARDEN.—PREMIUMS FOR
SUBSCRIBERS—626 PRIZES, AMOUNTING TO
\$5,355.—**While we are anxious to have our friends interest themselves in extending the circulation of our periodicals, we do not desire that they should labor without compensation. We, therefore, have made out the following premiums to those who will act as our Agents.

To the person sending us the largest number of subscribers, (and not less than 500,).....	\$500
2d highest, (and not less than 250,).....	250
3d highest, (and not less than 100,).....	100
4th highest, (and not less than 75,).....	75
5th highest, (and not less than 60,).....	60
6th highest, (and not less than 50,).....	50
7 next highest, (not less than 40) \$40 each.....	200
10 next highest, (not less than 30) \$30 each.....	300
15 next highest, (not less than 20) \$20 each.....	300
30 next highest, (not less than 15) \$15 each.....	450
60 next highest, (not less than 10) \$10 each.....	600
500 next highest, (not less than 5).....	2,500

626 prizes, amounting to..... 5,355

Subscriptions to the *Agriculturist* to be at \$2 a year, and to the *Farm and Garden* at \$1 a year. Two subscribers to the latter to be equivalent to one to the former. Subscribers for a shorter period to be counted proportionably, and the money in all cases to accompany the subscriptions.

The names to be forwarded as fast as they are obtained, with a note stating that they are sent for competition. The lists to be closed January 1, 1854.

THE UNSUCCESSFUL TO BE PAID.

To all persons who may be unsuccessful in obtaining a Premium,

WE WILL PAY A COMMISSION OF 25 PER CENT.

Specimen numbers will be forwarded to all desiring them, on application, postage paid, to the undersigned.

ALLEN & CO., Publishers,
April, 1853.—It. Nos. 159 and 191 Water-st., N. Y.

Land for Sale.

BY virtue of a deed of trust executed to me by James Boyd and Elizabeth his wife, to secure the payment of a sum of money therein expressed, I shall proceed to sell on THURSDAY, the 22d of April next, at public auction on the premises, for cash, a tract of Land lying about 4 miles from James River, on Chepooke Creek, in the county of Prince George, called and known as the WHITE HOUSE, containing about six hundred acres, and bounded on the East and South by Chepooke Creek, on the West by the land belonging to Mrs. Davidson, and on the North by the lands belonging to Wm. L. Shaekleford, and lately owned by E. Fellers; being the same tract of land conveyed to said James Boyd by John D. Mathews and wife.

There are about three hundred acres of cleared land, a portion of which has been marled, and lies well for farming purposes, and contiguous to the finest marl banks.—The buildings consist of a Dwelling House, two stories high, with four rooms and a passage; Kitchen, Smoke house, Barn, and Stable which can be put in good order at small expense. There are two Mills contiguous, one of them a Flouring Mill. Chepooke Creek abounds in fish and wild fowls. Any person desirous of viewing the land will be shown it by Mr. Wm. Boyd who resides on it. The title is believed to be indisputable, but I shall convey only such as is vested in me as Trustee.

April, 1853.—It. JNO. ARMISTEAD.

Standard Pears.

PARSONS & CO., Flushing, near New York, offer for sale a large assortment of Pear trees upon Pear stock, of various sizes, including the finest varieties. Their general Catalogue of Fruit and Ornamental Trees, Roses, &c. forwarded on application by mail. [4-24]

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2,000 Virgalien Pear Trees.

TWO years old, grafted on seedling stocks, 4 to 6 feet high, \$35 per 100, \$300 per 1000.

Osage Orange, 1 year old, \$1 per 100 \$8 per 1000
Red Cedar, 1 foot high, \$5 per 100, \$40 per 1000.
American Arbor Vitae, 1 foot high, \$3 per 100, \$25 per 1000.
Horse Chestnuts, Elm, Sycamore, Basswoods, Maples, &c., suitable for street planting.

EVERGREENS.—Balsam Fir, Norway Spruce, White Spruce, Red Cedar, American Arbor Vitae, &c., of large size and fine form.

And a general assortment of Fruit and Ornamental Trees, Shrubs, Roses, &c., &c., for sale by the subscribers at their Nursery in Waterloo, Sen. Co., N. Y.

Orders solicited from all parts of the country.
[4-14] DELL & COLLINS.

The Practical and Scientific Farmer's own Paper.

**THE GENESEE FARMER,
A MONTHLY JOURNAL OF**

AGRICULTURE AND HORTICULTURE,
ILLUSTRATED WITH NUMEROUS ENGRAVINGS OF
Farm Buildings, Domestic Animals, Implements, &c.

VOLUME XIV, FOR 1853.

DANIEL LEE, JAMES VICK, JR., & JOSEPH HARRIS, EDITORS.

P. BARRY, Conductor of Horticultural Department.

Fifty Cents a Year, in Advance.

Five Copies for \$2—Eight Copies for \$3, and any larger number at the same rate.

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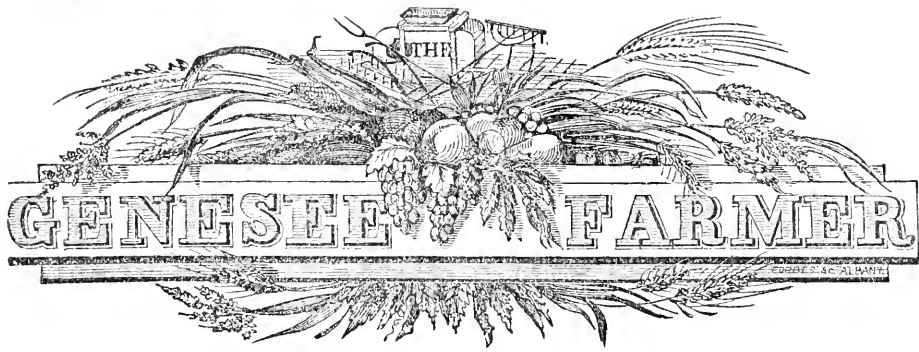
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STEREOTYPED BY J. W. BROWN, ROCHESTER, N. Y.



VOL. XIV.

ROCHESTER, N. Y., MAY, 1853.

No. V.

THE TRANSFORMATION OF VEGETABLES INTO MILK AND FLESH.

AGRICULTURAL physiology in its application to the production of milk and meat, has received very little attention in this country; nor has it been possible during the last thirty years to introduce the study of this branch of rural economy into any educational institution in the United States. Hence very few facts exist to form the basis of any argument which we may offer, drawn from experience on this side of the Atlantic; and we are constrained to go to Europe for our data and collateral evidence.

When a cow is in full flow of milk, what is the relation that subsists between the amount of food consumed and the matter voided as dung, estimating both free from water?

Under the patronage of government, Dr. THOMPSON, of Glasgow, experimented on two cows, both near six years of age; one a speckled Ayrshire, and the other a fair brown native of Scotland. His first experiments commenced June 10th, and continued fourteen days. The Ayrshire weighed 994 lbs.—the brown cow 967½; and to each was fed 1426 lbs. 12 oz. of green rye grass, which was consumed, being a small fraction less than 102 lbs. a day by each. Seventy-five per cent. of this grass was water; so that 356½ lbs. of dry matter entered the stomach of each cow in 14 days. As voided, the dung of the brown cow weighed 1049 lbs. 2 oz. 2 drs.; and that of the white cow (Ayrshire) 1000 lbs. 7 oz. 9 drs. Thoroughly dried, that of the brown cow weighed 147 lbs.; and that of the white cow 140 lbs. These facts show that a half pound of solids taken into the stomach of the Ayrshire cow passed through the walls of the intestines into the blood vessels every 24 hours more than took place in the system of the brown cow. In round numbers, each cow eat 25 lbs. of dry forage in 24 hours; from which one extracted, by superior digestive and absorptive power, 12½ per cent. more aliment which passed into the circulation of her blood, than the other. This gain in nutritive matter in the Ayrshire appeared not in an increased flow of milk, as one might not unreasonably expect, but in flesh; for she added 40 lbs. to her weight in 14 days, it being nearly 4 lbs. a day, and 1 lb. live weight gain to 6¼ lbs. dry food consumed. In addition to this gain in flesh, the white cow yielded 304 lbs. 13 oz. 2 drs. of milk; from which 8 lbs. 2 oz. of butter were separated in 14 days. The brown cow gave 342 lbs. 14 oz. 1 dr. of milk, and gained 18½ lbs. in weight. From her milk was extracted 11 lbs. 4 oz. 4 drs. of butter. It will be seen that while the brown cow yielded 3 lbs. 2 oz. more butter than the white cow, the latter gained 31½ lbs. more flesh than the former.

It is idle to attempt to separate the flesh-forming from the milk-forming functions of dairy stock, as a practical and economical question. That stock is most valuable whose digestive and assimilative powers give the largest return for the food consumed, whether

in milk or beef. BOUSSINGAULT'S cow, being larger than Dr. THOMPSON'S, consumed 28 lbs. 1 oz. 1 dr. (dry weight) of aftermath hay and potatoes, every 24 hours, and voided 10 lbs. 8 oz. 12 drs. (dry weight) as excrements. These experiments prove that considerably more than half of the matter taken into the system as food passes into the general circulation, and is not voided by the bowels. Whether a large or a small cow, other things being equal, will separate the greater amount of aliment from any given quantity of food, has often been debated. BOUSSINGAULT believes that large cows, properly fed, yield a better return than small ones; the subject, however, needs further investigation. On scant pastures, all concede that small cows pay best.

It is interesting to inquire how the matter that escapes as dung compares in its chemical elements with that which was consumed as food. Each of the cows kept by Dr. THOMPSON consumed $161\frac{3}{4}$ lbs. of carbon in grass in 14 days. In the dung of the brown cow there was found 67 lbs.; and in that of the white cow 64 lbs. These figures show an absorption by the lacteals which surround the intestines, and convey aliment to the heart, of $94\frac{3}{4}$ lbs. of carbon in the white cow, and $91\frac{3}{4}$ in the brown cow.

Of nitrogen each cow consumed $6\frac{1}{2}$ lbs.; and while the dung of the Ayrshire contained $2\frac{1}{2}$, that of the brown cow contained 2 7-10 lbs.

Of oxygen, the food consumed contained 148 lbs.; the dung $54\frac{1}{2}$ in the brown cow, and 52 in the white cow; showing that in the former $93\frac{1}{2}$ lbs. entered into the blood vessels; and in the latter 96 lbs.

Of incombustible mineral, (ash) $18\frac{3}{4}$ lbs. were consumed by each cow; of which the dung of the brown cow exhibited $14\frac{1}{2}$ lbs., and that of the white cow $13\frac{3}{4}$ lbs.

Of water, the dung of the brown cow contained $902\frac{1}{2}$ lbs., and that of the white cow 860 lbs. Cows, especially when giving milk, are large consumers of water. BOUSSINGAULT'S cow while subsisting on potatoes and hay, drank 132 lbs. in 24 hours. In the potatoes there were 23 lbs. 12 oz. of water; and 2 lbs. 9 oz. in the hay. Of the 158 lbs. 5 oz. of water daily consumed, 53 lbs. 10 oz. escaped in dung; 15 lbs. 14 oz. in urine; 16 lbs. 3 oz. in milk; and 72 lbs. 10 oz. by the lungs and cutaneous transpiration. One can obtain some idea of the freedom with which water passes through the apertures in the walls of all cells, as well as along the tubes of all vessels, whether lacteals, lymphatics, veins, or arteries, when he is told that lean meat is three-fourths water.

To aid nature in dissolving the solids taken into the digestive apparatus, is a point of great importance to the stock-grower and dairyman; but instead of being at the expense of grinding corn and other grain for cows, fattening cattle and swine, we have found reason to believe that cooking without grinding pays better, especially where grain is cheap. Probably 100 lbs. of corn boiled soft will yield three or four per cent. less nutriment to the blood than the same corn made into meal and then cooked and fed as mush; but it will cost the farmer, generally, a little more than four per cent. of his corn to get it ground ready for use. It is good economy to steep in boiling water, hay, cornstalks, and other dry forage, unless both meat and food are very cheap. After one has provided a full supply of the raw material to be transformed into milk and flesh, including fat, and taken due pains for its solution in the gastric juices and other liquids in the alimentary canal, he should carefully study every organ and its function in the animal system, that he may trace the course of the nutrient atoms to their final destination, as they pass from the intestines into the lacteal tubes and thence into every tissue. In healthy animals, the kidneys operate very successfully to purify the blood, and free it of surplus salts and urea. Perspiration and respiration are functions of equal importance to the health of animals. BOUSSINGAULT found 8 oz. 7 drs. of carbon in the urine of a cow voided in 24 hours; and 1 lb. 6 oz. of salts. Eight pounds three ounces of carbon entered the blood vessels in 24 hours from the organs of digestion in BOUSSINGAULT'S experiments; of which 1 lb. 3 oz. 3 drs. appeared in milk, and, as

above stated, 8 oz. 7 drs. in urine. These figures indicate that 6 lbs. 2 oz. 6 drs. of carbon escape in the form of carbonic acid from the lungs, less by the small amount that passes off through the skin. As the quantity of carbon taken into the system was 12 lbs. 10 oz. 13 drs., it will be seen that one-half of all that enters the stomach is literally burnt up to keep the body warm; and of that taken up by the lacteals, three-fourths are so consumed. To supply eight or ten pounds of soluble organized carbon a day in the food of a cow, ox or horse, demands the best lights of organic chemistry. If different animals give very unlike results, when fed in every respect alike, different alimentary substances are still more variant in their nutritive powers and value, and equally deserve close investigation. Anatomy, physiology and chemistry are dry subjects to the uninitiated, but become interesting as one advances in them, and sees their direct bearing on skillful husbandry.

SUPERPHOSPHATE OF LIME.

WE had supposed our readers would ere this have been tired of the very name of superphosphate of lime, but from the many inquiries we have recently received respecting its manufacture, its real value, the crops which it most benefits, and the best manner of application, we perceive that it is engaging the attention of some of our most intelligent farmers, and that much ignorance and uncertainty prevails respecting it.

Phosphate of lime is composed of phosphoric acid and lime. Phosphoric acid enters into the composition of every plant that is grown for food; it composes one-half of the ash of wheat, maize, timothy seed, &c., &c. In conjunction with lime, it forms greater part of the bones of men and animals. It will therefore be seen that phosphoric acid is an element of great importance in an agricultural point of view; and when it is remembered that soils, though of the most fertile character, contain but a relatively small proportion of phosphoric acid, its manurial value will be clearly understood.

Phosphate of lime, as it exists in bones or in any of the mineral compounds, is *insoluble in water*. As plants take up all their food in solution, it is necessary to convert, by decomposition or otherwise, this insoluble phosphate into a soluble one. Bi-phosphate of lime is soluble in water. That is to say, a compound containing two atoms of phosphoric acid united with one of lime, is soluble in water; while phosphate of lime, or a compound having but one atom of phosphoric acid united with an atom of lime, is insoluble. The question then is, how shall we convert the phosphate into a bi or superphosphate of lime? In the laboratory the change can be effected by adding phosphoric acid to phosphate of lime; but this is too expensive a process to be applied to agriculture. Another method, and the one adopted by the manufacturers of superphosphate of lime, is to take away a portion of the lime of the phosphate of lime, setting free the phosphoric acid combined with it. This free phosphoric acid unites with the remaining phosphate of lime, and forms the required bi-phosphate of lime. This is accomplished by adding sulphuric acid to burnt bones or any phosphate of lime substance. Sulphuric, being a stronger acid than phosphoric, takes away the lime and sets the phosphoric acid free, which, as we have said, unites with the remaining phosphate of lime, forming the soluble phosphate required.

Phosphate of lime is worth about seven mills per pound, as it can be purchased at that price in most of our principal cities in the form of animal charcoal. Bi-phosphate of lime is worth about eight cents per pound. We do not say that farmers can purchase it for that price, but they can manufacture it themselves for a little less than that, and eight cents per pound is the estimated value in England, where it is extensively used.

We have so repeatedly within the last three years given our views respecting the efficacy of this manure, that our correspondents must excuse us for stating them in as few words as possible, and without giving the reasons on which our opinion is founded. We think, then, that under no circumstances is it good economy to purchase superphosphate of lime as a manure for wheat, barley, oats, potatoes, timothy, or old meadow grasses. If your soil is deficient of phosphoric acid, supply the deficiency with phosphate of lime at seven mills per pound, and not with bi-phosphate at eight cents; for though phosphate of lime is insoluble, yet by decomposition, &c., it is gradually rendered available for the plants. The only crop for which we can confidently and conscientiously recommend a farmer to purchase superphosphate of lime, is the *turnip crop*. On turnips, (*ruta бага*, mangels, beets, &c.,) this manure, when drilled with the seed, has a most magical effect—in many instances which we have seen, increasing the crop ten-fold. On clover, peas, &c., it does much good; but we think it will not *pay* on these crops. For Indian corn we cannot speak experimentally, but, reasoning *deductively*, we most confidently believe it will do little good, and certainly will not pay to use.

As a manure for turnips, we consider—in fact, we know—that any addition of sulphate of ammonia, guano, or anything that will injure the germinating principle of the seed when drilled with it, is a manifest detriment to the article; and we are sorry that those parties who at first manufactured plain superphosphate of lime, have been induced to follow the so-called improvements of other manufacturers, however influential. We would say to these gentlemen, manufacture a good superphosphate from *finely ground* animal charcoal, and sell it as low as you can afford; recommend it only as a manure for turnips, pumpkins, squashes, lettuce, young trees, &c.; and you will be entitled to the thanks of the agricultural community. But do not attempt *improvements*, nor recommend it for wheat, corn, &c.; for after you have done all, you can not make it equal, for these crops, to good Peruvian guano.

An easy method to determine the value of superphosphate of lime, is to take 100 parts, rub it well with distilled water added in successive quantities till everything soluble in water is dissolved, filter, and evaporate the clear liquid to one-third its bulk, add a little chloride of calcium, then precipitate by adding ammonia. This precipitate heated to redness should weigh 18 to 20 per cent. of a *good* superphosphate; if much less than this, it is an inferior or adulterated article.

SPRING WORK.

Indian Corn.—Perhaps there is no crop that an American farmer cultivates about which so little is known as that of Maize. It is indigenous to the New World. It grows on the poorest sands, on the most tenacious clays, on granite rocks and rich alluvial bottoms. In some of the Southern States of the Union it is planted in January, and in the Northern ones in June. In every clime—on every soil, in this vast continent, Indian corn grows, as it were, spontaneously without the culture, care and attention of the planter. *The ease with which it is produced is probably one of the principal reasons why we have neglected to study its peculiar requirements.* Its importance all admit. Its seed is the most nutritious of all the cereals, while its stalks are of incalculable value as food for cattle during our long winters. Experience has taught us a few things respecting the physical requirements of the maize plant. It does not require so tenacious or compact a soil as the wheat plant demands. It delights in a loose, friable, warm, porous, deep soil, abounding in rich nitrogenous organic matter. It does well on all good wheat soils; yet it often does best on soils that will not produce good wheat.

If we furnish the wheat plant with all its manurial elements in the greatest profusion,

we cannot *average* more than fifty bushels of wheat per acre. By giving the maize plant all the fertilizing food it could assimilate, it is probable that we might average one hundred and ten bushels of shelled corn per acre. We can easily make a soil too rich for wheat. It would be rather difficult to give corn too much food, provided it is of the proper kind. How far it might be profitable to manure highly for corn with guano is yet a matter of uncertainty. There cannot be a doubt, however, that it is the interest of every farmer to make and apply all the fertilizing matter he can. Many of our Western farmers will tell us that it does not pay them to apply manure to corn. It perhaps does not the first crop, but in the long run he who makes most manure, will make most money. This is universal experience. We like to turn under a good sod fourteen inches deep in the fall for corn. If plowed in the spring the sod should be well buried, so as not to interfere with the necessary hoeing, &c. As a general rule, subsoiling answers better for spring crops than deep plowing. Many intelligent farmers do not plow their corn land till just before planting; they have thus considerable grass to turn under, and the soil is in first-rate working order. It is also said that the worm will feast on this recently buried vegetable matter, and will not attack the corn plant till it is well started, and so large as to receive little or no injury.

Plant early—the earlier the better, if the weather is warm and the soil in good order. More corn is injured from late ripening and early fall frosts than any other cause. It is possible to plant corn too thick. We have seen crops materially injured in this way, more especially in not ripening in proper time. Three feet apart each way, and four plants in a hill is the usual practice. It is better to plant too much seed in the hills than too little, as it is easy to thin them to the proper number the first hoeing. In preparing the seed it is common in this neighborhood to smear the corn with tar and dry it with plaster; this is said to prevent the crows from injuring it. Last year a friend of ours who feared injury from worms, smeared his seed corn with tar, and then put a half pound of flowers of sulphur, instead of plaster, to each peck of corn. The worms, though the lot was full of them, did not injure it in the least, and he had an excellent yield. Be careful not to cover the seed too deep; the shallower all seed is buried, so that *light is excluded*, the better. Mark out the lot both ways, so as to insure straight rows; the corn lot not only looks much better when the rows are straight in all directions, but you can horse-hoe much closer without risk of cutting up the hills.

You, of course, have saved a sufficient quantity of your own pumpkin seeds, selected from the best pumpkins. Do not spare it. Mix, at least, a quart of pumpkin seed with each peck of seed corn, and thin out if you think them too thick. Plant the corn in four feet rows, rather than not have a good crop of pumpkins—if for nothing else, it would pay to grow them to rot on the land for manure, but they are excellent food for hogs and cows in the fall. If plaster is obtainable for five dollars per ton it will pay to scatter a table-spoonful on each hill, when the corn is just through the soil. The beneficial effects are often times astonishing.

Will our intelligent practical correspondents give us their views in time for publication next month on the relative advantages of hilling up corn, or letting it remain as planted, merely keeping it clear by horse and hand-hoeing?

Mangel Wurzel deserve far greater attention from American farmers than they have yet received; they are as well adapted to the climate as any other root crop; they are not injured by insects or worms; they require no hand-weeding; and more nutritious food can be obtained from an acre of mangel wurzel than any other crop we are acquainted with. They should be planted in rows 30 inches apart, and from 12 to 15 inches in the rows. The seed can be dropped and covered with a hoe just as in planting corn. It is advisable to drop four or five seeds in a hill, so as to insure *one good plant*. Do not, on any account, be tempted to leave them too thick; have the rows, at least, two feet a part, and only one plant each 12 or 15 inches in the rows. Like Indian

corn, mangels are gross feeders, and it is almost impossible to have the soil too rich for them. Let the soil be well manured with well rotted dung or compost, and then if you can drop a pinch of superphosphate of lime in the hill *with the seed* it will give them a first rate start, and you may expect a good crop of thirty tons of bulbs per acre. Sow from the middle to the end of May.

Ruta Baga.—First and last, much has been written and said for and against ruta baga culture in this country. Many have condemned them untried, or at least with an imperfect trial; others think they will answer well in this climate, but that labor is so high it will not pay to grow them. We hope yet to see them and mangel wurzel as extensively cultivated here as in Great Britain, believing that the production of good crops of wheat and corn is intimately connected with the amount of roots, clover and peas grown and consumed on the farm. Ruta baga can be sown in June in the same way as recommended for mangel wurzel. Be careful not to cover the seed too deeply; more seed is lost in this way than in any other. By using superphosphate with the seed you may be sure of a crop.

Potatoes.—As soon as you can distinctly see the rows, run the horse-hoe through them, but do not go too close the first time. Nothing like taking weeds in hand in good season—not half the labor is required to kill them when young as when allowed to grow strong and cover the ground. Unless the soil is very light and sandy it is impossible to stir it too much. The idea that a good loamy soil looses ammonia or any valuable gases, or in fact any thing except water, is undoubtedly unsustained by fact. Whether soil has the power, to any great degree, of attracting fertilizing gases from the atmosphere, is yet a matter of uncertainty. One thing, however, is certain, that if stirring and exposing the soil to the atmosphere does not absolutely increase its ammonia, &c., yet they greatly assist disintegration and decomposition, and thus greatly increase the available organic and inorganic food of plants. Nothing can be more erroneous than the idea that weeds shade the ground and keep it moist in a dry time. It has been proved by experiment that an acre of clover throws off daily 8,600 lbs. of water. Every one knows how much sooner a bed covered with strawberry plants will be reduced to a dry powder than one not cultivated. Weeds act in the same way—instead of keeping the ground moist, they pump up the water and evaporate it with great rapidity.

GREEN CROPS FOR BARN USE IN SUMMER.

It is the great number of cattle that a British farmer keeps on his farm which by furnishing so much good manure enables him to raise such good crops. The turnip crop, occupying one-fourth his farm, furnishes him the grand means of keeping so large a stock during the winter months; and the practice of soiling his horses and cattle, enables him to keep more animals than he otherwise could during summer.

By soiling is meant the system of feeding cattle in sheds and stables on green food grown for the purpose, instead of allowing them to graze the fields at pleasure. That more food can in this way be obtained per acre, few will question. That we can adopt soiling, except in some few cases near large cities, admits of some doubt. One of the great objections to the practice is the greater amount of labor required in mowing and carrying to the barn the green food, than in letting the cattle cut it themselves. Another objection is that our climate is not so well adapted for the production of succulent summer food as the cool moist climate of the British isles. Yet, as we have often said, we obtain heavier crops of red clover than do British farmers, and red clover is there considered one of the best crops for soiling purposes; and could it be grown with as

much certainty and in such quantity as in Western New York, it would be much more extensively used.

We believe it would pay every farmer to take an acre or two of clover, as contiguous to the barn as possible, and manure it highly in the fall or spring. It would be found of great advantage to cut and feed to the horses in the stable at noon, and for an hour or so before turning them into the field in the evening. A few acres so manured and cut *early* would afterwards yield a splendid crop of clover seed; or it might be mown twice, as green food for the horses and cattle.

We do not know what Italian rye grass will do for soiling purposes in our climate; it is certainly worthy a trial. If any of our readers have had any experience with it, they would greatly oblige by giving us their views.

Indian corn is perhaps the best food that we can grow for green food in summer. It stands drouth better than any other crop; and if the soil be rich, an immense amount of nutritious food can be obtained per acre—certainly more than from any other summer crop. For this crop the soil should be either naturally very rich or be well manured. Let it be prepared as you would your other corn land. The deeper it is plowed, and the mellowier it is made, the better. *Four bushels* of seed should be sown broadcast per acre, as soon after corn planting as possible. If the soil is moist and in good, fine order, soak the seed corn for twenty-four hours previous to sowing. In this way it will be up in two or three days, and will get the start of the weeds; and if the corn is sown thick, and grows well, it will smother them all, and leave the land in good condition for the following wheat crop. Perhaps, however, it would be best to sow the corn in rows twelve or fifteen inches apart, and hoe it once or twice; the corn would grow more rapidly, and the soil would be cleaner.

Lucerne answers well for soiling purposes, but its cultivation is attended with considerable labor in keeping the soil free from weeds. It is a perennial plant, and does not reach its full growth till the third year. On a rich, sandy loam, well under-drained, plowed, and subsoiled, immense crops of lucerne can be grown. Guano is a splendid manure for this crop, and possesses the advantage of being free from weeds. Lucerne is sown early in the spring, in rows from one to two feet apart; eight or ten pounds of seed per acre. It must be frequently hoed and kept free from weeds, and should be cut but once the first year; in after years it will afford three or four crops in a season.

EDITORIAL CORRESPONDENCE.

FARMING NEAR WASHINGTON.—We learn from the *National Intelligencer* that Mr. CHARLES B. CALVERT has been offered \$50,000 for two hundred acres of his farm, and refused to take the money. Two hundred and fifty dollars an acre is a high price for farming lands, and it is only in consideration of valuable buildings and other improvements that one would be justified in paying any such sum. Riverdale, (as Mr. CALVERT'S estate is called,) contains but little less than three thousand acres, and lies north east of Bladensburg, extending from the village between three and four miles up a beautiful valley, watered by a fine mill-stream. The father of the present proprietor was a large tobacco grower, and most of this plantation has been much worn by this scourging crop, when often repeated on the same field. At present, the farm is mainly devoted to dairy purposes, producing milk and cream for the largest hotel in Washington, and a surplus for the market. The cows kept are the Short Horns, Ayrshires, Alderneys, and their crosses with the best native milkers. Hay is too valuable in the Metropolis to feed to cows in winter, as Mr. C. believes, although milk sells at eight cents a quart. Turnips, shorts, cut straw and cornstalks are more economical food, so that most of the hay grown at Riversdale is sold off the farm. It is a little remarkable how few understand the art of growing large crops of grass and hay in the United States. The quite unexpected and prodigious decrease in the number of sheep, cows, working oxen

and horses in the State of New York from 1845 to 1850, can only be accounted for by conceding the inability of the land to keep them, without more skill than has been applied to that purpose.

Mr. CALVERT'S does not come up to our ideal of what a grazing farm ought to be made. He, however, is soon to introduce extensive irrigation by steam power, and should his life be spared to three score years and ten, a model farm may be seen in Prince George's county, Maryland. A new octagon barn one hundred feet in diameter has recently been erected by him, having a skylight in the center, with ample storage for turnips and forage over the first story, which is devoted entirely to stalls for cows. These stand in two rows quite round the building, leaving an open center-space of thirty-two feet in diameter. Mr. C. prefers the ground to plank floors for cattle to stand upon, which is kept clean and smooth, and generally bedded. A horse and cart may be driven round behind all the cows in the stable for taking up manure; and so much of the urine as is not absorbed by the straw and other litter, runs into tanks. From thirty to forty thousand bushels of turnips are fed in a year, which are sliced with turnip-cutters. Cows graze in the field in the summer season; although it is believed that soiling is more economical where good land is dear and labor cheap. After the steam engine is made to convey all the manure from the stables to the fields in a liquid state and properly diluted for distribution, soiling will be still more profitable; for a good crop of grass may be cut every four weeks during seven or eight months, in the climate of Washington, with proper irrigation and manuring.

The writer has now seen the opening of four springs in the District of Columbia, and watched the capabilities of the soils and seasons of this region with lively interest. It possesses agricultural resources of a high order, which science and capital are bound to develop at no distant day. Hundreds of immigrants from the Northern States are purchasing farms, or vacant old fields to make them, much to their advantage; and southern markets already experience the benefits of the new impulse given to horticulture, tillage and husbandry, by the new comers. So great has been the demand for timothy and clover seed that the former has sold at \$4, and the latter at \$7.50 a bushel this spring in Washington. Acres of cabbage plants set out in December, are now nearly large enough to gather for market. Clover is as forward at the 10th of April as it is in Western New York by the 10th of May. Lime, plaster, bone dust, and guano, are the amendments purchased by thriving farmers; and the effects of these are generally very satisfactory.

Good cows sell at from \$30 to \$50; oxen at from \$50 to \$150 a yoke. Beef, pork, mutton, lambs, veal and poultry, pay the producer a good profit. Eggs have been 75 cents a dozen, and butter 40 cents a pound; but both are now much cheaper. We have bought our seed potatoes in the country (White Mercers) at 50 cents a bushel, which is 50 per cent. cheaper than we have known them in four years. Corn has also been sold as low as 50 cents a bushel in the District by the quantity.

For making chopped feed, straw, husks, cornstalks and blades sell much higher, relatively, than corn. The increase of population in the District, aided by the more rapid increase of wealth, horses and cows, keeps the demand for forage in advance of the supply. Hence meadows and pastures are objects of great importance; and we think that farmers every where neglect them too much for their own interest. They yield the much needed manure, and should be improved by all.

BRITISH AND AMERICAN AGRICULTURE.

(Continued from Page 113.)

B. I thought a few days since that we were going to have spring on us before we were ready for it, but the last few days have worn a more wintry aspect, and have greatly retarded vegetation. On the whole, however, we have had a remarkably mild winter throughout the United States, and the prospects for fruit and all agricultural and horticultural products was never more cheering. Had we not had a temperate winter, the cattle, in many districts, must have suffered much from "short commons," as the hay crop last year was very poor in some places. In seeding land down for permanent meadows, what grass seed would you sow?

A. In Western New York I know of nothing that answers so well for all purposes as timothy and clover.

B. I thought, perhaps, you might have picked up something in your travels in Europe that would be better for permanent meadows than our own grasses.

A. The English sow a vast variety of grasses on land they intend laying down for grazing purposes, and it is possible that some of these might prove of advantage here, but there is none that, without trial, I would recommend to you. The climate and the nature of farm operations are so different in England to what they are or ever can be with us, that any grass that is of great value to the British farmer would probably be useless here. Thus, vetches are the best crop a British farmer can grow for succulent summer food for "soiling" his horses, milch cows, &c. Immense crops of them can be grown, and they are very nutritious; horses and cattle are exceeding fond of them, and, best of all, they are a good substitute for a summer fallow on heavy land—smothering all weeds, exhausting the soil but little, and leaving the land in first rate condition for the following wheat crop: yet Scotch and English farmers have repeatedly attempted to grow vetches *here*, but *without success*. Italian rye grass is worthy a trial, especially in the Southern States. I think it would succeed well there, but I doubt if it would be of much service here. It is principally prized in England as an early food for ewes and lambs in spring, affording good feed three weeks or a month earlier than clover. It is a good substitute for rye, which formerly was extensively grown for this purpose. When Italian rye grass is once in the ground, it will last for many years. It is destroyed only with great difficulty, and hence should not be sown except for permanent meadow or grazing land.

B. I think hay, when it sells as it has for the past year or two in Rochester for \$12 to \$15 per ton, is about as profitable a crop as wheat, and is attended with less labor and expense. I heard you say some time since, that you were going to sow guano on your big meadow this spring; do you think it will pay? If it will, I would like to get a ton and sow on my ten acre meadow.

A. I cannot tell, but intend trying it. I think it will pay better on grass than on either wheat or corn—inasmuch as hay sells for a proportionally higher price. In England they use large quantities on their permanent meadows, and when I was there hay was only worth \$15 per ton gross; so that if pays them at that price, I think it must pay us.

B. What is guano worth now, and how would you sow it?

A. It is in great demand at present, but I believe they have not raised the price which is \$45 to \$50 per ton for the genuine Peruvian, and I should have no other. Saldana Bay and other cheap kinds are generally as dear as they are cheap. The best way of using it, I should think, would be to make it into a compost with peat or some good loam, and let it lie all winter, spreading it on the meadow early in the spring. This year, however, I cannot do this, and shall sow it broadcast 250 lbs. per acre, in as showery weather as we may chance to have. I have seen where part of a grass field had been sown with guano, and a part not, the cattle would eat the grass on the part guanoed quite close, while there was a good bite untouched on the unguanoed portion. This was probably owing—not as has been supposed, from the guanoed grass being more nutritious, but because it was younger, more succulent and tender, growing with greater freshness and rapidity than the other grass.

B. I once observed the same thing on some grass on which I had spread quite a quantity of old leached ashes; the moss disappeared, the grass assumed a rich, dark color, and the cows eat it closer than on the part not so dressed.

A. From the *Gardener's Chronicle* I should judge that the Rev. Mr. Surrin was the great agricultural lion in England just now. He has revived the old Tullian system of planting and hoeing wheat, &c., and grows immense crops of wheat on the same land each year without manure, simply by forking the land eighteen inches deep, and frequently hoeing it during spring and summer. He is said to have raised eighty bushels of wheat per acre in this way. He finds this method of fertilizing the soil, by forking and hoeing, far more economical than purchasing guano, &c.

B. I saw some accounts of it in the December number of the *Genesee Farmer*. The editor embraced the opportunity to give us a good lecture on the advantages of clean culture and thorough pulverization of the soil, but he did not endorse the statement that these large crops could be grown for any length of time without manure, simply by forking and hoeing the soil.

A. No; Dr. LEE has too long contested the abused idea that we can annually remove from a soil the elements of crops without impoverishing it to endorse such opinions. He has always said of the soil, as poor Richard said of the meal tub, "always taking out, and never putting in, soon comes to the bottom." It appears to me there must be some exaggeration in these statements.

When I was in England, Mr. SMITH's experiments received but little attention, and would probably have received but little now had not Prof. WAY called attention to them—stating that he saw nothing improbable in them, or any thing contrary to what he believed to be true scientific principles. He thought that by constantly and repeatedly exposing the double silicates of alumina and soda existing in clay soils they would attract ammonia sufficient for large crops from the atmosphere; hence Mr. SMITH's success. Now, to my mind, these experiments show nothing of the kind. Admitting that eighty bushels of wheat have been grown per acre according to this method, it does not follow that the ammonia necessary to grow such a crop was all obtained from the air. Many soils contain very large quantities of the raw materials of plants in a latent condition—nitrogen (capable by decomposition of furnishing ammonia), among the number. If a soil contains only a tenth of one per cent., as small a proportion as chemists can *accurately* determine, an acre ten inches deep would contain a ton of nitrogen. Now, by constantly stirring such a soil, admitting in light and air, decomposition would be greatly accelerated—this latent nitrogen would be converted into ammonia, and the plants would flourish accordingly; so that the fact of Mr. SMITH having produced such large crops does not prove that the *atmosphere* is capable of supplying all the ammonia that plants require. I had a letter from a gentleman in England some time since who had been induced to try half an acre of wheat on Mr. SMITH's plan. His is a first rate wheat soil—as good as our Western New York wheat land—resting on chalk. He obtained no more than an ordinary yield—not half as much as obtained annually by Mr. SMITH. This same soil by an application of ammoniacal salts *alone* yields very large wheat crops, and hence contains all the mineral elements necessary for a large crop; so that I see nothing in these facts at all inconsistent with the assertion of the *Genesee Farmer* that though a soil contains great abundance of all the inorganic elements of plants, yet the atmosphere is not capable of supplying ammonia for more than eighteen bushels per acre annually.

B. How is it that summer fallows on good clays so increase the wheat crop? I have frequently obtained thirty-five to forty bushels of wheat per acre on a good summer fallow plowed early in the spring and twice afterwards, with the necessary dragging, &c., and yet on the same soil, if I sow wheat after wheat, I obtain but a small yield.

A. The reason is very evident. There falls sufficient ammonia on an acre of land in a year to suffice for the production of eighteen bushels of wheat. Now, if your soil is destitute of nitrogen and contains a sufficiency of minerals, you can annually grow eighteen bushels of wheat per acre—but no more unless ammonia is artificially supplied. But supposing you summer fallow a good stiff clay, the silicates of alumina, &c., would retain the ammonia of the rain which falls during the year it lies fallowed, and so the next year, instead of having sufficient ammonia for eighteen bushels of wheat, you get sufficient for thirty-six bushels. This, however, would not be the case if the soil did not contain the alumina and soda; hence it is folly to summer fallow sandy soils.

B. Yes; I would never fallow a sandy soil if I could help it; I would grow good crops of clover and then turn them under—sowing the wheat at once plowing and twice cultivating. I think a summer fallow is unnecessary on such soils, if great pains are taken to clean the soil well when it is in corn; it should be horse and hand-hoed till there was not a weed in the field. The corn is greatly improved by the hoeings, and the land is left clean and in fine condition for the next crop.

A. They have had one of the wettest wheat-sowing seasons in England ever remembered. The gentleman I spoke of just now says he waited from the 10th October to the 22d of March for a good day to sow a field of wheat, and having got it in on the 22d it was covered eight inches deep with snow on the 23d. But little wheat has been sown in some districts, and the probability is that we shall be called upon to supply a larger quantity of wheat for the use of John Bull's numerous family than usual. An increased demand will, of course, not lower the price; how far it will tend to enhance it remains to be seen. There is also unusual activity in the wool market in England; prices this last month have gone up ten per cent. Manufactures were never more brisk and prosperous, and from the unprecedentedly low state of the stocks on hand it is *certain* that present prices will be fully maintained, and it is *probable* that they will be much exceeded. Under such circumstances I fully expect a high price for our next clip of fine wool—for though we do not export wool, a rise in the British markets always increases the price here.

DOES PASTURAGE IMPOVERISH THE SOIL?—In your remarks below my communication on page 252, Vol. 12 of *Farmer*, you say: "But let them beware lest the few precious atoms in their soil which form the bones of their cattle and other stock, are not all extracted and either sold or lost before they dream of such a misfortune. The things that really make beef, cheese, wool, and horse flesh, are not so abundant in the surface of the earth, even in the fields of luxuriant clover and timothy of Hornby, as to be perfectly inexhaustible." Now, friend LEE, I had formed the idea from what I had seen, that pasturing land enriched instead of impoverishing its soil. We have many large fields that have grown more and more fertile for the last twenty-five years, and constantly pastured. The application of one bushel of plaster per acre is all the manure aside from what is dropped, that any of our pastures receive, and that they are growing sterile I can hardly believe. What think you of the prairies of the west, the pampas of South America, and the steppes of Asia—are they not growing more and more fertile?—and yet they have been constantly pastured for ages, and not one whole acre in five thousand has ever received a direct application of manure, other than its own decayed vegetable growth. I don't hardly believe yet that the removal of a few hundred pounds of bones, flesh, wool, &c., from fifty acres of pasture will ever impoverish the soil. Hope to hear a little more from you on this subject. WM. H. GARDENER.—*Hornby, N. Y.*

We thank our correspondent for calling our attention to an interesting branch of husbandry. In speaking of the exhaustion of pastures on the farms of Hornby, we had no reference to permanent grazing lands, like wild prairies in Illinois, Brazil, or the steppes of Central Asia. In all cases where all the excrements formed by the food consumed are restored to the soil that produced the food, and also the bones of the animal at its death, (which is Nature's plan for preserving the fertility of land,) no deterioration occurs. But the pastures on which the million of cows in the State of New York graze, are not, as a general thing, treated in the manner indicated. Cows come out of pastures at night with their digestive organs full of grass, and their udders distended with milk, the product of herbage. In the morning they return to their grazing walks with empty stomachs, and minus several gallons of milk. This operation long continued differs very little from cutting with a scythe an equal quantity of herbage, whether clover or timothy, and carrying it out of the field on a wagon or cart, instead of in the body of a cow. Our Hornby friend, however, should know that there is this difference against the depasturing process as compared with what is called the soiling of cows and other stock. The roots of forest trees, apple trees, clover, and other plants, grow in weight and volume somewhat in proportion to their stems, branches, and leaves. Hence it has been found quite injurious to the full development of the roots of clover, to permit cattle, horses or sheep to cut it close with their teeth and jaws. In other words, this severe pruning checks the growth of the plant, so that in the six best grazing months, only about half so much clover stems and leaves above ground, and half the quantity of roots below ground, are produced as there would be if no such severe pruning had been performed. This is a substantial argument both in favor of soiling and never turning stock into clover fields or common pastures when the herbage is small and young. We have not now room to discuss this subject further, but will resume it an early day.

WOOL GROWING IN THE WEST.—I have for several years been dissatisfied with the profits arising from keeping fine woolled sheep. My experience is, that it does not pay to keep sheep for their wool alone, without mutton or lambs. Some three or four years ago considerable attention was paid to purchasing and raising sheep, but from the depressed state of the wool market it is decidedly falling off. Farmers in the Western States have also learned that growing wool is not the profitable business that it was represented to be by those who bred sheep to sell at three times their value. The demand east for good horses, cattle and swine, is much more urgent than for wool; hence they command high prices. Good swine in decent order are worth in this State \$5 per hundred for the eastern markets. A drove of seven hundred swine passed through Ypsilanti the other day bound for Boston. If western farmers will turn their attention to breeding good horses, cattle and hogs, the eastern drover will be after them and pay good prices. The supply is not equal to the demand, and prices will continue to rise. W. ANDERSON.—*Michigan.*

EXTERMINATION OF THE WIRE WORM AND CANADA THISTLE.—For several years I had plowed my land and sown wheat, and got but little, it being destroyed by the worms. I became almost discouraged, and at last concluded to try an experiment, which was as follows:

I had a field of four acres very unpromising for wheat, containing several patches of Canada thistles, and the sod being nearly eaten up by worms. I plowed the field and sowed it to buckwheat. The next season I put three horses to a plow that cut sixteen inches deep, and turned it over the last of May; then dragged it down and covered with barn-yard manure, and plowed it in. After plowing it in lands four paces, the first week in September I sowed it to wheat, which yielded twenty bushels per acre, and entirely destroyed every thistle. The next season I followed the same course with another piece of three and a half acres, except that I sowed it the last week in August. Last summer I harvested thirty-four bushels and nine quarts to the acre, beside considerable being shelled and destroyed by a hail storm during harvest. I also destroyed every Canada thistle on that piece. Last season, three of my neighbors tried the same process in preparing ground for wheat, which looks promising.

I would here say that no one need think of destroying Canada thistles by plowing as I have seen it done—only three or four inches deep, and the surface not more than half broken, leaving many here and there to go to seed. The land should every inch be broken. Take time, and do it well. If a stone throw the plow out, back up and start again.

I find that very deep plowing is not good for spring crops; ten or twelve inches is sufficient only on land that is summer fallowed. C. B. GILBERT.—*Pultney, N. Y.*

MAXIMUM RUTA BAGAS.—I beg you will allow me one more "last word" on the turnip crops of England. My reasons for believing that over forty tons have been raised there, are these: Numerous crops of this weight have been reported; that the English farmer is more thorough in determining the amount of his crop than we are; that the rent of land is sometimes paid in this article, requiring its true weight to be known; that careful experiments in feeding are made with the turnip, requiring also the true weight; and, finally, these great crops are offered at fairs for large premiums in competition so close as to secure accurate measurement. Your explanation that all these super-forty-ton crops are the result of careless measure and exaggerated estimates will apply to some, perhaps to many, but to suppose it will account for *all* seems to me inconsistent with a proper estimate of testimony. But enough of this.

Your estimate of the pretensions of Prof. Comstock agrees with my own. He lives near me, and, of course, we have the advantage of the direct rays and full effulgence of this new luminary. I have been exactly in your dilemma, for the first time I met the unfortunate he talked to and at me unmercifully for more than an hour, when, at last, out of breath, I had a chance to inquire whether he was trying to convey to my mind *one* idea or *several*! Human credulity is stupendous! JOHN T. ANDREW.—*West Cornwall, Ct.*

WIRE WORMS.—The wire worm has been the bane of farmers in this vicinity for a number of years, and numerous experiments have been made to stop their ravages, but generally without effect. Three years ago, in planting a field with corn where several crops had been destroyed by the wire worm, I soaked the seed in copperas water forty-eight hours—then applied one pound of sulphur to each bushel of seed—the sulphur adhering to the grain—and planted it. The result was, the worm did not make its appearance. The crows pulled up the corn in a few hills, but left the grain untouched, and did not visit the field again. I have used it with equally good success the last two years. Last year I tried the sulphur on my seed wheat, and the worms did not touch it, where two years before they had destroyed my whole crop. I dampened the seed with water, and then mixed the sulphur through it, putting twenty pounds of sulphur to one hundred bushels of seed. I use a drill, and think the sulphur cannot be applied where the grain is sown by hand. GILBERT BAKER.—*Milo, Yates Co.*

EXPERIMENT WITH GUANO.—In July, 1850, I sowed a field of $2\frac{3}{4}$ acres with buckwheat. Of this, two acres were sown with guano, about 90 lbs. to the acre; the remaining $\frac{1}{4}$ of an acre had no manure of any kind. We harvested and threshed in October, and from the two acres sown with guano we had 51 bushels of good plump grain; and from the $\frac{1}{4}$ of an acre not guanoed, we had $2\frac{1}{2}$ bushels of poor, shrunk, good-for-nothing.—*Penn. Farm Journal.*

SMALL FARMS AND THOROUGH CULTIVATION.—The celebrated Mr. ROBERT BAKEWELL, of Dishley, Leicestershire, and the founder of the New Leicestershire sheep, used to tell an anecdote with exceeding high glee of a farmer not only of the olden school, but of the golden times. This farmer, who owned and occupied one thousand acres of land, had three daughters. When his eldest daughter married, he gave her one-quarter of his land for her portion, but no money; and he found, by a little more speed, and a little better management, the produce of his farm did not decrease. When his second daughter married, he gave her one-third of the remaining land for her portion, but no money. He then set to work, and begun to grub up his furze and fern, and plowed up what he called his poor dry furze, covering in some places nearly half the land. After giving half his land away to two of his daughters, to his great surprise he found that the product increased; he made more money because his new broken up furze land brought excessive crops, and at the same time he farmed the whole of his land better, for he employed three times more laborers upon it; he rose two hours sooner in the morning, had no more dead fallows once in three years; instead of which he got two green crops in one year and ate them upon the land. A garden never requires a dead fallow. But the great advantage was, that he had got the same money to manage five hundred acres as he had to manage a thousand acres; therefore he laid out double the money upon the land. When the third and last daughter married, he gave her two hundred and fifty acres, or half which remained, for her portion, and no money. He then found that he had the same money to farm one-quarter of the land as he had at first to farm the whole. He began to ask himself a few questions, and set his wits to work to see how he was to make as much of two hundred and fifty acres as he had of a thousand. He then paid off his bailiff, who weighed twenty stone! rose with the lark in the long days, and went to bed with the lamb; he got twice as much work done for his money; he made his servants and laborers, and horses, move faster; broke them from their snail's pace; and found that the eye of the master quickened the pace of his servant. He saw the beginning and ending of every thing; and to his servants and laborers, instead of saying, "go and do it," he said to them, "let us go, my boys, and do it." Between come and go he soon found out a great difference. He grubbed up the whole of his furze and ferns, and then plowed up the whole of his poor grass land, and converted a great deal of corn into meat for sake of the manure, and he preserved his black water (the essence of manure); cut his hedges down, which had not been plashed for 40 to 50 years; straightened his zig-zag fences; cut his water courses straight, and gained a deal of land by doing so; made dams and sluices, and irrigated all the land he could; he grubbed up many of his hedges and borders covered with bushes, in some places from 10 to 14 yards in width, some more in his small closes, some not wider than streets, and threw three, four, five and six closes into one. He found out that, instead of growing whitethorn hedges and haws to feed foreign birds in the winter, he could grow food for man instead of migratory birds. After all this improvement he grew more and made more of 250 acres than he did from 1000; at the same time he found out that half of England was not cultivated at that time for want of means to cultivate it with. I let him ram and sold him long-horned bulls, (said Mr. BAKEWELL,) and told him the real value of labor, both in doors and out, and what ought to be done with a certain number of men, oxen, and horses, within a given time. I taught him to sow less and plow better; that there were limits and measures to all things; and that the husbandman ought to be stronger than the farm. I told him how to make hot land colder, and cold land hotter, light land stiffer, and stiff land lighter. I soon caused him to shake off his old deep-rooted prejudices, and I grafted new ones in their places. I told him not to breed inferior cattle, sheep, or horses, but the best of each kind, for the best consumed no more than the worst. My friend became a new man in his old age.—*Gardeners' Chronicle.*

TIME TO CUT TIMBER.—From tradition, I had cut hoop-poles in the autumn and fencing stuff in the winter, perhaps for the convenience of moving rails, especially by sledding, and because the draught on the labor of men and team is less pressing than in summer; but I found that posts would rot off at the surface of the ground, if sandy, in a few years, and the sap of rails become defective, and worms, and wet, accelerate decay. It was therefore a great tax to support several hundred rods of post and rail fence on pine plain. In a few instances, posts were morticed at the butt, and the tip end set in the ground, and these were sound when the others failed! I read of a ship carpenter, who cut the timber for a vessel in February, and built it; but being short of a few plank, he cut and sawed them in the summer, and he lived to see the plank all a dead rot under the paint, except the few cut last, which had no appearance of decay!

In 1840, I designed to make posts of several large oak trees, and it was quite an object to peel them, for tanners' bark, so I waited till the summer solstice, cut and peeled and made them into posts, which stand well to this day. At the same time, I split some staves and cut some poles as hoops for a pork barrel, which was made, and though the bark peeled from the hoops the first year, they are now as sound and tight as ever, while I have formerly lost much by their failure in damp cellars, sometimes in a single year. I have been thus particular to convince the skeptical, by assigning my experience of the profit of cutting and peeling when all the saccharine portion of the sap is in the full leaf, when the peeled surface dries and becomes hard and impervious to water—and also, the reason why I set the tops of post downward. In addition to this, if lime-mortar is put round posts, I reckon that the man will not live to see them need resetting.—*Cor. Boston Cult.*

SOWING CORN FOR FODDER.—In answer to an inquiry the *Country Gentleman* says :

We have cultivated corn for fodder for many years, and find it, all things considered, the most profitable crop we can raise. It may be sown during the comparative season of leisure just after corn-planting, and secured at the next season of leisure just after haying and harvesting. After repeatedly cropping the same ground, we are satisfied that it rather enriches than impoverishes the land, no grain being formed, and a vast bed of roots remaining. Nothing is equal to it for reducing rough, turfy, weedy land, to a state of cleanliness and good tilth. We believe it the best fallow crop in the world, to precede wheat.

It should never be sown broadcast. The imperfections of this mode are the chief reasons that the crop has not become more generally introduced. It requires more seed, and leaves the ground in a fouler condition than when sown in plowed drills. We have tried both ways to our entire satisfaction as to the comparative value of each. The following is the best mode for sowing, cultivating, and securing the crop :

Plow and harrow the ground as for any other crop; furrow it with a one-horse plow, three feet apart; let a man pass along one of these drills with a half-bushel basket on his left arm containing shelled corn, and strew the seed in the furrow at the rate of about 40 or 50 grains to a foot, which will be about $2\frac{1}{2}$ or 3 bushels per acre. He will do this evenly, with a little practice, as fast as he can walk. If sowed thinner, the crop will be smaller. We have found by accurately weighing and measuring, that 20 grains to the foot yielded only two-thirds the crop afforded by 40 grains to the foot. Immediately after the sower, follows a man with a one-horse harrow or cultivator, or with a two-horse harrow, *lengthwise* with the furrow, and covers the seed. Two men will thus plant six or seven acres in a day.

When the corn is six inches to a foot high, run a one horse-cultivator between the rows. This is all the dressing the crop needs. No hoeing is necessary, for the dense growth soon smothers down all else; and in the autumn, when the crop is cut off, the earth is left as clean as a newly plowed field.

It is to be harvested about the first of autumn. If the crop is very heavy or much "lodged," it is cut by reaping. If straight and even, a common scythe will answer the purpose, a little practice enabling the operator to throw it smoothly with the heads in one direction. After partly drying, for a day or two, the best way is to tie it in bundles and put it up in large shocks, although raking by a horse into winrows for cocks, might answer well for large fields. It must dry some weeks. It can *never* be safely put into *large stacks*. The most perfect way would be to place it in small stacks or long upright rows, under a large shed. Even if the stalks appear perfectly cured after several weeks exposure, they will certainly heat and spoil if stacked in the ordinary way. Hence, the stacks must be quite small, freely salted, and well ventilated by means of them or four poles placed upright in the center. We have found the stalk to retain a good condition when left in large, well made shocks on the field, till wanted in winter. Curing is the only difficulty with this crop, and this ceases when understood.

Land that will yield thirty bushels of corn to the acre, will afford about *five tons* of dried fodder. Moist land is better than very dry, as it is more affected by drouth than ordinary corn crops. We have not found the cost, including interest on the land, to exceed \$1,50 per ton for the dried fodder.

For soiling or feeding green, corn fodder often proves of the highest value, when pastures are burnt by drouth. For this purpose, it may be sown at different periods till mid-summer.

FALL PLOWING.—I have been a practical farmer for some time, and a constant reader of agricultural works, and yet can I never adopt the popular plan of plowing my corn ground in the fall. I have frequently conversed with the advocates of fall plowing, and the principal reasons urged are: a preventive against the cut-worm, advance with their spring work, and that their teams are in a better condition to do work in the fall than in the spring. The first of these reasons may, in a measure, be an inducement to some for fall plowing; but to me it is not, for I never have had much trouble with the grub. My mode of management is, to plant deep with the hoe, and not too early in the season. The advantage I find in planting deep is, that if the worm cut off the stalk, it still grows on without injury, and if planted shallow, the worm takes it so close to the grain that it must die. As to the two other reasons, I think they should have little weight, for in my opinion, teams well wintered, are better able to perform hard work in the spring than they are in the fall, after a whole summer's hard work.

My own experience, too, has taught me that ground plowed in the fall, and subjected to the action of the frosts, heavy rains and snows of our winter, will become hard and unmanageable the following spring, and then will require as much labor to get it properly pulverized as another plowing; and then my impression is, it will not retain moisture as well as spring plowing. Another reason for spring plowing is, that it can be better done than in the fall, the ground being always in better order for plowing. I have seen plowing done in the fall that I would not have thanked a man to have done for nothing, on my farm, in consequence of the ground being too hard.

To prove my position, I find, in referring to agricultural works, that where there has been an extraordinary yield, it always has been the product of spring plowing. In looking over the February number of the *Farm Journal* I find, for raising the premium crop of 160 bushels per acre, Mr. WALKER plowed in the beginning of May, and planted the last of May. In the same number

of the *Journal* I find, for the next premium crop, Mr. McCREA has given his time for plowing as some time in March, and that very little after culture was necessary to keep down the weeds.

In the January number of the *Priarie Farmer* of 1847, I find an article signed A. L., which speaks thus of fall plowing for corn: "In the place where I live, fall plowing for corn, after repeated trials, has mostly been abandoned on old land, especially early fall plowing. I have succeeded best with the corn crop—taking into account labor and yield—where the planting followed the plowing as soon as possible."

I shall here say that I fully concur with A. L. in saying that taking into account labor and yield he is in favor of spring plowing. I have always found the yield better in spring plowing, and labor much less in keeping weeds and grass down.—*Samuel Mumma, in Penn. Farm Journal.*

SMALL VS. LARGE HORSES.—The arguments may all be in favor of great size, but the facts are all the other way. Large horses are more liable to stumble, and to be lame, than those of middle size. They are clumsy, and cannot fill themselves so quick.

Overgrown animals, of all descriptions, are less useful in most kinds of business, and less hardy than those of a smaller size. If theory is to be resorted to in order to determine such questions, we suggest to the lovers of overgrown animals, the following: The largest of any class is an unnatural growth. They have risen above the usual mark, and it costs more to keep them in that position, than it would were they more on a level with their species.

"Follow nature," is a rule not to be forgotten by farmers. Large men are not the best for business. Large cows are not the best for milk. Large oxen are not the best for traveling. Large hogs are not the hogs that fatten best, and large hens are not the hens to lay eggs.

Extremes are to be avoided. We want well formed animals, rather than such as have heavy large bones. Odd as it may seem to the theorist, short legged animals invariably prove to be better travelers than any. Short legged soldiers are better on a march, and the officers say they endure hardships longer than those of longer limbs.

On choosing a horse, take care by all means that his hind legs are short. If they are long, and split apart like a pair of dividers, never inquire the price of the horse dealer; run for you life, and make no offer lest you be taken up.

Horses that are snug built are not always fast travelers. It is no easy matter to select a horse that is perfect in all points. Snug and tough horses are not fast on the road. The fastest trotters are not always made for very hard services.—*New England Farmer.*

BROOM CORN.—From the tenth to the twentieth of May is the right time for planting this crop. Select the piece of ground most free from weeds, and prepare it as for Indian Corn; that is, plow it deep and mellow, and harrow smooth. The best soil is a true loam. The best manure, a rich compost, plowed or harrowed in.

Mark off the rows three and a half feet apart with a chain, or some other contrivance that will only make a mark on the surface, as the seed should not be buried deep, or placed in the bottom of a furrow.

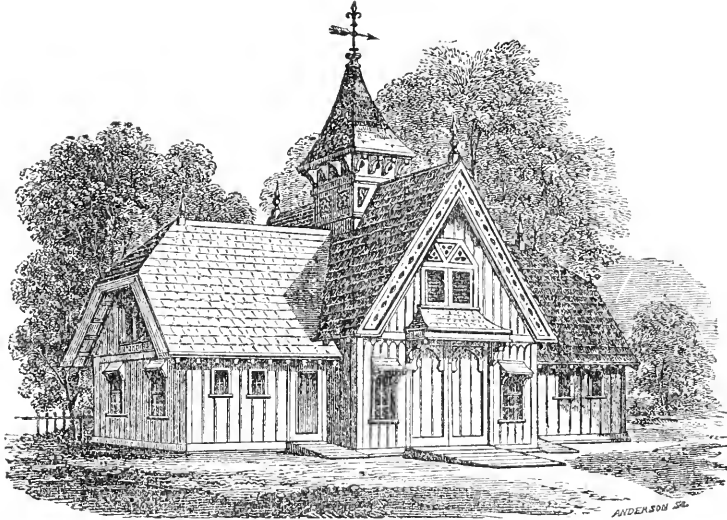
Preparing the seed.—It is the practice with the best broom corn growers, to pound the seed with a club until the hulls are broken off, when the chaff is winnowed out.

Proving the seed.—By putting a handful in moist earth, kept warm, until it sprouts, is a very good plan. If it all sprouts, be careful in planting not to get too much in the drill.

The stalks should stand about four or five inches apart. Some prefer it in hills, of four to six stalks, twenty inches apart. If too much seed is planted, you will have a task to thin it out. As soon as the rows can be seen, run the cultivator between, so as to cut very close to the corn, as it is important to keep down the grass. The great task is in the first hoeing.—*New York Agricultor.*

BUGGY PEAS.—In this and many other sections of the State, we are troubled with buggy peas. A few years ago, I sowed a field of peas, in part with seed of the previous year, and in part with seed two years old. They were of the same kind, and sown the same day, and were sown along side of each other. The product of the new peas was very buggy, while in that from the old I scarcely found a bug. The next year, I had no old seed, and used seed of the previous year. The result was, a crop of buggy peas. I kept some of the seed over the second winter, and sowed it the third year. The result a good crop, almost entirely free from bugs, while fresh seed the same season, produced very buggy peas as before.—*O. F. Marshall, in Country Gentleman.*

SOWING OATS AMONG CORN FOR CUT WORMS.—I have seen it stated in agricultural papers, perhaps more than once, that sowing oats on sod ground, just before planting it in corn, would prevent the worms from cutting it, as they would feed on the oats, leaving the corn unmolested. Last spring I tried the experiment, and the result was, that the corn was nearly all eat up, and the oats left, seemingly, hardly cut at all. The truth is, the troublesome gentlemen prefer corn to any thing else, and will have it when they can find it. I also found it quite difficult to eradicate the oats from among the little corn which was left.—*R. T. Reed, in Indiana Farmer.*

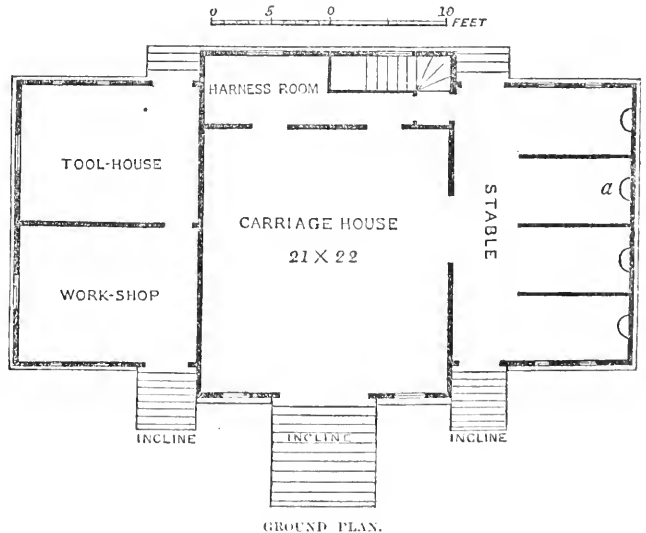


CARRIAGE-HOUSE AND STABLE.

ONE of our correspondents suggests that as we have given various ground plans for barns and stables, that we should give a plan for a stable and carriage-house—one that shall be an ornament to the grounds, instead of an eye-sore, and at the same time answer well the purposes for which such a building is needed. We therefore copy an article from the *Horticulturist*, with illustrations, which will perhaps come as near what our correspondent wishes as anything we could give:

“This stable is intended to produce a picturesque effect externally, and to contain internally all the convenience demanded in a building of this class. The central portion

contains the carriage-house, with space for four vehicles, and a harness-room at the end of it. On one side of this is the stable—the stalls $5\frac{1}{2}$ feet wide, with racks supplied with hay through wells, over each rack, in the floor of the hay-loft above. A flight of stairs leads from the end of the stable to the hay-loft above, and is placed here, (and not in the carriage-house, as we frequently see it,) in order to prevent any dust from the hay-loft from finding its way into the carriage-house. On the other side of the carriage-house are a tool-house and a work-shop.



GROUND PLAN.

All the doors in this stable slide upon iron rollers running upon a piece of plain bar iron above the door. These iron rollers are attached firmly to the door by iron straps; and the door, being thus suspended, not only runs much more easily and freely than if the track were at the bottom, as is usually the case, but the track is not liable to get clogged by dust or other matters falling upon the floor. Besides this, a sliding door in a stable, when opened, gives the largest possible egress in a given space, and can never stand in the way to the injury of horses or carriages passing in or out on either side.

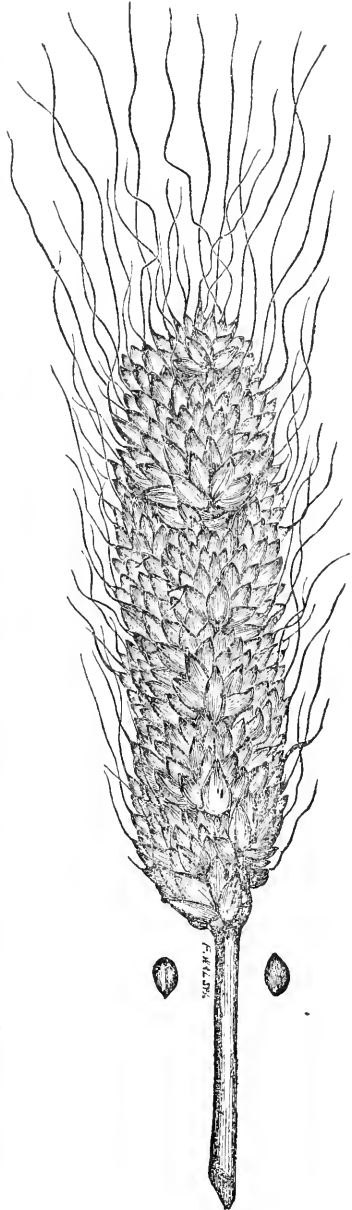
The high roof of this building gives a good deal of room in the hay loft, and the ventilation on the top keeps this space cool and airy at all seasons. The whole is built of wood, the vertical boarding battened in the ordinary manner."

The plan is excellent for the place for which it was designed—a suburban residence—though the farmer may think it altogether too limited and too expensive for his purpose.

We have just received plans of a barn to be erected at Great Barrington, Mass., for DAVID LEAVITT, Esq. It is to be called "*Cascade Barn*," and was designed by J. WILKINSON, late principal of the Mount Airy Agricultural Institute, Penn. The estimated cost is \$10,000. The material of the building is to be wood, except the lower story on both sides and the second story on one side, which is to be stone. There is a mill stream running through the farm, and the buildings will be so arranged that all the machinery can be worked by an over-shot water wheel of twenty horse-power, placed in the basement. Being on a side-hill, the building is so arranged that there is a carriage drive into each of the three stories.

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AFRICAN WHEAT.—We have received from Mr. ADAM S. KILLMAN, Pelham, C. W., sixty-nine heads of African wheat, said to have been all produced from one grain. The ears are rather small, but well filled. The accompanying engraving, taken from one of the sixty-nine ears sent us, will give an idea of the distinctive character of this variety. We are not sufficiently acquainted with the wheat to recommend it to our readers as a superior article. We believe that it is grown to some extent in the township of Pelham, and gives great satisfaction. Mr. ROBERT G. KILLMAN obtained the first prize for the best two bushels of clean wheat, at the Pelham show; it was African wheat, and weighed $65\frac{1}{2}$ lbs. per bushel. Mr. KILLMAN has experimented considerably in raising new varieties of wheat. He once obtained ninety-six bushels of white wheat from one head in three years. He thinks the African wheat the best he ever saw.



AFRICAN WHEAT.

Horticultural Department.

CONDUCTED BY P. BARRY.

MANAGEMENT OF ORCHARDS.

THE management of orchards is a matter of no trivial importance to this country at the present time. Thousands of acres of the best land are planted with fruit trees, and a large amount of capital has been expended in their purchase and planting, and whether this land has been rightly appropriated, and this money judiciously expended, depends entirely upon future management. Many people have embarked in this as in other pursuits, with spirit and enthusiasm. They prepare their ground, plant their trees, take good care of them probably for a year or two, until their enthusiasm begins to cool, when some new hobby is taken up, and the orchard is lost sight of, probably "seeded down," and left to take care of itself with the occasional assistance of cattle, sheep, or hogs, that may be turned in to pasture among them. Thus "seeded down," and cropped, and bruised, and barked by animals, starved for the want of suitable and sufficient nutriment, the trees become stunted, mossy, covered with insects, and, in short, a nuisance.

This is the actual history of many an orchard we know of this day, and thousands and tens of thousands of dollars have been lost to hard-working, economical farmers, and to the country, by this very system, if we may so call it. Gardens are managed not unfrequently in the same way. A great many impulsive sort of people rush into fruit culture and gardening this season with all the enthusiasm of devotees—one would suppose, to hear them talk, that gardening would occupy their attention largely to the end of their lives; but next season we will find them with not a thought of gardening, all the improvements and expenditures of last year neglected and lost. Need we caution people against such folly? We fear we need, and yet every year we can see a greater degree of prudence manifested in the matter—plans better matured and having more the appearance of reality and permanence. These spasmodic efforts will gradually disappear as people become better informed and enter upon improvements with more correct views and prospects.

But to return to orchards, to which we propose to confine our present remarks. We must beg of cultivators not to entertain for a single moment the ruinous practice of "seeding down." If you think you cannot afford it, or that it will not pay to give your orchards good clean culture until they have at least attained a full bearing condition, dig them up and burn them, and convert your land at once and completely into corn fields or pastures, as it may seem fit. You may rely upon it, that you cannot have a more unprofitable or discreditable piece of property than a starved, neglected fruit tree. How is it possible that a young tree can thrive in a pasture or tough sod? The young roots near the surface of the ground that are really the most important as furnishing the better portion of the food of the tree, are robbed by the grass and weeds, and die out, leaving the tree to find its entire support through the deep roots that are bedded in the poor, cold subsoil. In such a situation, a tree immediately loses its vigor. It begins to look feeble, old and knarly, fungi and insects take possession of it, and there it ends.

It is surprizing to people who have not observed very closely the results of various modes of culture upon trees, how soon young trees show the influence of plants growing around or near their roots. A few years ago, in an economical mood, we sowed carrots between some rows of young apple trees. The rows were $3\frac{1}{2}$ feet apart, and we sowed

only one row of carrots in the space—the ground, too, was kept clean all summer, and yet we lost the season's growth of the trees, and got a poor crop of carrots. Other trees of the same age, in the same soil, *without* carrots, were twice as large in the autumn. That ended our carrot culture among trees. When an orchard is cropped, the greatest care should be taken to give the tree ample room. If the nutriment be drained from around the roots by the rapid growth of annual crops, or if the tops be excluded from the free circulation of the air and ~~exposed~~ to the sun, the result will be a feeble, sickly growth.

A multitude of planters do not seem to appreciate the value of a tree. We know men who raise fine field crops, who would, indeed, be ashamed of a poor one, and who would no more be seen riding behind a lean, long haired, filthy horse, than they would be caught picking pockets, and yet their trees are as disgraceful to them as the leanest horse would be. A tree is a living body, requiring food and care as much as an animal, and even more, for it has not the advantage of locomotion. It is confined to a narrow spot, and if its food is not found, then it cannot seek it elsewhere, and it must perish. We have at hand a very sensible communication touching this subject, which we append to these remarks, and we beg the special attention of tree planters to its contents :

"Permit me to say a few words upon a subject in relation to which farmers, in general, seem to be either strangely careless or willfully ignorant and blind: I allude to the very common practice of "*seeding down*" orchards to clover.

My attention was first called to this subject by an experienced farmer and orchardist, some twenty years since, while examining the defects of my own orchard, on a farm then recently purchased in Genesee county. The orchard, though young and grafted, was at the time exhibiting strong symptoms of decay. The trees had been "set out" some eight or ten years previously, on a strong loamy soil—had been manured some two or three times from the barnyard, and by the process of grafting *after* setting had been pretty well trimmed; yet the trunks and limbs of the trees had nearly all become very rough and scabby, and nearly encased in a covering of "tree lice;" the leaves were small and yellow, and constantly falling during all the summer, and there were scarcely apples enough even at that time grown, to furnish a sample to each tree; and all that were grown, were much under size, knotty and scabby, and quite deficient in flavor.

On inquiring the cause, I was told by my friend, that beyond a doubt, all these defects had been the result of "seeding" the orchard down to clover, which had been done by my predecessor some few years previous; the roots of the clover plants striking deep into the earth, having deprived the trees of that nutriment which they required to promote a healthy and vigorous growth.

The "remedy" prescribed was, to plow the ground thoroughly, though not deep, manure and till the soil constantly, and under the tops and spreading branches to throw a *liberal dressing* every year or two of leached ashes, lime and chips, or dooryard manure—then scraping and scouring the trunks and branches as far as practicable, and washing with a strong lye of wood ashes, and then adding a good coat of whitewash, composed of lime and wood ashes, laid on either with brush or broom, or by any other convenient method.

This process then, and subsequently practiced in many other cases under my own personal direction and observation, produced a result entirely satisfactory and highly gratifying—restoring the trees to a healthy, vigorous growth, full, and, generally, to *uniform bearing* of perfect fruit; and my most sanguine desires in relation to this subject will have been fully gratified if those, or a portion only, possessing fruit orchards, will but put this theory to a practical test by but *one* well conducted experiment.

Did time and space permit, while upon this subject, I would gladly call the attention of every man possessing energy and enterprise to set out a single fruit tree, to the importance of a *liberal use of lime* as a manure or stimulant, when applied directly to the roots of *most kinds* of the apple (near, though not in immediate contact with the body—say two feet distant,) and well worked into the soil, either by the hoe or *light* plowing, thereby producing not only larger and much more perfect fruit, but in many instances, (contrary to the apparently natural habits of the variety,) inducing uniform annual bearing.

A renewal of the dressing of lime once in four to six years, and from four to eight quarts of lime to each tree, will probably be found sufficient in most cases, especially on light and warm soils. A HOOSIER."

A PRACTICAL TREATISE ON THE CULTURE AND TREATMENT OF THE GRAPE VINE. By J. FISK ALLEN.

The third edition of this work, enlarged and revised, has just been issued by C. M. SAXTON, of New York, the well known, enterprising agricultural book publisher. It is a useful and much needed book, and especially at this time, when Grape culture is attracting so much

attention and inquiry. Mr. ALLEN is a practical and eminently successful Grape grower himself, and therefore well fitted to prepare a work on the subject on which people may rely with safety. The construction of graperies, the preparation of borders, the propagation and management of vines at all seasons and under all circumstances, the selection of varieties, and the treatment of diseases, are all discussed with great care and minuteness. We are given not only the experience of the author, but of the most successful growers of Grapes both at home and abroad. If the book be at all faulty, it is in its profuseness of extracts; but these are subjects on which we cannot know too much.

This edition does not differ materially from the previous one, except in its appearance, which we regret to say is not so good. The new matter consists principally of a chapter on the Culture of the Grape in Florida, by Hon. A. G. SEMMES; a chapter from Dr. UNDERMILL, on the Vineyard Culture of the Isabella; and notices of some new varieties of Grapes, the most important of which are some hybrids produced by Mr. AMOS W. STETSON, of East Braintree, Mass., and our correspondent, Dr. W. W. VALK, of Flushing, L. I. We observe, too, that some alterations are made in the special lists of varieties, and especially that for a retarding house. This difference will be seen by comparing the following lists:

SECOND EDITION.

5 Vines Black Hamburg, including Wilmot's new Black Hamburg.	2 Portien Noir.	1 Common Hall Muscat.
2 Muscat of Alexandria.	3 Tottenham Park Muscat.	1 Bordelairs.
2 Zinfindal.	1 Syrian.	1 Escholata Muscat.
5 Black Lombardy.	1 Red Chasselas.	1 White Niece.
2 Charlesworth Tokay.	1 Black Prince.	1 Red Lombardy.
3 Wortley Hall Seedling.	5 Old St. Peters.	1 Queen of Niece.
	1 Black Frontignan.	1 Josling's St. Albans.*

THIRD EDITION.

6 Vines Black Hamburg, including New Black Hamburg, Victoria Black, and No. 16 Black Hamburg.	3 Portien Noir.	1 Escholata Muscat.
2 Muscat of Alexandria.	1 Tottenham Park.	1 White Niece.
1 Zinfindal.	3 Syrian.	1 Red Lombardy.
5 Black Lombardy.	1 Black Damascus.	1 Queen of Niece.
3 Wortley Hall Seedling.	1 Black Prince.	1 Bowker.
	1 Old Black St. Peters.	1 Bishop.
	1 Common Hall Muscat.	1 Black Portugal, or Farrar.
	1 White Hamburg.	1 Prince Albert.

THE COLD GRAPERY: From direct American Practice. Being a Concise and Direct Treatise on the Cultivation of the Exotic Grape Vine under Glass, without Artificial Heat. By WILLIAM CHORLTON, Gardener to J. C. GREEN, Esq., Staten Island, N. Y.

In another place we notice the issue of a new edition of *Allen's Treatise on the Grape*, and here we have another touching the same subject. Mr. CHORLTON's, however, differs from Mr. ALLEN's in this, that instead of treating of Grape Culture in general, it is devoted exclusively to the *Cold Grapery*. He makes this a "speciality," and what he has written is based upon his own very successful practice. The whole subject—construction of houses, preparation of borders, planting, selection of varieties, pruning, training, &c.—is treated in a plain, simple manner, giving a great amount of information at a small expense both of money and reading. We commend the perusal of this treatise to all who desire information on this subject.

MR. BARRY: At the last exhibition of fruit by the Genesee Valley Horticultural Society, I witnessed a most barefaced imposition. There was a display of apples made by certain individuals who have not an apple tree bearing fruit on their premises. Now, if I understand plain English, I read in the rules and regulations, "All articles entered for competition must be grown by the competitor, and bear his own name." The above has happened more than once, and passed unnoticed. A FRUIT GROWER.—*Rochester, N. Y.*

[It is very true what our correspondent "Fruit Grower" says. The rule alluded to does exist, and is a very proper and necessary one. We hope, hereafter, when persons exhibit fruits *not* of their own growth, they will so designate them. The fruit committee must look to it.—Ed.]

* This proves synonymous with *Chasselas Musquie*.

Editor's Table.

LIEBIG'S COMPLETE WORKS ON CHEMISTRY. Published by T. B. PETERSON: Philadelphia.

The complete works of the great LIEBIG!—What a treasure! A library of chemistry in themselves! Every intelligent farmer's son must desire to possess them. Here they are, then, bound neatly in one volume for \$1.50.

There is, however, in the publication of this volume a species of charlatany that we feel bound to mention. They profess to be "from the last London edition, much improved," and in carrying out this idea the publisher has seen fit to alter the dates of the author's introduction and the English editor's preface. Thus the introduction to "Chemistry in its application to Physiology and Pathology" is dated Giessen, Sept. 1, 1852, and the preface is dated Primrose, Nov. 22, 1852. They are both precisely the same as those dated in the old editions, Giessen, Sept. 1, 1840, and Primrose, Nov. 22, 1841. And so it is in all the other works, the month and the day of the month are the same as in the old stereotyped editions, but the year is changed in every case to 1852.

The familiar letters are dated August, 1852. On examining them, we found that they were the old celebrated sixteen letters, published some ten years ago. The last edition of these letters, published in London in 1851, contains nine additional letters, with many other alterations, corrections, &c., embodying "the results of LIEBIG's researches during the last few years in agricultural and physiological chemistry."

THE PROGRESSIVE FARMER. By J. A. NASH, Principal of Mount Pleasant Institute, Instructor of Agriculture in Amherst College, &c. Published by C. M. SAXTON: New York: 1853.

A scientific treatise on agricultural chemistry, the geology of agriculture, on plants, animals, manures, and soils, applied to practical agriculture, of 254 pages, cannot be expected to go very profoundly into each subject. Such a work, however, might give us some of the most important facts in each of the series, and their relation to practical agriculture. The author of the *Progressive Farmer* has attempted the task, and so far as we can judge from a brief examination, he has happily succeeded.

One feature of the work is eminently characteristic of this book-making age—it contains little, if anything, that is *new*. It embodies no new facts, nor details the results of recent experi-

ments: yet it contains much that is new to the great mass of agriculturists, and which it would be to their interest to know. For this reason we wish the *Progressive Farmer* an extensive circulation, feeling assured that he will do much good, even though he should teach a little that is doubtful in science and heterodox in practice.

PRINCIPLES OF BOTANY, as Exemplified in the Cryptogamia. By HARLAND COULTAS.

The subject of this little manual is well indicated by its title, and the author we think has successfully illustrated the laws of vegetable growth and reproduction, by tracing these phenomena in the lowest orders of the vegetable kingdom. Published by LINDSAY & BLAKISTON: Philadelphia. For sale by D. M. DEWEY, Rochester, N. Y.

THE NEW YORK STATE FAIR will be held Saratoga Springs September 20, 21, 22 and 23, 1853. We are indebted to the Secretary, B. P. JOHNSON, Esq., for a list of premiums, regulations, &c. One of the requirements from poultry exhibitors we do not fully understand:

"The lot of poultry from which that on exhibition is taken, must consist of not less than one hundred."

Is it intended that each competitor for the premium on Dorking, Spanish, Shanghai, Bantams, &c., &c., must have at home a lot of not less than one hundred of each particular breed from which the lot was taken? Or does it mean that the aggregate number of all the different breeds together must be at least one hundred? Or can a gentleman, having but one rooster and two hens of the improved breeds, receive a premium for them if he has one hundred of the *common* breed at home?

COL. SHERWOOD'S SALE of Short-horned cattle, &c., will take place at Auburn, N. Y., on the 8th of June next. See advertisement, which was accidentally omitted in our April number. Mr. SHERWOOD's farm is about one mile from the railway station. The sale will commence at 10 o'clock A. M.

THE NEW YORK "WORLD'S FAIR."—We understand that the Agricultural Department of this Fair is to be under the supervision of B. P. JOHNSON, Esq., of Albany, and that the Mechanical Department is to be entrusted to Mr. JOSEPH E. HOLMES, of South Hadley, Mass.

FLOWER SEEDS.—Our imported flower seed has only just arrived, having made an extraordinary long passage. We were, therefore, unable to send out our packages as early as we desired. All applicants will receive them within a few days after the receipt of this number. We shall resume our articles on annuals and their cultivation, in our next.

LENGTH OF CLOVER ROOTS.—CALEB K. HOBBIÉ, Esq., of Irondequoit, N. Y., has just shown us a root of red clover (probably of the small variety,) that was 5 feet 10 inches long. It was taken from a sandy loam, and grew perpendicularly in the ground. Friend HOBBIÉ objects to the assertion in our article on the management of sandy soils in March number, "But the time will come, and that soon, on *sandy soils*, when good crops of clover can no longer be grown." He thinks that by using plaster we shall always be able to raise good crops of clover. Mr. H. is a very intelligent, observing farmer, and it would give us much pleasure to receive an article on this subject from his pen.

MULES AND JACKS.—MR. WM. D. OSBURN, of Port Byron, N. Y., and his neighbors, wish to purchase eight or ten teams of mules, and also a first rate jack. They desire to learn the price of this kind of stock. Any readers in Ohio, Kentucky, or Tennessee, who deal in mules, will be likely to find Mr. O. a good customer, and can address him on the subject.

THOMAS GRIFFITH, West Newton, Allen Co., Ohio, writes us that a *good wagon maker* could not fail to make himself wealthy, at West Newton, in a few years.

ASSAFETIDA A PREVENTIVE OF THE STRIPED YELLOW BUG.—For the benefit of your numerous readers, I say put a piece of Assafetida about the size of a pea in each hill of cucumbers, and they will not be troubled with the Striped Yellow Bug. So says one who has tried it effectually. L.—*Logansport.*

BACK VOLUMES.—Owing to the great demand for back volumes, we have run completely out. We are, however, having deficient numbers reprinted, and shall soon have them bound. Many of our friends who have remitted the money for them are doubtless anxious to get them. We trust to exercise their patience but a short time longer. The postage on the bound volumes, pre-paid, is 20 cents; not pre-paid, 40 cents.

Inquiries and Answers.

SHEEP EATING WOOL.—A subscriber wishes to know the reason why some Merino sheep pull out their wool with their teeth. The irritation of ticks, or any cutaneous affection, may cause sheep to bite and pull their wool; and from sheer habit, they sometimes pull the wool from each other; or they act from the impulse that impels neat cattle to lick one another. Whatever will cure the scab and destroy insects, will be likely to prevent the evil. Feed your sheep pounded roll brimstone, or sulphur, with their salt, and it will drive off all ticks and lice, and probably cure the malady.

(RICHARD McCURDY.) We know of no thorough bred Leicester or Byfield hogs in this neighborhood. You forgot to give your place of residence.

(D. S. UMBERHOUSE.) It is not necessary to soak Osage Orange seed all winter previous to planting.

In some situations Lucerne would be more profitable than Timothy. It could not, however, be substituted for Timothy on arated farms, as it does not attain its full growth till the third year.

Clover, and the natural meadow grasses, are often cut three times for hay in England, especially when irrigated. We see no reason why you could not obtain as large a produce under similar circumstances.

(STEPHEN LINDOX, Eden Center, N. Y.) The weight of the *Farmer* necessarily varies considerably. Sometimes it weighs over one and a half ounces, yet the *average weight*, when dried, is not one and a half ounces, so that the postage in New York State should be only three cents per annum; and to any part of the United States, six cents per annum.

(E. T., Jr., Wilmington, Del.) PALMER & WILLIAMS' Self-Raking Reaper is manufactured by J. GANSON & Co., Brockport, N. Y.

Mr. T. J. F., of Tecumseh, Mich., is informed that Dr. LEE is no longer the Corresponding Secretary of the U. S. Agricultural Society, and that none other than the first number of its journal has, to his knowledge, been published. Dr. L. labored two years and wrote more than 800 letters with his own pen in favor of a truly national organization for the promotion of agriculture, before the Society in question was established. But no sooner had he issued the first number of the journal than a successful combination was formed to take it out of his hands and supervision. Had our judgment been consulted in the matter, every number of the contemplated work would have been promptly and regularly issued, as new

type was purchased expressly to print it, (and purchased *not* at the expense of the Society,) and an arrangement was also made to stereotype each number of the journal and print it, for which the Society has abundant means. What direction its affairs will take hereafter we know not.

OIL CAKE.—Does the manner of preparing linseed for fattening cattle, as given in the March number of the *Farmer*, apply to the oil cake or meal, as well as to the seed. How should the meal be prepared for feeding young calves, and what should be their daily allowance? E. W. W.—*Luron, Ohio.*

In feeding oil cake to sheep it should not be ground fine, but merely broken in half inch lumps, as sheep like something hard to nibble, and oftentimes will not eat the meal. One pound per day is a liberal allowance for fattening sheep; for fattening cattle it is often only roughly broken, as recommended for sheep, but it is preferable to reduce it to a fine meal and mix it with cut hay or straw moistened so that it will adhere to it. Four pounds per day with cut hay, or seven to nine pounds with cut corn-stalks or straw, is a good allowance.

We have often used oil cake for rearing calves, with advantage, but do not recollect the quantity given per day. The oil cake meal should be gently boiled in water till it will gelatinise on cooling. A little of the jelly should be added to the warm skim milk fed to the calves. A quantity of jelly corresponding to about three ounces of meal, and increased with the age of the calf, we should think would be sufficient per diem.

LEAD PIPE.—PLASTER IN WINTER.—I contemplate conducting water from a well about ten feet in depth about fifteen rods, in order to have a permanent supply in my barn-yard. There is sufficient descent, though quite gradual, and I am somewhat at a loss to decide what pipe to use. My preference would be to use lead pipe laid in syphon form, and thus save the labor of digging a ditch; but have some misgivings on account of a want of any definite knowledge on the subject. I solicit information, through the columns of your excellent journal, whether, for practical permanent purposes, I shall use half inch lead pipe (as larger is quite expensive) in syphon form, or sink the ditch to about the depth of the well and use cement pipe or pump logs.

Would we get the same benefit from our plaster if we should strew it upon the land in winter as we do if sown in the spring? S. COFFIN.—*Nunda, N. Y.*

If the supply of water from the well is certain to equal all that can run in the lead pipe in the driest times, the syphon plan is safe and cheapest; but if the pipe should draw air instead of water, (as it would when the well failed to meet the demand upon it,) the apparatus would be worthless for the time being. It might be charged anew and made to operate so long as there was no lack of water. The volume of the stream that runs into the well or spring should a little exceed that to be delivered by the pipe.

It is a little better to sow plaster as the grass

begins to grow, than at an earlier period, because a fraction of it will often be washed into ditches, or rills, or dissolved in surface water, if applied in the winter on snow.

PEA STRAW.—Many of your readers in this vicinity are anxious to hear from you again respecting the utility of pea straw as a feed for cattle. They are not satisfied that it can contain so much nourishment as set forth in the September number, I think. M. CAMPBELL.—*Kirkwall, C. W.*

On reference to our article on "Peas, and Pork making," in September number, we could find nothing in reference to pea straw, and do not recollect having written anything about its nutritious qualities. We would here say, however, that pea straw contains more nutritious matter than either wheat or oat straw. The reason it is so seldom turned to good use in feeding cattle is, that it is somewhat difficult to cure properly. It is usually full of dust and mouldy, and is so shattered in threshing that cattle will scarcely eat it. Nevertheless, if properly cured, pea straw makes first rate fodder.

APPLYING MANURE.—I have a meadow somewhat worn with plowing which I want to manure. Would it be best to put the manure on green this spring, or let it rot in the heap until fall? The manure is the droppings of eight cows, twelve sheep, one horse, and forty-five hens, mixed promiscuously. The meadow is a dry gravelly loam. MARCELLUS PALMER.—*Centerville, N. Y.*

We should prefer to apply it *very early* in the spring to any other time. We should refer the *fall* rather than late in the spring, with the risk of dry weather setting in.

MILK OF NATIVE AND OTHER BREEDS OF CATTLE, &c.—Will you, or some of your numerous correspondents, state what is the average quantity of milk our native cows give in a year, say five, ten, fifteen or twenty; also, the Short-horn, Durham, or any other breed of cows. A great many people believe that the native cows, on an average, give as much milk as the Short-horns.

Also, which produces the most butter and cheese from the same quantity of milk?

What kind of hay is the best for milch cows in the winter, Clover, Timothy, or Red Top?

As the season is approaching for farmers to lay up their hay for winter, this last question I wish you would answer, if neither of the others. J. G. FANNING.—*Eaton, Ohio.*

Will our correspondents favor us with their views on these subjects?

SWAMP LAND.—As I have been a subscriber to the *Genesee Farmer* for many years, I, for the first time, write you in answer to J. K. TAYLOR'S inquiry in the April number, respecting swamp lands. I have had some experience, I think, with the same kind of soil he mentions. If he has got sterile soil near by, and \$1,000 to expend, after draining, to lay out in hauling the swamp to the sterile soil, and the sterile soil to the swamp, he can make good land of both. I have hauled it on the garden and found beneficial results, and made some satisfactory experiments that it cannot be made good farming land. A good crop is very uncertain after the first. If you could succeed in burning the soil over every year, you

might grow winter rye, buckwheat and oats. I have also seen a good growth of straw but no oats; wheat a total failure; also difficult to seed with grass, and, if obtained, only good for one year. Plow and sow one season, and the next burn over, is a part of my experience. S. Y.—*Essex Co., N. Y.*

MUSTARD SEED.—I am anxious to know how I shall go to work to raise Mustard seed for table use—the common brown—as I think it a profitable crop to engage in, especially when it will command \$4.00 per bushel. I know nothing about raising it, whether to sow in the spring or fall, to scatter broadcast or plant in rows. I wish to know how much seed I want per acre, and what kind of soil is best adapted for its cultivation? I have plenty of clay and muck land. DAVID LECK.—*Plattsburgh, Clin. Co., N. Y.*

HORTICULTURAL.

(R. T., Taylor, Ill.) OSAGE ORANGE HEDGES.—Soak the seed twenty-four hours in warm water. Sow like peas, but thicker, in light, loamy soil. At the end of the first year the plants will be eight to twelve inches high, and may be planted in hedge rows. Have the soil well prepared and plant a double row, or two rows a foot apart, and the plants six inches apart in the rows, the plants in one row being opposite the spaces in the other. Keep the ground clean and mellow for the first two or three years, and shear the hedge twice a year to make it thick at the bottom.

(D. A., Oneco, Ill.) QUINCE STOCKS.—You can procure them at any of the nurseries here. A small parcel can best be sent by express.

(P. B., Sennett.) Osage Orange and Buckthorn seeds should be sowed immediately; any time in the month of May will do. Soak a day in warm water before planting. The Osage Orange in particular needs this.

(Mrs. F. B., Canandaigua.) You can get the *Rose-colored Weigelia* at the nurseries here. Price three or four shillings each.

The Mallow can soon be eradicated. Hoe and destroy as fast as they appear, and if in a place where no crop is growing, sprinkle freely with salt or brine.

(C. B., Rochester, Ia.) We are much obliged for the information respecting the *Benoni Rose* pear. Will be glad to see the fruit, if to be had this coming season.

(J. H. A.) The *Northern Spy* will no doubt succeed well grafted on seedlings six or eight feet high, if this mode be necessary. Here we prefer low working.

C. J. M., Frankfort, Ia., wishes to know the most effectual mode of guarding against rabbits in orchards. We have heard of a wash made of milk and soot, put on the tree two feet or so from the ground, being effectual; but a little thorny

brush tied on answers a good purpose. We should prefer it to "straw bandages."

(A SUBSCRIBER.) We would not advise the use of plum suckers for stocks, and especially if in any degree affected with the black knot. This disease seems to pervade the whole system.

BENDING BRANCHES TO PRODUCE FRUITFULNESS.—Do it at any time. A branch must be bent during all of one growing season to make it become fruitful. It is not safe to bend lower branches much to form pyramids, as it weakens them.

FIRE BLIGHT.—We can not say that pears on quince are less liable to it than standards. We know of no reason why it should be so.

Where I cut grafts from my young trees in the orchard, in March last, and then trimmed them smooth to the body, the sap oozed out all summer causing the bark of the trees to all turn black. Can you tell me the cause of it? I had had it to trimming too smooth at the wrong season; but I noticed in the last number of the *Farmer's Companion*, that they recommended pruning this month and paring smooth. My short experience proves that smooth pruning in this month, is injurious. Please give your views in the next number of the *Genesee Farmer*. WM. J. B.—*Grand Rapids, Mich.*

We have never observed anything of the kind. It might occur from pruning, in the case of stone fruits. These should not be pruned at the moment when the buds are swelling, but rather earlier, or later, when the leaves have expanded.

APPLE TREES INJURED IN WINTER.—I will reply in a word to J. A. N., Mercer Co., Pa., page 37. My young trees last winter, and especially in the nursery rows, where I did not take the precaution to remove the cause, suffered much in the same way. I think it is caused by snow falling, then rain, and then a severe freeze, which necessarily contracts the bark of the young trees; then there being so much weight accumulated on the surface that the snow below settles, and as it settles the ice around the tree sometimes produces a rupture upon the surface of the bark. I took the trouble last winter to break the crust in some parts of my nursery with good effect. A light coat of grafting wax applied in season to the wound is of great service to keep the tree from drying up till the sap begins to circulate; but if you had no crust, or if your trees are large and old, it is probably the result of some other cause. J. D. C.—*Locke, N. Y.*

OSAGE ORANGE.—I have of late seen some inquiries made about Osage Orange, as to its hardiness and growth in our climate, in reference to its being used for hedges. I will give you my experience in as few words as may be.

In the spring of 1849 I planted a small lot of the seed, and being rather "green" in the matter, but very few of them come up; those that did, grew about twelve inches; and in the fall, lest they should be injured by the frost, I covered the roots with dry leaves, covering them slightly

with earth to prevent them from being blown about by the wind. The next season they grew *four feet*, (the young wood died down to where it was covered). The next that I planted I soaked in warm water nine days; I then mixed them with a small quantity of *rich earth*, and kept them in a moderately warm and shady place until about the 20th of May, and almost every seed came up. In the fall I did *not* cover them up, and the next season they grew only about *two feet*—only half as much as those that were protected the season previous, though planted on the same ground as those of the year before. Those that were two years old were not injured at all by the frost, though exposed to the hardest winter we have had in fifteen years. There is no need of protecting them, though I think a good hedge can be obtained sooner with than without it. I have one planted, a mixture of Orange and Honey Locust, which, when in full leaf, is beautiful, and will be proof against any thing that has not wings. It does the best on high ground, though it will grow on any ground. ISAAC H. CLOCK.—*Darien Depot, Fairfield county, Conn.*

Hong Kongs!

THE subscriber offers for sale the present season, Eggs of the famous Hong Kong Fowl. Address, post-paid, SAM'L MCINTOSH, Canoga, Seneca Co., N. Y. April, 1853.

Eggs for Hatching.

THE subscriber offers for sale during the coming season, Brahma Pootra, Shanghai, and Black Spanish eggs for hatching, from as good stock as can be found in America. THOMAS WRIGHT, Utica, N. Y. [4-2]

Cochin China Eggs for Sale.

THE subscriber has the best collection of Cochin China fowls in the State, and, perhaps, in the country—so stated by those who have seen them. They obtained the first premium at the Monroe County Agricultural Fair last fall. My stock was obtained from J. Vick, Jr., one of the editors of the *Farmer*, and are pure and exceedingly fine. I will sell eggs from these fowls, nicely packed, and forwarded by express, or in any way directed, for \$4 per dozen. MILES DECKER, Rochester, N. Y. April, 1853.

Superphosphate of Lime,

IN BAGS and Barrels, made by C. B. DE BURE, with full directions for use,—warranted a pure and genuine article—for sale by GEO. DAVENPORT, No. 5 Commercial, corner of Chatham street, Boston, Agent for the manufacturer. Also, for sale, Ground Bone, Bone Dust, Burnt Bone, Guano, and Grass Seeds, of reliable quality. [4-1f]

Corn! Corn!!

SIXTY distinct varieties, including all the kinds exhibited at the last Fair of the American Institute, with names, time of ripening, mode of culture, &c., &c.; 8 kernels of each, making 40 kernels, will be sent to any part on the receipt of One Dollar. Apply to WM. WEDON, A. Smith's Seed Store, No. 388 Broadway, New York. May 1, 1853.—1*

Manures!

Superphosphate of Lime, (Deburgh's), 2½ to 2½ cts. per lb. Peruvian Guano,..... 2½ to 2½ " " Bone Dust, Sawings, or Meal,..... \$2.50 per bbl. Turnings, and Fine Crushed,..... 2.25 " Potash,..... 3¼ to 4 cts. per lb. Charcoal, pulverized,..... \$1 per bbl. Sulphuric Acid,..... 2¼ to 2½ cts. per lb. Plaster of Paris,..... \$1 to 1.25 per bbl. For sale at the State Agricultural Warehouse, LONGETT & GRIFFING, No. 25 Cliff street, New York. [4-2]

Clarke's Excelsior Churn!

IS, beyond all question, the best Churn for large dairies. The two favorite sizes are \$7 and \$10 each. The latter size is suitable for from ten to thirty cows—indeed, for any large dairy, as 100 lbs. of first rate butter can be produced in it at three churning, in less than one hour. *Every Churn sent out is warranted to please.* This new and saleable Churn presents great inducements to capitalists and manufacturing companies to purchase State and County rights. For full description, recommendations, &c., apply, at any time, to GEO. B. CLARKE, Patentee, Leonardsville, Madison Co., N. Y. [5-21]

Garden and Field Seeds,

FROM the new establishment of VANZANDT & BOWDISH, No. 114 State street, Rochester, N. Y., can be purchased of the merchants generally throughout the country, in papers or packages, on reasonable terms. Also, at the Agricultural Warehouse of E. D. HALLOCK, No. 24 Exchange street, Rochester, N. Y. The Seeds from this establishment can be relied on as being of the best quality. They are mostly imported, or grown for us by the *Eastern Shakers*, and are warranted good and true. Full directions for cultivation printed on each paper and package. VANZANDT & BOWDISH. Rochester, May 1, 1853.

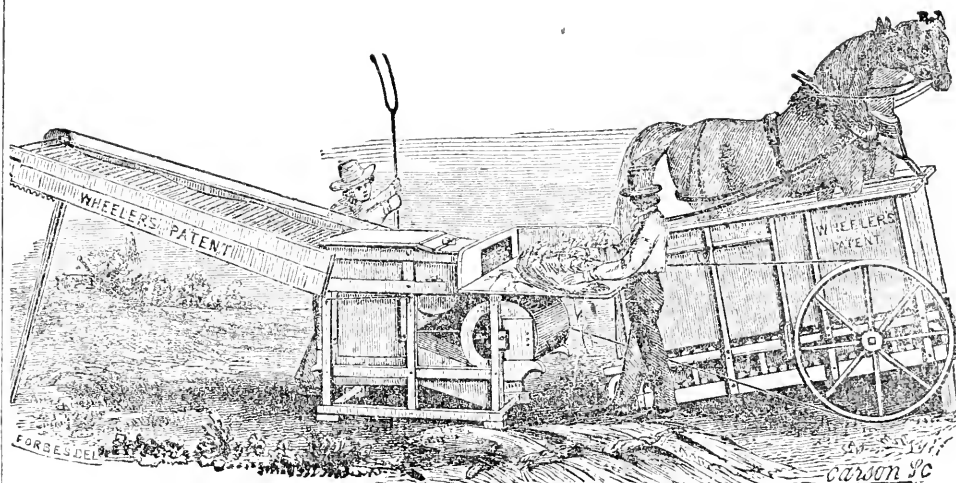
Sale of Short Horned Cattle.

I WILL sell by Auction, at my residence, on Wednesday, 8th June next, at 1 o'clock, P. M., about Thirty Thorough Bred Short Horned Cattle. About twenty of them are Cows and Heifers, the remainder young Bulls. Nearly every animal is the produce of the imported Bull "YORKSHIREMAN" and 8d "DUKE OF CAMBRIDGE," bred by the late Thomas Bates, Esq., of Kirkcavongton, England, and "EARL OF SEAHAM" and "VANE TEMPEST," bred by John Stephenson, Esq., of Durham, England, and are of his famous Princess family. The upset prices of these animals will be from \$150 to \$300, as to age, &c., &c. I will also offer the above named imported Bull, "Vane Tempest;" his upset price is \$1000. Terms.—Cash, or satisfactory notes at three months, payable at the Bank of Auburn, with interest. I will also offer for sale at that time a few South Down Lambs and Suffolk Pigs.

Catalogues are now ready, and may be found with A. B. Allen, Esq., 59 Water-street, New York. Sanford Howard, Esq., Cultivator office, Boston. Luther Tucker, Esq., and Albany. B. T. Johnson, Esq., } Albany. E. F. Allen, Esq., Black Rock. M. B. Batcham, Esq., Columbus, Ohio. W. T. Dennis, Esq., Richmond, Indiana, and with the subscriber, J. M. SHIERWOOD. Auburn, N. Y., May, 1853—1t.

Employment for Young Men.—Book Agency.

D. M. DEWEY, Arcade Hall, Rochester, has, during the past nine years, employed several hundred young men in the sale of books, and is now more extensively than ever engaged in the sale of good and valuable books by traveling agents. The following are a few of the books now offered: Uncle Tom's Cabin, in paper, retail,..... 35 Sequel to Uncle Tom's Cabin, in paper, retail,..... 28 Key to Uncle Tom's Cabin, " "..... 50 Youatt on the Horse, the best work on the Horse,.... \$1 50 Barry's Fruit Garden, the best work on Fruits,..... 1 25 Life of the Empress Josephine, by Headley,..... 1 25 Dick Wilson, a new Temperance work,..... 1 25 The Australian Captain, a book of facts,..... 1 25 Chemical Field Lectures—Agriculture,..... 75 Bibles, New Travels, Histories, Biographies, Agricultural Books, Novels, Pamphlets, &c., &c., all of which are put to agents at the lowest cash prices—and agents are indemnified against loss. A small cash capital of from \$15 to \$30 will be required, and the agent can earn from \$1 to \$5 a day, depending upon his adaptation to the business. N. B.—Orders for any Book wanted, with the price of the book enclosed, will be promptly answered by mail, and the book sent free of postage. Subscriptions received for all American and Foreign Periodicals. Address D. M. DEWEY, May, 1853. Arcade Hall, Rochester, N. Y.



**NEW YORK STATE AGRICULTURAL WORKS,
BY WHEELER, MELICK & CO. ALBANY, N. Y.**

IN presenting our annual business card to the Farming Public, we take the occasion to express our thanks to former customers for an increased patronage, which has made a further extension of our manufacturing facilities necessary.

We are making, for the trade of 1853, a much larger number of all articles in our line than we have in any previous year, and have made several improvements, which will raise them still higher in the public estimation.

As the limits of an advertisement will not admit of an explanation of all the advantages of our Machines, and as most of them are so well known as to need no commendation, we will make this statement brief, and for more detailed information we refer to our printed Catalogue, which will be sent by mail, postage free, when requested.

As we give our entire attention to the improving and manufacturing of Horse Powers, Threshing Machines, and a few other articles, we feel warranted in assuring the public that they will find each of the following Machines unsurpassed.

WHEELER'S PATENT RAIL WAY CHAIN HORSE POWERS.

These Powers (represented in the above cut) are unrivalled for driving all kinds of Farmers', Planters' and other Machinery, which admits of being driven by Horse Power. They are made for either one or two horses, and their superior merits, in point of durability, strength and ease of running, are fully established; while their compactness and simplicity, lightness, and greater length and width of Treading Floor and Stall, give them advantages over other Powers, which are highly appreciated by those who have tried them. Several thousands of them are in use, some of which (made 12 years ago,) have threshed over 100,000 bushels, and though our present Powers are much improved over the old ones of the same kind, yet the latter are still good. About 950 of them were sold by us and our agents, the past season, (a larger number than in any previous year,) thus proving their increasing popularity.

WHEELER'S PATENT COMBINED THRESHER AND WINNOWER.

This Machine (also represented in the cut,) is a new invention. It was got out two years ago, after a long series of experiments resulting in a machine which performs the three operations of Threshing, Separating and Winnowing, with as much dispatch, and as few hands and horses as are required to thresh and separate only, with other machines, and although designed for so complicated work, it is a model of simplicity and compactness. The entire running parts are driven by the main belts, and one small band. We have no doubt it is the most perfect machine in use for Threshing and Winnowing. Driven by two horses, they thresh and clean from 150 to 200 bushels of wheat, or twice that quantity of oats per day. We give below letters

from gentlemen, who have the machines in use, showing the estimation in which they are held, premising that these two are about an average of over 100 similar letters, which we can show.

Letter from E. Swarthout, Esq., dated Exeter, Luzerne county, Pa., March 22d, 1853.

MESSES. WHEELER, MELICK & CO.—Gentlemen: I am happy to say your Thresher and Winnower far exceeds my expectations—it cannot be beat in this section. I have threshed 43 bushels of wheat in 60 minutes by the watch. It was good clean wheat and short straw, and was taken to market from the machine as fast as threshed; and so it has been with most of the wheat I have threshed. All that is free from chaff and cockle I can make fit for market as it comes from the machine. I have threshed 90 bushels of oats in an hour. I think, on the average, of Wheat, 25 to 30, and Oats, 60 to 70 bushels per hour. I have threshed between 5000 and 6000 bushels in all since I got the machine, which was not till the middle of December, and so late I feared the 4 horse power, and 8 horse cleaners had got all the work done, but I soon had plenty. The workmanship of the machine is the best I ever saw.

Yours, &c.,

E. SWARTHOUT.

Letter from W. C. Northrup, Esq., Manlius, Onondaga county, N. Y.

RESPECTED GENTS: Having tried your Winnower to our satisfaction, we are glad to say we like it much. We first tried it on Soules wheat, and it worked to a charm; cleaned it as well as any Fanning Mill the first time, and threshing from 20 to 25 bushels per hour. We then set up at another barn for oats, and threshed from 50 to 60 bushels per hour. Oats were good. It works to a charm in barley; threshes as fast as we can put it through the Machine, but have not tried it per hour. It works well in buckwheat, when dry, and in timothy. Your Machine is much liked in this place, both for threshing and sowing grain. It takes the preference of the Eight Horse Machines.

Yours, very respectfully,

W. C. NORTHROP.

WHEELER'S OVERSHOT THRESHER AND SEPARATOR.

This Machine is also our own invention, and has been in use 13 or 14 years, and its many advantages are appreciated by other Manufacturers, as well as the Farming Public. Driven by our Double Power, it threshes and separates from the straw from 150 to 200 bushels of Wheat, or twice as much Oats, per day. For the Single or One Horse Power we make a smaller Thresher and Separator, which threshes from 75 to 100 bushels of Wheat per day. The small Machine is adapted to moderate sized farms, and as the Single Power is sufficient for sawing wood, churning, cutting stalks, straw, &c., and driving almost every kind of Machine used by Farmers, and is capable, by changing horses and elevating the Power properly, of threshing much faster than we stated above, it is a very popular Machine in some sections.

All our Machines are Warranted to give entire satisfaction, or they may be returned at the expiration of a reasonable time for trial.

PRICES:

For Double, or Two Horse Power, Thresher and Separator, including belts, wrenches, oil-cans, complete,.....	\$150 00
Double Power alone, including belt,.....	115 00
Do, without belt,.....	110 00
Double Thresher and Separator, alone,.....	37 50
Single, or One Horse Power, Thresher and Separator, including belts, oil-cans, and wrenches complete,.....	123 00
Single Power, alone, including belt,.....	88 00
Do, without belt,.....	83 00
Single Thresher and Separator, alone,.....	35 00
Clover Hufflers,.....	30 00
Straw and Stalk Cutters, for Horse Power,.....	30 00
Circular Saw Mill, with 24 inch Saw,.....	35 00
One Horse Power, without band wheel,.....	78 00
Churn Gearing,.....	12 00
Band Wheel,.....	5 00
Band for Power,.....	5 00
Double Power, with Combined Thresher and Win- nower, including belts, wrenches, &c.,.....	235 00
Combined Thresher and Winnower, alone,.....	120 00
Orders are solicited, and will be promptly filled. Ad- dress, WHEELER, MELICK & CO., May, 1853. Albany, N. Y.	

The Subscribers have obtained from Messrs. Wheeler Melick & Co., of Albany, the exclusive sale in Rochester and vicinity, and general agency in Western New York, of their celebrated Agricultural Machines, which we will sell at their Albany prices, adding transportation.

J. RAPALLE & Co.

The Stowell Ever Green Sweet Corn.

A QUANTITY of this new and valuable variety, from seed raised by Professor J. J. Mapes, LL.D., for sale. Per bushel, \$16; peck, \$5; half peck, \$3; quart, \$1; sent by express or mail to any part of the country, on receipt of the money by post. This is beyond all doubt the best and most prolific kind of Sweet Corn ever grown. No farmer should be without it. With ordinary care it will repay cost a hundred times over the first season.

DIRECTIONS.—A quart of seed will plant one-tenth of an acre, four to five kernels to the hill. Prepare ground well. Cultivate like common corn. It may be planted any time before the middle of June; earlier the better.

[From the Working Farmer.]

"We have long been convinced that sweet corn would prove superior as green fodder to any other; and the only objection urged against its use has been the smaller yield per acre compared with other kinds. We are now prepared to recommend the use of Stowell's evergreen sweet corn for this purpose. The stalks are nearly as sweet as those of sugar-cane, and double the quantity can be grown to the acre, to that resulting from ordinary sweet corn."

Another advantage claimed for this corn by Prof. Mapes, though the subscriber does not endorse it, is, that when desired, it may be kept green and fresh all the year round.

[Professor Mapes, in the "Working Farmer," gives the following directions for preserving the Stowell Ever-green Sweet Corn:]

"The ears should be gathered when fully ripe, and the husk should be tied at the nose (silk end), to prevent drying, when it will keep soft, white and plump for more than a year, if in a dry and cool place. At the dinner of the Managers of the Fair of the American Institute, last year, we presented them with this corn of two successive years' growth, boiled, and there was no perceptible difference between the two. This year we sent to the Fair one stalk containing eight full and fair ears, and could have sent many hundred stalks of six ears each."

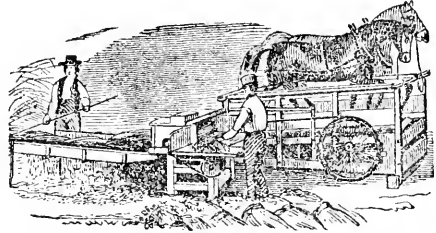
Many other commendatory notices might be given. All orders promptly supplied. Address, post-paid, ALFRED E. BEACH, White Plains, Westchester Co., N. Y. May, 1853.—2t.

Superphosphate of Lime.

OF the best quality, and various other Fertilizers, for sale at the lowest prices.

Plows, and all other Farming and Gardening Tools, and a large assortment of Field and Garden Seeds, of the best quality.

R. L. ALLEN,
May, 1853—2t. 189 and 191 Water-st., New York.



Albany Agricultural Works, Warehouse & Seedstore.
EMERY & COMPANY, Proprietors.

SOLE manufacturers of the celebrated PREMIUM "EMERY'S PATENT CHANGEABLE RAILROAD HORSE POWER," Threshing Machines and Separators, &c., &c., for one and two horses—designed for Farm, Plantation or Shop use. Its construction is such, that it can be applied to the driving of all kinds of machinery, without additional expense for gearing, &c., &c. It will be recollected that this Power is the one which took the first prize at the great trial of the New York State Agricultural Society, held at Geneva in July last. Owing to the great advance in the price of Iron, we have found it necessary to advance the prices, to enable us to manufacture a Power equally good with past seasons, rather than to use a cheaper material in their construction.

OUR PRICES WILL BE FOR THE SEASON 1853;

"Emery's Patent Changeable Horse Power," Thresher, Separator, Bands, &c., for two horses,.....	\$153 00
Emery's Patent Changeable Horse Power, Thresh- er, Separator, Bands, &c., for one horse,.....	125 00
Common Rack and Pinion Power Thresher, Sepa- rator, &c., two horses,.....	140 00
Common Rack and Pinion Power Thresher, Sepa- rator, one horse,.....	115 00
Emery's Patent two horse Power alone,.....	116 00
" one horse,.....	83 00
Common Rack and Pinion, two horse,.....	105 00
" one horse,.....	75 00
Threshing Machine with Separator and fixtures, 26 inch cylinder,.....	37 00
24 inch cylinder,.....	35 00
Set of bands for Machine, with extras, &c.,.....	5 00
Fanning Mills, fitted for Power,.....	\$26, 28, 30, 32 00
Portable Circular Saw Mills, with 24 inch circular saw, filed and set in running order, for wood cut- ting, &c.,.....	35 00
Extra table and saw for slitting boards and fencing stuff, and general shop use,.....	7 00
Upright or Felloe Saw, for Wheelright's use,.....	40 00
Cross Cut Saw, arrangements greatly improved to attach to Power for cutting logs into any desired length, in the yard or forest,.....	20 00
Churn attachments to Power, for one or more churns,.....	12 00
Feed Mills, with iron plates,.....	40 00
French Burr Stone Mills, for farm or mill use,.....	\$120 to 300 00
Power Corn Shelter,.....	40 to 55 00
Clover Huller, from,.....	30 to 100 00

Thanking the public for their past liberal patronage, we pledge ourselves anew to them, to give them a good article at a fair price.

TERMS.—Cash or approved notes or acceptances, with in-
terest, payable within four months, in Albany, New-York,
Boston, Philadelphia or Baltimore, as may best suit the
purchaser.

All articles warranted made of good material, and to operate as represented, or may be returned within three months at the expense of the manufacturer for home transportation, and purchase money refunded. The purchaser being his own judge in each case. For further particulars address the subscribers. Liberal deduction to dealers. Local agents wanted to sell and put the above in operation, &c. Catalogues, giving full descriptions, furnished on application.

EMERY & Co.,

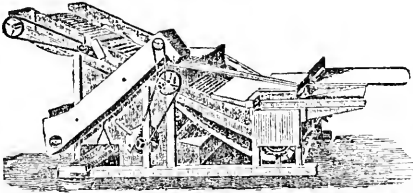
369, 371 and 373 Broadway, Albany, N. Y.
May, 1853—1t.

Standard Pears.

PARSONS & CO., Flushing, near New York, offer for sale a large assortment of Pear trees upon Pear stock, of various sizes, including the finest varieties.

Their general Catalogue of Fruit and Ornamental Trees, Roses, &c. forwarded on application by mail. [4-2t]

AGRICULTURAL IMPLEMENT MANUFACTORY,
CORNER OF CAROLINE & THIRD STREET,
BUFFALO, N. Y.



Pitts' Patent Separator—Improved Double Flon Horse Power—Pitts' Corn & Cob Mills, &c.

I HEREBY give notice that since the extension of the patent right on my Machine for Threshing and Cleaning Grain, I have removed to Buffalo, N. Y., where I have permanently located, and erected a large establishment for the future manufacture of the above Machines.

The Separator has been enlarged, improved, and rendered more permanent and durable in all its parts, while the Horse Power for strength, ease, durability and cheapness of repair is not surpassed by any in the United States. This Power is warranted to stand the full strength of eight horses—also to give as much effective or useful power when driven by one or two horses as any other Horse Power, whether constructed on the endless chain or lever principle. It was put on trial at the great exhibition of Horse Powers and Threshing Machines at Geneva, July last, 1852, where it received the New York State Agricultural Society's First Premium "for the best Horse Power for general purposes." The Separator, at the same trial, also received the Society's First Premium.

My Machines will thresh and clean from three to five hundred bushels of wheat per day, and other grain in proportion.

Two hundred of the above Machines are for sale at the Agricultural Works of the subscriber in this city, all warranted to be a better article than can be purchased at any other shop, and if they do not prove on trial to be so, I will take them off the hands of the purchasers at the price they may pay me for them.

I further notify all persons who are purchasing Horse Powers and Separators to be used in California or Oregon, that I will hold them accountable for any infringements of the rights secured to me by letters patent in the above Machines, as I am manufacturing a Horse Power and Separator expressly designed for that section.

All orders for the above Machines hereafter addressed to JOHN A. PITTS, Buffalo, N. Y., will receive prompt attention.

May, 1853.—if.

JOHN A. PITTS,
Buffalo, N. Y.

Imported Horse, "Consternation."

THIS thoroughbred horse has been so often exhibited at the Fairs of the New York State Agricultural Society, and always without a rival, that it is unnecessary either to describe or praise him. Six or seven of his colts, of various ages, were shown with him at Utica last fall. Two of them received first premiums, and all of them were greatly admired. Many of them, now four and five years old, are owned in Oneida county. Any person may be convinced of their great superiority by inquiring of almost any farmer or horseman in the town of Rome, Lee, or Western. His colts and fillies are already in demand for breeding. Several have been sold during the past winter, at handsome prices, to go out of the State.

His pedigree will be found complete in Derby & Miller's edition of Youatt, and is confirmed in every particular by breeder's certificates and copies of the English Racing Calendar, and English Stud Book, now in possession of the subscriber.

He will stand the coming season at the farm of the subscriber, two miles west of Syracuse and adjoining the town of Geddes.

Terms.—\$10 for the season, and \$15 to insure; the money to be paid in advance in all cases. When a mare is insured and left at the farm of the subscriber, or regularly returned to the horse until the groom is satisfied she is in foal, a receipt will be given promising to refund the money if the mare was not got in foal. Pasturage furnished at three shillings per week. Mares to be at the risk of owners in all respects.

[4-3]

J. B. BURNETT,
Syracuse, N. Y.

D. S. MANLEY & BROTHER,
BUFFALO NURSERY,
Buffalo, N. Y.

HAVING purchased this well established Nursery of its original proprietor, Col. B. Hodge, we take pleasure in offering for sale an unusually fine assortment of

FRUIT AND ORNAMENTAL TREES, SHRUBS AND PLANTS.

Our Fruit Department is supplied with fine healthy trees on their own stocks, of all the desirable varieties now in cultivation, together with Cherries and Pears dwarfed on superior stocks.

The Ornamental Department includes all the best varieties of Evergreen and Deciduous trees.

Rosae.—One of the finest collections in this country, comprising all that are new and rare.

*Dahlia*s.—An unrivalled selection of Dahlias, which has been procured at great cost.

Poonias.—We call particular attention to our stock of Poonias, both herbaceous and tree varieties.

The stock of *Shrubs* is unusually extensive and was collected by the late proprietor with peculiar care.

Of Currants, Gooseberries, Raspberries, Grapes, and Strawberries, we have vigorous plants of the best varieties. It will please us to furnish all applicants with our Catalogue.

Evergreen Trees and Shrubs.

The following Evergreens can be supplied by the quantity, at low prices:

Norway Spruce, from 6 inches to 2 feet.

American White Spruce, 2 to 3 feet.

Balsam Fir, 2 to 4 feet.

Austrian Pine, 1 to 3 feet.

Scotch Fir, 1 to 3 feet.

Red Cedar, 1½ to 2 feet.

American Arbor Vitae, 1 to 2 feet.

Chinese Arbor Vitae, 2 to 3 feet.

Deodar Cedar, 1 to 1½ feet.

Chili Pine, (*Araucaria imbricata*), 12 to 18 inches.

Japan Cedar, (*Cryptomeria Japonica*), 1 to 5 feet.

Lofty or Bhotan Pine, (*Pinus excelsa*), 1 foot.

Himalayan Spruce, (*Abies morinda*), 6 to 12 inches.

And many other rare species and varieties, forming one of the most complete assortments of Conifers in the United States.

ELLWANGER & BARRY,
Feb. 1, 1853. Mt. Hope Nurseries, Rochester, N. Y.

North River Ag. Warehouse and Seed Store.

53 CORTLAND ST., NEW YORK.

GEORGE H. BARR & Co. invite the attention of Farmers, Planters, and others, to their large and varied assortment of Agricultural Implements, Seeds, Manures, &c., &c., all of which will be furnished at the lowest prices. Their assortment includes

Plows—All the improved kinds by the most approved makers.

HORSE POWERS—Of all kinds and sizes, with and without Threshers, &c.

CORN SHELLERS—All the approved kinds, and some of recent introduction.

STRAW CUTTERS—Of all sizes, and kinds, for hand and horse power.

CORN AND COB CRUSHERS—Of all kinds and sizes.

FANING MILLS, CULTIVATORS, HARROWS, CHURNS of all the approved kinds.

RAKES, HOES, FORKS, and a general assortment of Horticultural and Garden tools.

REMOVAL!

HALLOCK'S AGRICULTURAL WAREHOUSE has been removed from No. 50 State street, to

No. 24 Exchange St., Rochester,

in the Store formerly occupied by J. E. CHENEY as a Store. The new store is well supplied with Implements, Seeds, &c., comprising a larger and more complete assortment than heretofore. Former customers and farmers generally are invited to call at the new establishment and examine for themselves.

E. D. HALLOCK,
April, 1853. 24 Exchange St., Rochester, N. Y.

Prouty and Mear's Plows.

A large assortment of these celebrated Plows can be found at the North River Agricultural Warehouse and Seed Store, 53 Cortland St., New York. GEO. H. BARR & CO.

THORBURN'S SEED STORE.

THE Subscribers, wholesale and retail dealers in **VEGETABLE, FLOWER, FIELD, FRUIT** and **TREE** Seeds, offer, all of last year's growth, the largest and most complete assortment to be found in the United States, all pure and of unsurpassed qualities, derived from first sources in Europe or raised expressly for them in this country.

MARKET GARDENERS, and others requiring large quantities of Seeds for their own planting, may rely on obtaining Beets, Cabbages, Carrots, Brocoli, Cauliflower, Onions, Early and Late Peas, Beans, Radishes, and other leading articles, raised from the same unrivalled stocks, which have given such general satisfaction heretofore in all parts of the Union.

AGRICULTURISTS are offered White French and Yellow German Sugar Beet, Long Red and Yellow Globe Mangel Wurtzel, Purple Top and Skirving's Improved Ruta Baga, all at 50 cents per pound. Long Orange, Altringham and White Field Carrots, \$1 per pound; with all other varieties of Agricultural seeds, Clovers, Grasses, Vetches, &c., at corresponding fair prices, and of qualities to be depended on.

RETAILERS and **COUNTRY MERCHANTS** supplied on the most favorable terms.

CATALOGUES furnished to post-paid applicants.

FLOWER SEEDS can be forwarded expeditiously by mail at trifling cost.

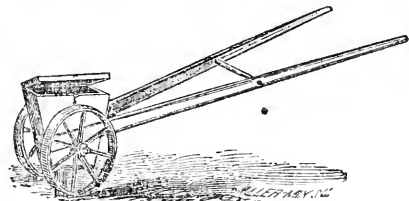
Particular attention given to the careful packing of seeds for long voyages, and the smallest order by mail promptly attended to.

J. M. THORBURN & CO.

15 John street, New York.

JUST PUBLISHED—Thorburn's annual catalogue of Native and Exotic Tree, Shrub, &c. Seeds.

April, 1853—21.



Hallock's Hand Seed Drill.

THIS Drill is adapted to sowing carrot, turnip, beet, onion, and other small seeds in drills, with perfect regularity, and without regard to their weight or shape. The seeds are forced out by a circular brush, which revolves against a perforated tin plate inserted in the bottom of the hopper. A series of these plates accompany each drill, with holes of different sizes for regulating the quantity and kinds sown. It is a light, compact, and durable machine, and not liable to get out of order. They can be forwarded to any part of the country by railroad or stage. Remittances by mail at my risk. All orders (which should give full directions for forwarding) promptly attended to. Price, \$5.

Address E. D. HALLOCK,
Rochester, N. Y.

April, 1853.

Patent Mammoth Premium Corn-Stalk, Hay, and Straw Cutters & Grinders.

CAPABLE of preparing 100 bushels of Corn-stalks, or One Ton of Hay or Straw, per hour, and reducing the largest Corn-stalks to the consistency of Cut Straw, avoiding the necessity of steaming or soaking, and saving 50 per cent. over the common way of feeding fodder. Horses and Cattle will do as well on fodder prepared this way, as on the best hay. The First Premiums have been awarded at every exhibition where they have been exhibited for competition. It can be worked by hand or power, without additional cost. The inventor will forfeit \$50, after an impartial trial, when this Machine is used in preparing good fodder, if it does not prove to save 50 per cent. over the common way of feeding fodder, and it may be fed in the same condition as the machine leaves it, without meal or soaking. Cows fed on fodder produce sweeter butter. Over 900 of these Machines have been sold. Price—\$35.

State and County Rights for sale.

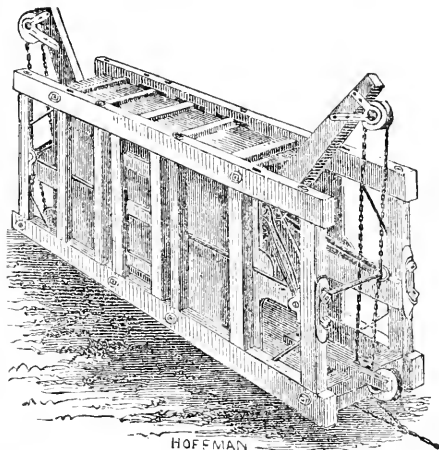
Gilbert's Excelsior Thresher and Cleaner,

Accomplishing more, with the same power, than any other Machine. It can be driven with two horses.

Price—\$200 and upwards, according to size. Horse Power included. Apply post paid to J. G. GILBERT,

[2-4]

216 Pearl st., New York.



HOFFMANN

H. L. Emery's Newly Invented Double, Toggle-Jointed, Horizontal, Progressive Lever Hay and Cotton Press.

PROBABLY no one thing has been more wanted, and less improvements made, upon it of late years, than the Hay Press. Notwithstanding this was completed quite late the past season, a large number were made and put into successful operation. As seen in the cut it is closed up and about midway in process of compressing a bundle of Hay. When fully pressed home, the ends of the levers, which are seen at each end extending above the box, are brought down by the chains or ropes and shelves, until the levers themselves become horizontal with the floor. The Press is provided with two followers, both working from the ends towards the center and each other. The chains or ropes from the levers are connected together by passing one of them under the machine and both joining in a larger chain or rope—this larger one being connected with a capstan or blocks and ropes, as most convenient.

When the Press is driven home, the hay becomes pressed into a bundle standing on its end. The side doors are thrown open while the bands are passed round the bundle and secured, when the top doors are loosened and the bundle thrown out. For operation, the levers are raised, the followers drawn back, and the top doors opened from the center to each end by unbolting the middle cross bar, as seen in the cut. The opening on the top for receiving hay, is 2 feet wide and 8 feet long. The Press stands upon the floor or ground when in use, which makes it both convenient and capacious for filling and treading in the hay.

The whole Press measures 14 feet long, 2 ft. 10 in. wide, 4 ft. 10 in. high, outside measurement, and weighs, complete, from 1200 to 1500 lbs., and is capable of compressing 250 lbs. of Timothy Hay into 16 cubic feet, (being 2x2x4 ft.) at the rate of five bundles per hour, with two men and one horse, and heavier bales in proportion as to size and time required.

For transportation, the inside work is readily removed and boxed up, while the sides are packed together making solid cubic measurement of the whole thing.

Price complete, with chains and capstans, \$185, and warranted to work as represented, to the satisfaction of the purchaser.

I will, in a future number, give a further notice in detail, with more cuts illustrating its several parts detached.

For further particulars address

H. L. EMERY,

April, 1853.

Albany, N. Y.

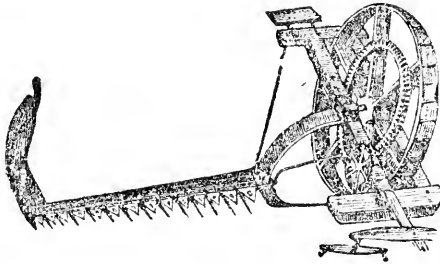
Premium Dahlias.

THE subscribers offer for sale this Autumn and the ensuing Spring, 14,000 Dahlia Roots, which have proved to be the choicest collection in the States and Canadas. [See records of the Fairs for the last four years.]

Persons commencing the Nursery business, and Amateurs, will find it to their advantage to give us a call, or make enquiries before purchasing elsewhere.

C. J. RYAN & CO.,

Rochester and Charlotte Plank Road Nurseries, Rochester, N. Y. [11-4]



KEITCHUM'S PATENT MOWING MACHINE.
Howard & Co., Proprietors & Manufacturers,
BUFFALO, N. Y.

THIS justly celebrated machine has been steadily advancing in public favor, for its simplicity, durability and efficiency—and it has settled the question beyond a doubt that grass can be cut by Horse Power; for during last season, five hundred of these machines were sold by us, and universally approved of by those who used them. Farmers were daily in the habit of cutting from ten to fifteen acres per day, with ordinary driving. It leaves the grass uniformly spread over the ground, requiring no turning to cure properly. In the Report of the Committee who served at the Trial of Mowing and Reaping Machines, held at Geneva in July last, they show fully and conclusively *this to have been the only machine in the field which cut its allotted two acres without clogging or any interruption*, doing its work admirably, and in far better manner than can be done by manual labor with a scythe. Our knives are not *sickle-shaped*, consequently do not clog at every little hummock or bog they may happen to come in contact with. The Committee also show that there is an actual saving, by the use of this machine over hand labor, of \$13 per day. We have only to refer those who want a perfect Mowing Machine to examine the Report and judge for themselves. This machine took the first premium as a mower, at the trial in Springfield, Ohio; a gold medal at the Fair of the American Institute, N. Y.; also, first premium at the Provincial Fair at Toronto, C. W.

They are so very compact that one of them can be easily carried in an ordinary one-horse wagon, and so very simple that it requires no machinist to put it together, as there are but two bolts (beside the pote bolts) to be secured to have the machine ready for use, and which does not require over ten minutes time. They weigh about 750 lbs., and can be worked by any boy who can manage a team. We have made all the improvements suggested by experience in the way of strength, durability, &c., and sell them under the following warranty: That said machines are capable of cutting and spreading, with one span of horses and driver, from ten to fifteen acres per day, of *any kind of grass*, heavy or light, wet or dry, and do it as well as is done with a scythe by the best of mowers. They are equally capable of cutting barley, buckwheat, millet, &c. It is much less trouble to keep the knives in order than a scythe, as they have frequently been known to cut from ten to fifteen acres without sharpening, which can be done on an ordinary grindstone in a few minutes. We can give any reference required, for the full performance of our machine, as above stated.

Orders should be sent in early, as we shall manufacture but a limited number. The price of our machine, including two sets of knives, extra knife blades, wrench, &c., is \$110, cash, in Buffalo, the machine to be delivered on board of boat or cars free of charge.

Office and shop, corner of Chicago street and Hamburg canal, near Eastern R. R. Depot, Buffalo.

March, 1853—4t.

HOWARD & CO.

J. RAPALJE & Co., are sole agents for the sale of the above machine in Rochester, which they will sell at manufacturers' prices.

Manures.

FERTILIZERS of all kinds for sale by the subscribers. Improved Superphosphate of Lime, Superphosphate of Lime—both the above made after the recipe of Prof. Mayes. Peruvian Guano, Sulphuric Acid, Bone-dust, Potash Sparlings, Poudrette, Plaster of Paris, &c. &c.

GEO. H. BARR, CO.

88 Cortland St., New York.

EMERY'S MOWER AND REAPER.

THE subscriber, not only having made himself practically acquainted with the construction and working of all the successful machines of this class, but having made and successfully introduced several valuable improvements in some classes of agricultural machinery, which have already gained favorable and world-wide reputation and adoption, flatters himself that he has also made an improvement in the construction of a Mower and Reaper of equal if not greater merit, than any of his former improvements.

It will suffice to say, that while this is the most compact, light, simple, cheap, durable, easy working machine, it is at the same time the most perfectly adjustable, and easily convertible into a Mower or Reaper, working as perfectly in either form as those of the best other kinds, whether simple or combined. The frame itself is so suspended upon the axis of the main wheel, as to be elevated and depressed at pleasure, so as to secure a horizontal or inclined (forward or back) position of the whole machine, at whatever elevation used, thus always having the cutting works in proper position.

In reaping, a reel is used, and the raker stands erect, face forward and directly behind the platform, with a support about him; the movable platform being on the same plane with the frame-work at the side of the discharge, and at the same time about two inches above the stubble. With the above introduction, and the diagrams to follow, together with those in this number of the Genesee Farmer, the public will have before them several machines from which to make a selection before purchasing for the coming season, and at the same time know what they are purchasing, much better than to be guided alone by impracticably written and published reports of committees of public trials, and be enabled to purchase only such articles as have their practical as well as theoretical merits plainly pointed out, or if not so pointed, to purchase only of responsible manufacturers, who are willing to back their machines by their reputation and capital.

For further particulars concerning the Reaper and Mower above described, address

HORACE L. EMERY, Albany, N. Y.

March, 1853.

E. D. HALLOCK, No. 50 State street, Rochester, is agent for Western New York, and will have one put up in running order in his store. Those in his vicinity wishing to obtain a Reaper and Mower, are requested to call and examine the merits of the above machine before purchasing elsewhere.

Superphosphate of Lime.

THIS extraordinary fertilizer, the effects of which as a manure and general assistant to soils, has proved itself invaluable to the agriculturist. This most important constituent of the soil is being daily removed and taken up in solution by plants, and unless such substance be returned fertility must decrease and the land become poor, its promoting and pushing power of growth giving strength to young plants while in their tender state and fortifying them for early maturity, exceeds over all other manures. It is some ten years since its introduction in England, where, from its pronounced *magic effects*, its introducer received a patent right from the English government.

The progressive high repute of its properties has caused the demand to increase each year. At the present time some thousand tons are annually sold to the farmers.

The subscriber has had much experience in the peculiar manufacture of this manure in Europe, which leads him to suppose that he stands unequalled by any competitor. Some considerable quantity was sold last season and tried on various crops, the beneficial results of which has caused orders for forward delivery in the coming spring to a large extent. Being in a powder, it is easy in handling, may be drilled in with seed, sown, &c.

To prevent deception being practiced, all packages will henceforward be branded with the maker's name. For sale at the following Agricultural warehouses:

LONGETT & GRIFFIN,

25 Cliff St., New York,

R. L. ALLEN, (late A. B. ALLEN & Co.),

189 Water St., New York,

where purchasers may be sure of obtaining a chemically pure and genuine article.

Enquire for C. B. DeBURG'S No. 1 Superphosphate of Lime. [2-3]

Northern N. Y. Live Stock Insurance Company, Plattsburgh, N. Y. For terms, please apply to agents of the Company.

PRINCE & CO.'S IMPROVED PATENT MELODEON.

GEO. A. PRINCE & Co., MANUFACTURERS, 200 MAIN ST., BUFFALO, N. Y.
WHOLESALE DEPOT, - - - - - 87 FULTON STREET, NEW YORK.

For the convenience of MUSIC DEALERS in all parts of the United States, we have made an arrangement with the following firms, who will supply the TRADE at our regular Factory prices:

GEO. P. REED & CO., 17 Tremont Row, Boston, Mass. COLBURN & FIELD, 154 Main St, Cincinnati, O.
BALMER & WEBER, 58 Fourth St., St. Louis, Mo.

General Agent for New York City,
Wm. HALL & SON, - - No. 239 Broadway, opposite the Park.

The subscribers take this method of calling the attention of the public to a new Musical Instrument, as yet but little known to the musical world, viz: Prince and Co.'s Improved Patent Melodeon.

It is now about five years since these instruments were first offered for sale, and during that time the increased demand for them has been unparalleled. One hundred and fifty workmen are constantly employed in the manufacture and finishing from 75 to 80 instruments per week, and as yet they have not been able to supply the demands promptly.

For the benefit of those residing at a distance, and consequently unable to inspect the Melodeon before purchasing, we will endeavor to give a short description of the instrument.

The cases are made of Rosewood, and are as handsomely finished as any piano forte. The keyboard is precisely the same as the piano or organ, and the tone (which is very beautiful) closely resembles that of the Flute Stop of the Organ—the notes speak the instant the keys are touched, and will admit of the performance of as rapid passages as the Piano. The Pedal on the left is intended for a swell, and with which the most beautiful effects can be produced. The Pedal on the right supplies the wind, and works so easily that a child can manage it without any exertion. The Bellows, (which is something entirely new, and for which a Patent was granted in December, 1846) is a reversed or exhaustion Bellows, and it is this, in a measure, which produces the peculiar tone. The instrument can be immediately made portable without detaching any part, the bellows receding into the body of the instrument, and the legs folding under and springing to their places, leaves the whole in a compact form. Each instrument has a packing case secured by lock and key.

The volume of tone is equal to that of a small organ, and by means of the swell may be increased or diminished at the pleasure of the performer; it is sufficiently loud for small churches, and is well calculated for a parlor instrument. Hundreds have examined them, and all have been loud in their praise; and the best evidence of their merit is their rapid sale. But it is a new instrument—a new invention, and is yet but little known in the musical world, and it is for this reason that we call to the attention of all lovers of Music, believing that there are thousands who would lose no time in securing one, were they aware of the existence of such an instrument, and the low price at which it could be obtained.

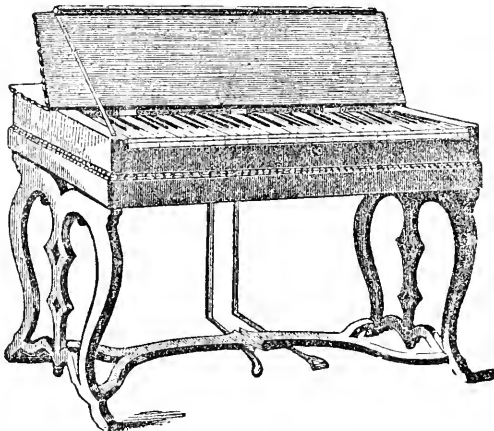
The following letter from Lowell Mason, Boston, to G. P. Reed, we are permitted to use:

Mr. GEO. P. REED, No. 17 Tremont Row, Boston, Mass.

Dear Sir—At your request I have examined one of the Melodeons manufactured by Messrs. Geo. A. Prince & Co., of Buffalo. I think the instrument in all respects equal, and

in some respects superior, to any others of similar kind which I have seen, and in particular with respect to quality of tone and promptness of touch, or action of the reeds, by which quick passages may be performed with certain and distinct articulation of tones. An instrument of this kind is the best substitute for an Organ in Church Music with which I am acquainted. LOWELL MASON.

Boston, Mass., Sept. 26, 1849.



Five Octave—Portable. Price, \$75.

PRICES.

FOUR OCTAVE MELODEON, extending from C to C,.....	\$45 00
FOUR AND A HALF OCTAVE MELODEON, extending from C to F,.....	65 00
FIVE OCTAVE MELODEON, extending from F to F,.....	75 00
LARGE FIVE OCTAVE MELODEON—Piano style,.....	100 00
LARGE FIVE OCTAVE MELODEON—Piano style with two sets of reeds, tuned in octaves,....	150 00

Just published, "PRINCE'S COMPLETE INSTRUCTOR FOR THE IMPROVED MELODEON; to which is added favorite Airs, Voluntaries, and Chants, arranged expressly for this Instrument. Price 75 Cents.

CAUTION.—In consequence of the great success which has attended the introduction of Prince & Co.'s Melodeons, numerous imitators have sprung up in different parts of the country—offering instruments under the same name, and in outward appearance resembling them. We would therefore caution the public to be on their guard, and examine those made by Prince & Co. before purchasing. Many improvements applied *are exclusively our own*, and being the original manufacturers, our experience has enabled us to produce Instruments which a discerning public have unanimously pronounced superior to any thing of the kind hitherto manufactured. Many of the most eminent Musicians of the cities of New York and Boston have voluntarily given testimonials as to the high character of our Instruments, which can be seen on application.

All orders from a distance will be promptly attended to, and a written guaranty of their durability will be given if required.

GEO. A. PRINCE & CO.

THE HORTICULTURIST,

And Journal of Rural Art and Rural Taste.

THIS is a Monthly Journal of 48 pages, beautifully printed on the finest paper, and elegantly illustrated, making one of the most beautiful Monthly Magazines published in the world. It is devoted to Horticulture, in its various departments, Rural Architecture, and to all that concerns Rural Life, and to the cultivation of Rural Taste.

It is edited by P. BARRY, so long known and esteemed as the Horticultural Editor of the *Genesee Farmer*, and published at the low price of \$2 per year. A discount of 20 per cent. allowed to agents.
JAMES VICK, Jr.,
Publisher, Rochester, N. Y.

New York Ag. Warehouse and Seed Store, OCCUPYING THREE LARGE WARE HOUSES.—The subscriber has constantly on hand the most extensive assortment of the best and latest improved Agricultural and Horticultural Implements, and Field and Garden Seeds, ever offered for sale in the United States, embracing every Implement, Machine, or Seed desirable for the planter, farmer, or gardener. Also, Guano, Bone Dust, Poudrette, Plaster of Paris, and Superphosphate of Lime.

A Machine shop is also attached to my establishment, where I employ upwards of one hundred hands, who are all exclusively engaged in making a portion of the Agricultural Implements sold at the ware house.

R. L. ALLEN,

May, 1853.—tf. 159 & 191 Water St., New York.

Entrepot Agricultural et Magasin de Graines de New York.



NOUS avons constamment en main l'assortiment le plus complet des meilleures et des plus recentes inventions pour tout ce qui concerne l'agriculture et l'horticulture, ainsi que les graines de champs et de jardin, qui ait jamais été mis en vente dans les Etats-Unis; comprenant tous les outils, machines, semences, etc., utilis aux planteurs, fermiers ou jardiniers. Nous avons aussi en vente du guano, de la poudre d'os, de la poudrette, du platre de Paris, et du superphosphate de chaux. Des elevés en bestiaux et moutons, des meilleures races de Durham et autres.

R. L. ALLEN, et-devant A. B. ALLEN et CIE,
Mai, 1853.—tf. 159 et 191 Water-street, N. Y.

AGRICULTURAL.

EVERY FARMER SHOULD OWN

Cole's American Veterinarian: A Treatise on the Diseases of Domestic Animals. By S. W. COLE. In one volume, 18 mo., with plates, sheep. Price, 50
The best work of the kind ever issued from the American Press. 34,000 copies have been published.

Cole's American Fruit Book. By S. W. COLE, author of the American Veterinarian. In one volume, 18 mo., numerous plates, full sheep. Price, 50
This is undoubtedly one of the most valuable works on the subject ever published in this country. 18,000 copies published.

Schenck's Kitchen Gardener's Text Book: Containing full and practical directions for the formation and management of the Kitchen Garden. By PETER A. SCHENCK. In one volume, 18 mo., numerous plates, sheep. Price, 50

Beck's Book of Flowers. A thorough work, with full directions for the cultivation of a Flower Garden, in which is also described all the various Trees, Shrubs, and Plants for ornamental purposes. By JOSEPH BECK, Seedsman and Florist. In one volume, 12 mo., cloth. Price, 75

Treatise on the Construction, Heating, and Ventilation of Hot Houses. By R. B. LITCHFIELD, Scotch Garden Architect. 8 vo., with a large number of Engravings, Plans, Drawings, Elevations, &c., &c., cloth. Price, 1 00

The only work on this subject ever published in America. It is highly recommended by Prof. Silliman, and other scientific gentlemen.

The American Fowl Breeder. Price, 25

Published by JOHN P. JEWETT & CO., Nos. 17 and 19 Cornhill, Boston.

For sale by all booksellers. [5-41]

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Eggs of Chinese Fowls for Sale.

I HAVE a fine collection of all the improved varieties of fowls, and will sell eggs the present season of the following varieties:

White Shanghai, Black Shanghai, and Red Shanghai, at \$3 per dozen, nicely packed and forwarded as directed. Also, Royal Cochins China and Brahma Pootra, at \$4 per dozen. All fresh and fit for setting.

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A MONTHLY JOURNAL OF

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VOLUME XIV, FOR 1853.

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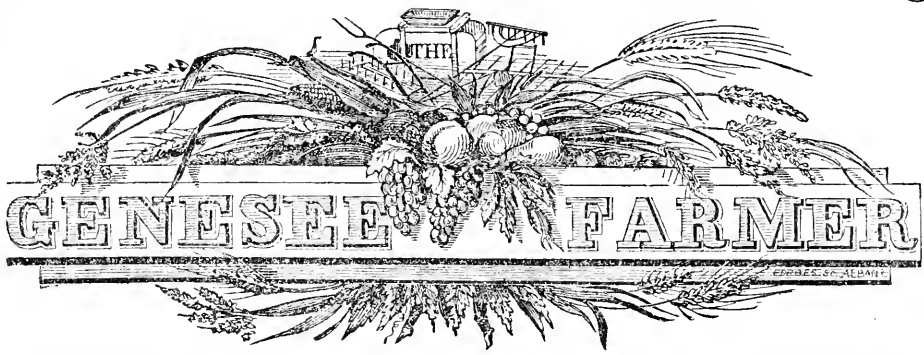
November, 1852. Rochester, N. Y.

POSTAGE LAW.—By the new Postage Law, which took effect on the 1st of September last, the postage on the *Genesee Farmer* for one year is as follows,—when paid quarterly in advance:

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STEREOTYPED BY J. W. BROWN, ROCHESTER, N. Y.



ON THE MISMANAGEMENT OF PASTURES.

PASTURES are more neglected than meadows, and meadows are generally more neglected than fields devoted to grain culture and hoed crops. To obtain a clear idea of the growth of grass, clover, and other herbage for grazing purposes, one needs to study the development of the roots, leaves, and stems, of these forage plants. The first and most important consideration is to have good land on which grass is expected to grow; and if the soil be defective in any particular, the remedy of such defect is the thing to be done in order to make the pasture more profitable to its owner. But instead of correcting existing errors in the management of grazing lands, and enriching them by the application of manure, lime, ashes, and other fertilizers, and by draining where necessary, they are generally about half or a quarter seeded, and then fed so closely that it is literally impossible for the roots of herbage plants to grow to any size, multiply, fill and cover the whole ground. Hence, common pastures present numerous naked spots, and are in the poorest possible condition to withstand the scorching, parching, dry weather of summer and autumn. It is by sheer mismanagement that the grazing lands of the United States yield so little good feed per acre, and are constantly becoming less productive. By comparing the stock kept in Kentucky and Tennessee in 1840, with that returned at the census of 1850, we find a very considerable falling off in quantity, although there are many million acres of fresh lands yet to be subdued which might be used for grazing purposes, in the States named. When we carefully study the statistics of any section of this great Republic, the same sad effects of mismanagement of so-called improved lands meets the eye of the investigator. In 1845, New York contained 11,737,276 acres of improved land; and in 1850, 12,408,968 acres; increase in five years, 671,692. These figures show an average increase per annum of nearly 120,000 acres, giving facilities for keeping a proportionably increased amount of stock, provided the soil was not deteriorated. The number of neat cattle in the State in 1845 was 2,072,330; the number in 1850 was 1,877,639; decrease in five years, 194,691. Why should an increase of nearly 700,000 acres of improved land in the State be attended by a decrease of neat stock of nearly 200,000 head? Is it the increase of horses in the numerous cities and villages? We thought that possibly this might be the case, for horses have largely increased in these places by their rapid increase of population; but when we turn to the tables which show the aggregates, we find that farmers were unable to keep so many horses (we will name the counties at another time) in 1850 as they did in 1845. Notwithstanding the increase in the cities of New York, Brooklyn, Rochester, Buffalo, and other places, the number of horses decreased in the State from 505,155 in 1845, to 447,014 in 1850. This falling off in the rural districts is a remarkable fact, and can only be explained by the sad mismanagement of the pas-

tures and meadows of this great commonwealth. We were indignant when the legislature of 1844 refused to ascertain the number of acres, respectively, in pastures and meadows at the State census of 1845; as we were at the stupid Secretary of the Census Board in Washington, when he thought that it was more important to give the pounds of beeswax produced in Georgia and Alabama, than the number of acres planted in cotton or corn. Two-penny lawyers, who have so long controlled the legislation of this country, and administered its laws, have inflicted on the farming interest a great and deplorable injury. Almost every thing in the line of state and national statistics, which which goes to show the changes in American soil, whether for the worse or the better, has been either neglected or concealed. In 1845, New York produced 2,897,062 pounds of flax; in 1850 only 940,577 pounds. Here is a prodigious falling off of two-thirds of an important crop. The clip of wool in 1845 was 13,864,828 pounds; in 1850 it was only 10,071,301 pounds; showing a diminution of between thirty and forty per cent. in five years. The decrease in the number of hogs is quite as extraordinary. In 1845 they numbered 1,584,344; in 1850 this number was reduced to 1,018,252; decrease in five years, 566,092. The number of sheep in 1845, in the State, was 6,443,855; in 1850 the number was reduced to 3,453,241; decrease in five years, 2,990,614.

Any failure in grass lands to yield a fair return, whether in pastures or meadows, must tell at once against the cattle, sheep, horses, and swine, mainly dependent on such lands for subsistence; and we have shown from official and trust-worthy statistics, that while nearly 700,000 more acres have been enclosed and improved, every kind of stock kept in New York has largely diminished in quantity. We have often said, and still believe, that about one-fourth of the eleven and a half million acres now under cultivation in New York, is being made more productive, or at least not deteriorated; while eight and a half million acres are damaged to the extent of three dollars per acre per annum by mismanagement. This involves an annual loss to the State of some *twenty-five million dollars*. At present prices of horse flesh, mules, beef, mutton, wool, butter, and cheese, it is no difficult matter, by impoverishing land, to make an acre of pasture or meadow yield three dollars worth of grass a year *less than it might produce*. Comparatively few farmers are willing to admit the fact that they do impair the natural fruitfulness of their pastures, meadows and tilled land; but when we take a considerable district of such farmers together, and liberally concede that one-fourth of their number make adequate restitution to every field, the other three-fourths will be found to have managed so badly as to be compelled to diminish the domestic animals kept in the county. It may be said that instead of feeding so many sheep, cattle, horses, and swine as they formerly did, the cultivators and owners of the soil in New York now have between three and four millions of people to feed. There is some force in this remark, and the idea is suggested to raise the question, whether it is possible to support three or four millions of large two legged animals, and return little of their manure to the land whence their food is extracted, and not seriously impoverish the soil. New York contains a large population in its numerous cities and villages; and we should like to have every man see as we do, that these cities and villages are fast destroying the natural fertility of the land that both feeds and clothes their inhabitants. The United States census for 1840 and 1850, and other official returns made for purposes of State taxation, prove that the pastures of Kentucky and Tennessee have suffered only a little less than those of New York. Ohio and Indiana, Michigan and Illinois, are pursuing the same exhausting practice, but the evidence is not quite so ripe as it is in the older States named, for statistical demonstration. There is a physical impossibility of extracting unlimited quantities of bone earth and potash in grass, to be wasted, and not ruin the land. The last time we passed through the State of Ohio on the railroad from Sandusky to Cincinnati, we saw many tons of hay purchased north of Springfield at three dollars

a ton on its way to New Orleans, Mobile, Texas, and the West Indies. Railroads are aiding powerfully to deplete American pastures and meadows which yield both hay and stock of all kinds in such immense quantities. When will these iron ways begin to carry back from cities and the ocean into the country the essential elements of grass and grain, wool and cotton, to recuperate the long injured farms of the interior? Those that dwell in cities have not the power to annihilate a single atom of matter, and may, if they will, give back a full equivalent for what they consume. But as we do not expect that the idea of restoring the elements of grass to pastures will be adopted by farmers in our time, we shall best promote their immediate interests by showing how close feeding in spring and the early part of summer diminishes the growth of grass one-half, taking the season together.

Close feeding of pastures is nothing more than severe pruning; and it matters little whether one cuts off all the limbs of a tree, or all of its roots—either greatly retards its growth, as may be seen in dwarf hedges, formed simply by close clipping. Estimated in pounds of roots, trunks, limbs, and leaves, this severe pruning diminishes the growth two-thirds or three-fourths. Permit cattle, sheep, and horses to prune forage plants by biting them close at the ground, and all such mutilated plants are stunted for a time; and if the severe pruning is often repeated, the growth of both roots and stems will be reduced to one-fourth of what the land without any manure is capable of producing. By all means allow grass to cover the ground well and get up nearly into blossom, especially if clover, before stock is permitted to feed it severely. In nine cases out of ten, close feeding is unwise; for unless one can irrigate or is favored with genial rains, much time must elapse before the grass can recover and afford good pasturage. Lime, ashes, gypsum, salt, and bone dust all pay well, as a general thing, when applied to pastures as a top dressing in the spring, or fore part of summer. Many pastures and meadows need more grass seed as well as manure. To scarify the surface with a sharp harrow when fertilizers are applied is a capital operation. Make the ground rich, cultivate thoroughly, and no other crop will pay better than good pastures and meadows.

SHEEP BREEDING.

THE *Boston Cultivator* of April 16th and 23d, contains an elaborate criticism of an article on "Sheep Breeding," written by P. A. BROWNE, L. L. D., of Philadelphia, and published in the agricultural part of the Patent Office Report for 1851, which, from the importance of the subject discussed, deserves some notice at our hands.

Our Boston friend commences his "review" by remarking that "the main object of the writer [Dr. BROWNE] appears to have been to introduce a new classification of sheep in regard to their natural affinities. He divides the common sheep into two species, which he designates as "the hairy sheep, and the woolly sheep."

Whatever may have been the object of the author of the essay on "Sheep Breeding," in the Patent Office Report, the following comments of the reviewer strike us as singularly irrelevant:

"The inquiry may be made why we have devoted so much space to the refutation of such wild notions (and we have noticed but a tithe of them) as are contained in Mr. Browne's essay. We reply, the source through which they appear, gives them influence. The government of the United States assumes to give the people valuable intelligence through the medium of the Patent Office Reports. It employs an agent, styled an Agricultural Clerk, to collect and prepare this information. But if the character of these Reports is not what is assumed—if instead of truth they propagate pernicious error—they are an injury to the people and a disgrace to the government. Politicians talk of reform, progress and improvement, and captivate the credulous with these attractive words. Agriculture, the most important of all national interests, ought to receive the first efforts for advancement from the servants of the people. But when the sanction of a government functionary is given

to such absurdities as are put forth in the essay we have been considering, instead of effecting improvement, it encourages miserable humbugery.

"If any further excuse is necessary to justify the space we have occupied in this review, we might say that the essay in question has already received notices of commendation from papers devoted to agriculture. It is so noticed in the *Southern Cultivator* for May, 1852, in an article headed, 'The Science of Improving Domestic Animals, by DANIEL LEE, M. D.' (It is not improper to mention that the Report of the Patent Office which contains this essay, was published while Dr. LEE was Agricultural Clerk in that department.) Mr. BROWNE's views have also, we are sorry to say, been highly spoken of by T. C. PETERS, Esq., editor of the *Wool Grower*. (See January number, current vol., of that paper.)"

The legitimate inference from the above would seem to be, that Dr. LEE ought to have excluded a communication on an important branch of husbandry, because there might be a reasonable doubt whether a natural line can be drawn between sheep on which wool predominates and those on which hair predominates. Such a rule, rigidly carried out, would prevent the making of any agricultural report whatever, or any agricultural paper; for men of intelligence enough to have their own opinions on rural affairs, neither think alike, nor write alike; and they cannot at any agricultural meeting, be forced to talk alike. One man's wisdom is to another folly in the extreme; and without toleration and forbearance, all popular discussion is impracticable.

In the Patent Office Report for 1850, Mr. MARK K. COCKRILL, of Nashville, Tenn., who has some \$200,000 invested in sheep and land to keep them on, says: "I have studied this subject thirty-five years [the breeding of sheep] with diligence and devotion, and thought I had come to correct conclusions: but the commissioner, Hon. E. BURKE, decided that I was wrong and most decidedly mistaken in the whole matter." Mr. C. speaks of Mr. BROWNE as a gentleman of science, "who has devoted years to the study of wool and hair;" and, after quoting his microscopic measurements of *sixty-five* samples of wool, eighteen of which came from Europe, and were furnished by Mr. FLEISCHMAN, he adds: "Mr. BROWNE deserves from our wool-growers a service of plate and a suit of clothes from the fleece of 2186, for his investigations on this important subject."

Mr. B. was endorsed not only by the veteran editor and founder of the *Plow, Loom and Anvil* and the Hon. R. R. REED, a large wool-grower and member of Congress from Pennsylvania, but by a number of the most intelligent farmers in Virginia, Maryland, and Delaware. The editor of the *Boston Cultivator* is too provincial in his views as to what men may be allowed to say on a purely scientific subject, the physiology of sheep breeding, in a national work on American Agriculture. Agricultural writers in Pennsylvania and Tennessee have as good a right to be heard in a Patent Office Report printed by Congress as any in Massachusetts or New England. Why not?

Mr. BROWNE may be in error; we, certainly, have never "endorsed" his peculiar theory in reference to hair on sheep, or wool on the heads of negroes. What we said in the *Southern Cultivator* in treating of the "Science of Improving Domestic Animals," in which the views of Dr. BROWNE were incidentally referred to, was in condemnation of the too common practice of uniting the extremes of different breeds and species of animals. The mammoth New Oxfordshire or Leicester sheep may be descended from the same original race, as the smallest Saxons or Merinoes; and so may the large cart-horse of London and the Shetland pony; but such extremes are too great for a direct and successful cross between them. Some of the very large Durham stock imported by Mr. CLAY found its way down to Georgia, and was crossed on the small native cattle of the latter State. The issue was anything but satisfactory. Piny woods pastures the year round were sorry ranges for animals whose progenitors had been pampered for many generations on the richest feed in Kentucky and England.

No matter what animals a farmer breeds, he should make good keeping an indispensable element in his system, and aim to realize a steady improvement by small but sure changes for the better. The value of crosses is often over-estimated. We have heard

the largest sheep breeder in the State of New York say, that he had seriously injured his flocks of fine Merinoes by an infusion of Saxon blood of different families; but the way is to keep it as pure as possible, and thus ever breed upward. Probably no man in this country has been more successful in sheep breeding than Mr. COCKRILL, who believes in the theory so vehemently condemned by the *Boston Cultivator*. The letter of Mr. C. will be found in the Patent Office Report for 1850, commencing on page 253. All who believe that the writers for Patent Office documents are incompetent to the task, will best serve the farming interest by inditing better communications, and forwarding them to the Commissioner of Patents, which is the true way to improve the professional character of the reports.

NATIONAL EDUCATION IN THE UNITED STATES.

SPEAKING a common language, living under a common constitution which is the supreme law of the land, and having a common destiny, what is there to prevent our establishing, on the principle of voluntary and cordial co-operation, a wise system of National Education which shall benefit alike the indefinite millions to be educated in common schools, and the indefinite thousands to be instructed in all the higher seminaries of learning? All appreciate the advantages of the most extensive association of political corporations organized as townships, parishes, counties, districts, towns, cities, territories, and states, under the federal government. Churches and religious societies prosper by the joint labors and happy union of vast numbers who often reside thousands of miles from each other, and yet avail themselves of the great American idea which unites the strength and force of millions for the elevation and protection of the humblest citizen of the republic. This principle of national union may be successfully adopted at once by the one hundred thousand intelligent educators in the United States for the improvement of their not-sufficiently esteemed profession. Professors and teachers of every grade have only themselves to blame, if the popular mind regards their services and calling with less favor and consideration than the important interests involved would lead us to expect. The whole art and science of education must be brought before the people in a conspicuous national theatre, like the acts of our leading politicians and statesmen, before the profession of an educator can take rank with that of a general or captain in the army, or a lieutenant in the navy. Men that bury their talents in the ground, court obscurity, and conceal the statistics of popular education in several States, so that it is with the utmost difficulty that the truth can be learned out of their precincts, can reasonably expect nothing better than universal neglect and apparent disrespect.

Feeling a deep interest in the multiplication of common schools and libraries, and their improvement in the States where we know they are few in number and poor in quality, we have tried for years to obtain reliable statistical information on this subject, to publish in the Patent Office reports prepared by the writer, in which the facts would have a wide circulation. It is now three years since the U. S. census was taken, and we have yet to see the first table in print relating to the educational institutions of the nation. Those that refer to manufactures, agriculture, commerce, and population, have been given to the public more or less perfect and complete.

Of all the great interests of the American people, that of education is most neglected by national statesmen. Is this condition of things to continue to the end of the present century? We think not. A United States Journal of Education, collecting reliable statistics from all the States and Territories, and carrying the best thoughts and suggestions of the wisest educators in the world into every school, academy, and college in the Union, must ere long be one of the many rich fruits of our progressive mail facilities, and

still more progressive knowledge. The teachers and pupils in Maine, California, Mississippi, and Wisconsin, should hold a regular professional correspondence, so far as to learn the progress of education in each State, the text-books used, the system practiced—its success, advantages, and disadvantages, as developed by experience. Let a united, national effort be made to improve the schools and elevate the masses in every county and district throughout the republic, and an incalculable amount of good may be achieved and lasting honors won. Our country already enjoys a high reputation in Europe for its excellent schools. The *London Chronicle* remarks:

“When we consider what has actually been done in transatlantic England in the cause of education, and compare it with what one of the most advanced of our practical statesmen only dubiously proposed to do in our own England—it is impossible not to be impressed by a deep feeling of the contrast. Let the truth be told. It is not only Lord John Russell who fall beneath the height of this great argument, but the English public in whose name he proposes to legislate. There is no subject on which public opinion has made so little progress as on this. The British mind cannot act freely in this matter. The mist of old prejudice still settles heavily on her. The *idol specus* hover in this twilight. False fears—superstitious alarms—baseless visions of evil—overcast some of our clearest intelligences, and shake some of our firmest minds, whenever the practical problem is proposed. How shall we educate the millions of our people?”

A new spirit has come over the dream of John Bull. The United States are no longer ridiculed and treated with contumely by the leading London journals. They begin to talk familiar of “trans-atlantic England;” they are “impressed by a *deep feeling* of the contrast” between the deplorable lack of popular education in rich and densely populated England, and in comparatively poor and sparsely settled America. The following paragraph is copied from *Dicken's Household Words*:

“It has been calculated that there are in England and Wales 6,000,000 persons that can neither read nor write—that is to say, about one third the population, including of course infants; but of all the children between five and fourteen, more than one-half attend no place of public instruction. These statements—compiled by Mr. Kay from official and other authentic sources, for his work on the social condition and education of the poor in England and Europe—would be hard to believe if we had not to encounter in our every-day life degrees of illiteracy which would be startling if we were not thoroughly used to it. Wherever we turn, ignorance, not always allied to poverty, stares us in the face. If we look in the *Gazette* at the list of partnerships dissolved, not a month passes but some unhappy man, rolling perhaps in wealth, but wallowing in ignorance, is put to the *experimentum crucis* of ‘his mark.’ The number of petty jurors, in rural districts especially, who can only sign with a cross is enormous. It is not unusual to see parish documents of great local importance defaced with the same humiliating symbol by persons whose office not only shows them to be ‘men of mark,’ but men of substance. We have printed already specimens of the partial ignorance which passes under the pen of post office authorities, and we may venture to assert that such specimens of penmanship and orthography are not to be matched in any other country in Europe.”

There is a greater lack of common school education in the Middle, Southern, and Western States than a New Yorker or New Englander would believe, if he were not personally conversant with the facts of the case. We allude to them only for the purpose of exciting a common and earnest effort to remedy the evil. We look upon all the States as a *unit*, and wherever schools are wanting or defective, there we would labor to raise the standard of popular education, and invite its friends—not in that district alone, but everywhere in the republic—to support it with dignity and success. The strong are morally and legally bound to support and defend the weak when an enemy invades their territory. Our government supports a small army and has provided a powerful militia force of citizen soldiers for this purpose. Military aid is not the only assistance due from one good citizen to another. Good citizens now have a thousand million acres of public lands, and an immense federal income. Shall little or none of this vast public treasure go to benefit the common schools of the several States, as the distribution of the United States Surplus, in 1837, benefitted the common schools of New York?

THE NEAT CATTLE OF THE UNITED STATES AND WESTERN EUROPE.—FROM WHAT PARENT STOCK HAVE THEY DESCENDED?

It is easy to trace the neat cattle and other domesticated quadrupeds of the United States, to their first importation from Europe by early emigrants to this continent. But naturalists are not entirely agreed as to the origin of the ox family described by TACITUS as constituting the herds of the primitive Germans, and the neat stock found in the possession of the ancient Britons when their island was invaded and conquered by the Romans. Long before the creation of man, Great Britain, in its mild, humid climate, possessed peculiar grass-growing capabilities, and was by nature the parent land of numerous graminivorous animals. So early as the newer pliocene formations, in drifts and fresh water formations, "short-horned cattle of an inferior size," as well as the shaggy Bison and mighty Urus (*Bos primigenius*, *Bojan*), left their remains mingled with those of the mammoth and rhinoceros. Cæsar describes an ox almost equaling the elephant in bulk, which Prof. OWEN, in his work on the "British Fossil Animals," regards as belonging to the fossil family, *Bos primigenius*; and according to some it was the progenitor of our present domesticated cattle. It is more probable, however, that the "small Short-horned Ox," whose bones are found in fresh water formations, which Mr. OWEN calls *Bos longifrons* (long-sculled ox) is the true parent of British cattle. In an interesting paper on the "extinct and existing Bovine Animals of Scandinavia," Prof. NILSSON, of Lund, thus describes the Short-horn Ox of Prof. OWEN: "As far as we yet know it is the smallest of the ox tribe that had lived wild in our portion of the globe; the whole length from the muzzle to the end of the rump bone, he supposes to have been about six feet eight inches; and, from the slender make of its bones, it had rather resembled a deer than an ox. The forehead upwards over the eyes is flattened, with an edge going along the frontal seam, which is most prominent upwards, and ends with a rounded indentation backwards. Between the eyes is a more or less considerable depression, above which there is often a rising, and beneath which lies an incision for the nasal bones, which go right up to the line drawn between the lower borders of the orbits. (Thus the frontal bones are not longer in this species than they are in the Taurus or Urus.) The horn cores are small, cylindrical, short, curved only in one direction forwards; sometimes, though seldom, downwards, in the plane of the forehead. The form of the temporal cavity is, behind, transverse—obtuse; before, oblique—pointed; its hinder part, to the angle above the joint of the underjaw, only one-fourth part broader than the fore part. The anterior palatine apertures lancet-shaped, at the back oblique inward-pointed; the back ones lie between the palate bones; the nape transverse, upwards with a vertical indenting; downwards with a vertical edge over the circular foramen of the nape. The skull of this species varies considerably in size, and even something in form, according to its age and sex. The species, however, is always known by a protuberance upon the upper part of the forehead in front, and an indenting backwards."

This description is somewhat too professional to interest most readers; but we are of the number who believe that the stock-grower and comparative anatomist should unite their knowledge and labors for the advancement of an important public interest; and this has been done in Great Britain for many years with distinguished success. Between the mammoth *Bos primigenius* and *Bos longifrons*, there is another fossil ox, which Prof. NILSSON denominates *Bos frontosus*, whose bones are found in Sweden. From this species, we suspect the hornless Galloway cattle, (some good specimens of which may be seen in Augusta, Charlestown, and Washington,) are descended. The following briefly indicates the distinguishing features of the *Bos frontosus*. The ridge of the occiput rises high in the center convex; the horns, which rest on longer pedicles than among any known species of ox, are short, and directed outward, backward, and

downward, and then bent forward. The size of the skulls denote an animal which, although much less than the enormous and savage Urus,* (*Bos primigenius*) it is yet considerably larger than the *B. longifrons*.

Some have supposed that hornless cattle were called into existence by cutting out for many generations the young horns of calves, until this osseous protuberance ceased to grow on the skull; and this explanation appears not improbable. It is a great mistake to suppose that neat cattle have been changed by domestication, mainly within the last thousand years; although hornless bulls and cows are doubtless of recent origin, say within two or two and a half centuries. At the commencement of his operations in England, CÆSAR tells us in his Commentaries that "the country was well peopled," and that they possessed "*pecorus magnus numerus*," (lib. v. 12) numerous herds of cattle; for *pecus* refers often to cattle as well as sheep. He adds that the natives of the interior seldom trouble themselves with the tillage of the ground, but live on *milk* and fresh meat, and clothe themselves with skins. For ought that is known to the contrary, the people of Great Britain and Germany were pastoral in their habits before the time of ABRAHAM, and in no respect inferior to JACOB in the art of making "ring-streaked and speckled" cattle. We have no doubt that the famous "Wild White Cattle of Chillingworth" were a purely artificial breed produced in an early age, and then during protracted civil wars allowed to become wild in the extensive forests of princes and noblemen. Prof. BELL, in his valuable work on "British Quadrupeds," says: "It appears the ears are more liable to retain color in animals which become white by domestication than any other parts. This is the case as we have seen with the Guinea pig, and it is no less true of the ox and some others." Prof. FLEMING remarks that he never saw an entirely white ox, but that the ears always remained of a different color. In the Chillingworth white cattle this peculiarity still exists. NILSSON alludes to the fact that no strictly wild white oxen are known to naturalists. As these "wild white cattle" are the oldest known fancy stock in Europe, some notice of them before we attempt to trace the origin of the Short Horns, Devons, Herefords, Ayrshires, Galloways, Alderneys, and others, is due to the dignity of the subject.

Early modern history found these white cattle in the "Great Caledonia Forest" which formerly covered the country from Stirling to Athol. In a history written by BERNIER, and published in Paris in 1526, entitled, "*Scotorum Historia a Prima Gentis Origine*," these cattle are described as "*boves candidissimos in formam leonis jubam ferentes*," perfectly white, and having manes like lions. Their flesh is said to have been tough and cartilaginous, and their tempers exceedingly ferocious, and quite untameable. That these white wild cattle of the 15th century descended from a domesticated race, appears from the following historical allusions of an earlier date. In Leges Wallice, of "Howell Dda," the Welsh laws of King HOWELL the Good, which date from about A. D. 942, or before the middle of the tenth century, we find an account of the payment of a fine or forfeiture to the crown, in which *a hundred white cows with red ears* were demanded, and a hundred and fifty black, spotted or red ones, considered as an equivalent. Besides the hundred white cows, the offending party was required to furnish "*unum taurum auribus rufis*," (one bull with red ears.)

Mr. YOUART supplies us with an historical fact which proves that the ancient white cattle of England were domesticated and highly prized. "SPEED tells us that MAUDE DE BUREOS, in order to appease King JOHN, whom her husband offended, sent to his queen a present from Brecknockshire of *four hundred cows and a bull, all white with red ears*."

Neither the roast beef of old England, nor the breeding of fine cattle there is a modern invention. It has been suggested that the Romans introduced their superior

* Speaking of the Urus, a native of Britain, CÆSAR says: "Great is its strength, and great its speed; and it spares neither man nor beast which it catches sight of; and that the man who killed the greatest number of them even by the pitfall, brings their horns as an evidence of his prowess, and is highly applauded by his countrymen; and so savage is his nature, that though taken never so young, it cannot be tamed."

stock into Great Britain; but there is reason to believe that the natives had better cattle than Italy or the South of Europe could boast, before JULIUS CÆSAR was born. Like most of the States in this Republic, the British Islands and Germany are naturally adapted to all pastoral operations. The live stock of this country, so recently introduced from Europe, is now worth very nearly six million dollars; and if we can induce the American people to study the natural laws by which all domesticated animals are governed, their value may soon be doubled. More attention must be paid to grazing lands and winter forage, and greater care is necessary in propagating only from the best families and races. By rearing none but good animals, and always keeping them in prime condition, a most auspicious change in the neat stock of the United States might be realized in a few years. On the other hand, if no attention is paid to the daily supply of food and water, and none to the principles of breeding, deterioration is inevitable. Our native cattle have in no respect been fairly dealt by; and we insist on the public duty to give them a "fair chance" to win the highest honors as milkers, working oxen, and meat for the table. It does not detract from the just merits of the Devons, or Short Horns, Herefords, or Ayrshires, to maintain the necessity of treating all other neat cattle with equal care and skill for the benefit of the whole community. Speaking in round numbers, the food annually consumed by twenty million head of cattle in this country is capable of yielding in milk and beef a net gain of one hundred million dollars, over and above what is now realized. These living machines, kept mainly to convert grass, grain, and roots into milk and meat, can never be understood and used to the best advantage until they are carefully studied.

THE WANTS OF THE SOIL.

UNDER the above heading the *Connecticut Valley Farmer and Mechanic* contains some sensible remarks prefixed to an extract from a memorial to Congress in favor of appropriating a part of the public lands for educational purposes, and especially to found a National Normal School, which was drawn and presented by the proprietor of the *Genesee Farmer*. As this memorial has never been noticed, we believe, in this journal, the extract is copied from the *Farmer and Mechanic* below:

"At present, not far from three-fourths of the entire labor and capital of the United States are employed, either directly or indirectly, in the great work of robbing the soil of the few things that God placed in it for the support of vegetable and animal life, without making, or pretending to make, any adequate restitution. All tillage is a most unnatural operation, and the matter removed in crops by no means indicates the whole of the loss of the elements of fertility that arated fields sustain. An intelligent wheat-grower in Wisconsin writes to the agricultural department of the patent office, that lands which have been cultivated twelve years, in that new State, now yield but half the annual harvests that they did when first tilled and seeded. An extensive corn grower in Indiana informs your memorialist, that the rich river bottoms of that State now yield only thirty-five bushels per acre, which once produced, with an equal amount of tillage, seventy bushels per acre. Maize being by far the most important crop grown in this country, much pains have been taken to learn the commercial value of the raw material necessarily consumed to form a bushel of that grain; of which over six hundred million bushels are annually extracted from American soil.

"A gentleman in Connecticut writes, that his farm, of some two hundred and fifty acres, has been cultivated two centuries, and consequently has reached what may be regarded as the normal condition of long-tilled earth. He finds it necessary to apply ten cords of compost manure to an acre, to raise forty bushels. The manure costs him

a dollar a cord, and twenty-five cents per bushel of his crop. A corn grower in Virginia has tried many experiments with guano, and finds that one hundred pounds which cost two dollars and fifty cents, will generally add ten bushels to his harvest. The manure, like that used in Connecticut, costs a quarter of a dollar for enough to produce a bushel of corn. Many letters from practical men, of close observation, and large experience, have been received at the agricultural department of the Patent Office, going to show that if one draws not upon the natural fertility of land to form his corn plants, the raw material to make a bushel of corn can rarely be obtained for a less sum than twenty-five cents. There is collateral evidence worth naming, that corroborates this estimate. Long experience in France and Belgium establishes the fact, that the *excreta* from an adult person are worth five dollars a year for agricultural purposes. The night soil obtained from the human species is equal to the production of twenty bushels of corn to each inhabitant; and for the obvious reason, that no animal has the power to annihilate a single atom consumed in its daily food, nor to create one, if needed to prevent starvation. Field laborers at the South consume about thirteen bushels of corn meal, and as much bacon as from ten to thirteen bushels of corn will make, as the yearly allowance to each. Children consume less, but often waste more, than adults. Taking our entire population of 25,000,000 at this time into account, and each consumes, in one form and another, fertilizing atoms drawn from the bosom of the earth, equal to those contained in twenty bushels of maize; showing an aggregate annual consumption of 500,000,000 bushels, which the soil loses as effectually as it would if that amount of grain were cast into the sea every year."

BRITISH AND AMERICAN AGRICULTURE.

(Continued from Page 146.)

A. You were asking the other day respecting English cheese making, and the difference between their process and our own. The Gloucester dairy districts I did not visit, but in the equally celebrated "Cheshire cheese" district I spent considerable time. I would here say that many grocers told me that the American cheese was greatly preferred among the poorer classes (or those that eat cheese not as a luxury, but as their principal food) to the best Cheshire cheese. The prices obtained at retail when I was there, were Cheshire cheese, 12 cts. per lb.; American cheese, 13 cts. per lb. I was also pleased to find that the storehouses of many grocers I visited were filled with American *bacon*, obtained principally from Ohio. The sides were large and very fat and when in good condition were of a delightful flavor and much preferred to English *bacon*. But it was not always in good condition, and for this reason the dealers were a little afraid of large orders. The grocers were strong free-traders and seemed to prefer to sell American cheese and *bacon*, to that of "domestic manufacture."

B. That argues little for their patriotism, but I suppose they consider themselves as having been grossly injured by the aristocratic land-owners, and now that they begin to feel their power they are not over-scrupulous as to the means employed to retaliate.

A. That is so. But we will not talk of free trade, I am tired of it. In England you cannot talk for five minutes on *any subject* but what free-trade is dragged in. Thus in the matter of cheese making, I was desirous to make myself acquainted with their process in all its details, but in most cases they mixed up their accounts with descriptions of the good times under "protection" and the miseries they were now suffering under "free-trade," that I could make nothing of them. For instance I would ask, how much do you realize per annum from each cow? They would tell me that they formerly made £15 (\$75) per head, but now they were *losing money*. "Free-trade be ruining the farmer," is the universal wail from Lan-let's End to John o' Groat's.

B. Do you suppose they ever made \$75 per cow a year?

A. No doubt about it. One of the most intelligent farmers I met with informed me that he averaged \$75 each from thirty cows for many years, and even then, under free-trade, he told me—

having taken me into the middle of a large field, and whispering lest any one should hear and tell his landlord—that last year he made \$60 per cow. He thought dairying by far the most profitable part of farm husbandry. Cheese then sold for 10 cts., and butter for 25 cts. per lb.

B. Does their system of cheese making differ from our own materially?

A. The farmer that I have just mentioned as making \$60 per head from his 30 cows, adopted, in general, this plan:—The cows were milked very regularly at 5 o'clock in the morning and 5 o'clock in the evening. Usually there were four milkers—the lady of the house, her two maid servants, and one man—with another man to carry in the milk in a large tin kept for the purpose. The evening milk was placed in the dairy, or cellar as it really was, and remained in deep lead vessels constructed somewhat similar to a hopper, with a hole at the bottom so that the milk could be taken out without laddling. The cream was skimmed off next morning, and then the milk was placed in the cheese tub and, together with the morning's milk, was made into cheese. The cream was churned once a week. In this way he obtained from 60 lbs. to 100 lbs. of butter per week. I think I have told you that they make "whey butter." Instead of throwing the whey into the hog cistern at once, it is placed in a large old cheese tub for 48 hours. In this time a considerable quantity of cream rises to the surface and is skimmed off and churned once a week. This farmer often had 20 lbs. of whey butter per week. It sold for about half the price of the good butter, or about 10 cts. per lb.

B. That is a good price for such an article. It might do very well to sell, but I should not wish to eat it. It seems to me it must be a mean kind of butter. Did you like it?

A. I did not; and yet it is not so bad as you would imagine. It has a peculiar sweet taste from the large quantity of sugar of milk which it contains. It also contains more curd than common butter, and this gives it a cheesy taste; so what with cheese and sugar it is not of the best quality imaginable.

B. I recollect Dr. M. M. ROGERS saying in one of his letters from Europe, in the *Rural New Yorker*, that it was next to impossible to obtain good butter in England, in fact that their butter was white, lard-looking stuff, rancid, full of hairs, and, altogether, an unpalatable grease.

A. That is not so. As a general thing their butter is far superior to ours. Dr. ROGERS must have been very unfortunate in his choice of hotels, &c., to have met with such butter. WARREN ISHAM, of the *Michigan Farmer*, judging from his letters, was also equally unfortunate. I like our cheese better than theirs, and some of our butter is as good as theirs, but we have large quantities of it that are very inferior to Irish, Scotch, and English butter, and even to that imported from the continent.

B. At what temperature do they churn their butter and set cheese?

A. About 55° Fahr. when the cream is placed in the churn gives the best quality of butter, though somewhat more labor is required to churn it than if it were a little warmer. They never like their butter to come in less than 40 minutes. The whey butter is longer in coming, for they are particularly careful to churn slowly when the butter is come, and when all that is required is to gather it into lumps. The rennet is usually added to the milk when it is 95° Fahr. This is warmer than is common with our best dairymen, but as they do not scald their curd, as we do here, it may not be too warm. The cooler the milk when "set," the tenderer and sweeter is the cheese. Skim milk, too, should be colder "set" than fresh milk. When the curd is come it is finely broken with an instrument made for the purpose. It is simply a circular tin rim about half an inch wide, interlaced with wire, leaving spaces about an inch square. It is attached to a wooden handle and breaks the curd very effectually in a few minutes. After this is done the curd is allowed to stand for some time, till it again becomes one mass. The whey is then removed, the curd cut into squares, placed in a strong cloth and pressed to force as much of the whey out of it as possible previous to salting. Afterwards it is broken up as finely as possible and salted. The curd is then placed in a vat of the size the cheese is required. It has several holes at the bottom and sides to allow the whey to run off readily. A large cloth placed in the vat is then filled with the curd. A fillet of tin three to six inches wide is placed in the vat an inch or so, and the cloth is drawn up straight; the curd is then added, and in this way stands several inches above the wooden vat. The cloth is then lapped over the top; a smooth board is placed on this and the whole is then placed in the press. There it is allowed to remain for a few hours when it is taken out; a clean cloth is placed around it and the cheese is perforated with a skewer and again pressed. The cloths are changed several times, and great care is taken to press out all the whey. The cheeses are kept in the cool,

damp cellar-dairy house for a week or ten days. They are then taken to a dry, dark, airy room, where for some time they require turning every day to prevent their molding on the side next the floor.

B. The practice very generally prevailing in Western New York of making butter only, must be anything but economical.

A. It is a shameful waste. The milk from which we get 100 lbs. of butter contains at least 75 lbs. of casein and 75 lbs. of sugar of milk. I do not know from actual experiment, but I think we should get twice the weight of cheese that we now do of butter. The whey of course is not so good for hogs as the sour milk, but it is nevertheless good food from the large quantity of sugar and lactates it contains.

B. I think we might do as you say the English farmers do—take off the cream that would rise in 12 hours, and then make cheese from the skimmed milk. In this way we should get superior butter and tolerable cheese that would bring five or six cents per lb.

THE RUTA BAGA.—A PROFITABLE CROP.—As the season of planting has come, the question is to agriculturists timely and important, whether the cultivation of roots is not worthy of increased attention. With the hope of directing the attention of my brother farmers to this subject, I will present the result of my experiment last season with the Ruta Baga.

The land selected—one-fourth of an acre—was adjoining that on which I had raised in the preceding year sixteen hundred and sixty-six bushels per acre. Geologically it is primitive, rocks principally granite, and natural timber oak and maple. The soil is somewhat heavy, but free from standing water; it was an old meadow, and had become unproductive; in the preceding year it had been broken up and planted to potatoes. It was cultivated for the Ruta Baga crop by removing all rocks and stones, well manured and plowed as deep as possible with a common plow. After a few weeks it was manured again, and plowed one-half as deep as before, and thoroughly harrowed. Previous to the fifth of June it was plowed and harrowed the third and fourth times. Furrows were then drawn two feet apart, into which were drilled four loads of the richest composition of barnyard manure. The furrow was then replaced with the plow, and on the top of the ridge a slight channel was made with the hoe. In this channel and directly over the manure the seed was deposited by hand some half dozen in a place ten inches apart and covered with a rake. When the plants appeared, all but the best ones were removed. They were carefully hoed at intervals of a week four times, when they became too large to work among without injury. The manure used was sheltered barnyard. They were planted June 20, and gathered early in November. The expense was—

To removing stone.....	\$1.50
Plowing and harrowing four times.....	4.00
Sixteen loads of manure, $\frac{1}{2}$ half charged.....	4.00
Forming ridges, raking, and planting.....	1.25
Weeding and thinning.....	1.50
Hoeing four times.....	3.00
Harvesting.....	2.00
Rent of land 50 cts., seed $12\frac{1}{2}$ cts.....	0.62 $\frac{1}{2}$
	<hr/>
	\$17.87 $\frac{1}{2}$

I had a large quantity of tops worth \$2, and over three hundred bushels of roots at the low price of 16c—\$48—making an income from one-fourth acre \$50; leaving a profit of \$32.12 $\frac{1}{2}$. The cost per bushel was five cents. JOHN T. ANDREW.—*West Cornwall, Conn.*

CORN.—PLAT VS. HILL CULTURE.—In your last number under the head of "Spring Work," you express a desire to be informed as to the "relative advantages of hilling up corn, or letting it remain as planted, merely keeping it clean by horse and hand hoeing." After experimenting both ways for some time past, I have not the slightest doubt as to which mode is preferable. The planting being in rows at right angles, I simply use the Corn Cultivator crosswise, and thus leave the field mellow and level. This may be done as often as necessary; but, as it is easily done, I do it three times, and at each time let a man follow up with a hoe to repair injuries, which is done in a short time, and also to destroy the suckers at the last time. A ten acre lot can thus be easily and thoroughly dressed very soon, compared with the tedious hoeing and hilling system. It is obvious that this method decidedly economises both *time* and *labor*, as the horse and driver do nine-tenths of it on a walk. But this is not all. The stalk, having but one set of roots (which are long

and strong), shoots up vigorously and well supported, and consequently is not much affected by strong winds; the growth being steady and strong, the yield is more productive; there being no furrows, ridges, or hills, but all on even surface, it is quite natural that this is the true way to resist a drouth. This was abundantly demonstrated the last season, so unusually dry, with my yield.

If it be desirable to seed the field with clover and timothy, or either, it can successfully be done at the last cultivating in July, for pasture or meadow the next season. If this be done, the stalks should be cut off close to the ground in the fall. It is surprising to see the happy effect of this way and time of seeding. I can show a field treated thus the last season, having grass six inches high and looking as rich as an old meadow of two or three years husbandry.

Persuaded that the cultivator ought to be adopted, instead of the old fashion hoeing and hilling system, I am prepared to believe that it will not be long before farmers will have but one opinion on the subject. To become fully satisfied, I think they need but one trial in a fair field. The result will readily establish this way of managing corn, for vigorous growth and yield, for security against the gale, for resisting a drouth, for facility of seeding to grass, and above all, for economy of time and labor. P. J. WAGNER.—Fort Plain, N. Y.

ANALYSES OF CLAM AND OYSTER SHELLS.—The following is from *The Plough, the Loom, and the Anvil*, and clearly illustrates why shell lime is found practically to be more valuable for many soils than stone lime.

“MRS. EDITOR:—in your January number of the *Plough, Loom, and Anvil*, is a brief notice of the application of oyster shells as a manure for fruit trees. That those who use them may know what they are adding to their soil when they apply them, I here send you for publication their analysis, together with the analysis of the clam shell.

“In the vicinity of the sea-coast, and in the neighborhood of large towns, the common clam and oyster shells are quite extensively used by farmers as a manure. They are sometimes thrown upon the land whole, sometimes previously broken into fragments, and often burned. As a general rule, the latter method may be considered preferable to either of the others.

“Soils, however, containing already a sufficient quantity of lime for present demands, and where the object is merely to compensate for the gradual waste, shells unburned may answer quite as good a purpose as those which have been burned. When used before burning, owing to their compact texture, they are acted upon but slowly by the ordinary agents to which they are subjected, and hence it requires a much larger quantity of them than of burned shells to exert, in a given time, the same degree of influence upon the soil. Unburned, their effects are not materially different—throwing aside the small quantity of animal matter and soluble salts they contain—from ordinary lime stones broken equally fine and disposed of in a similar manner.

“Before burning—omitting the moisture—they are made up principally of carbonates, with a small quantity of organic matter, phosphates, sulphates, and chlorides. The process of burning expels nearly all of the carbonic acid and organic matter, with some of the chlorine, leaving the phosphates, sulphates, and a small amount of chlorides and carbonates. The rest, lime, which makes up nearly the whole, is in a caustic state.

“As the composition of these shells, both before and after burning, may be of some interest, I here give them:

“The common clam shell (*Genus mercenaria*)—100 parts of the dry unburned shell gave of

Silica.....	none
Phosphates of lime, iron, and magnesia.....	1.250
Carbonate of lime.....	69.204
Sulphate of lime.....	0.515
Lime, probably combined with organic matter.....	13.907
Magnesia.....	1.400
Potassa.....	1.547
Chloride of Sodium.....	6.101
Organic matter.....	6.050
	100.574

“The same shell, burned till the organic matter and carbonic acid were nearly all expelled—100 parts gave of

Silica.....	none
Phosphates of iron, lime, and magnesia.....	1.856
Lime.....	75.610
Sulphate of lime.....	1.210
Magnesia.....	2.073
Potassa.....	2.516
Soda and chloride of sodium.....	10.386
Carbonic acid.....	3.043
Organic matter.....	trace
	99.999

"Shell of the common oyster (*Ostrea borealis*)—100 parts of the fresh shell, deprived of water, gave of

Phosphates of iron, lime, and magnesia.....	0.842
Carbonate of lime.....	86.203
Sulphate of lime.....	2.061
Lime, probably combined with organic matter.....	6.035
Magnesia.....	0.338
Potassa.....	0.191
Soda and chloride of sodium.....	0.620
Organic matter.....	3.613
	99.973

"The same shell, burned till nearly all the carbonic acid and organic matter were expelled—100 parts gave of

Phosphates of iron, lime, and magnesia.....	0.860
Lime.....	91.918
Magnesia.....	0.560
Potassa.....	0.316
Soda and chloride of sodium.....	1.144
Sulphuric acid.....	2.011
Carbonic acid.....	2.660
Organic matter.....	trace
	98.739

"From these analyses it will be seen that the shells of the clam contain a much larger per centage of phosphates, magnesia, potassa, and soda, than those of the oyster; while the latter are much the richest in lime and sulphuric acid. Yours, truly, J. H. SALISBURY, *State Chemist.*

"OLD STATE HALL, ALBANY, Feb. 14, 1853."

SOLUBLE SILICA.—The following important item is from the Transactions of the Monthly Council of the Royal Agricultural Society for March:

"Professor WAY, the Consulting Chemist to the Society, reported to the Council the recent discovery, assisted by Mr. MAINWARING PAINE, he had made on that gentleman's property in Surrey, of a natural source of silica, in the state known to chemists as "soluble silica." This deposit was situated in the lower beds of the chalk formation, immediately above the upper green sand, in quantities that would prove inexhaustible; and it was found in many instances to contain no less than 75 per cent. of the soluble silica in question. This substance so unexpectedly found ready-made to hand in nature, would be invaluable in a variety of ways in the manufacture of manure; and he desired an early day for a lecture, if it met with the concurrence of the Council, in order that this discovery might in the first instance, and at once, be laid before the Society, as a link in that chain of investigations which had been originated and carried on under its own direction and at its own charge, in order that by such early announcement its advantages might be secured, free from monopoly, to its members and the agricultural community. The Council thanked Professor WAY for this important communication, and decided that his lecture on this subject should be delivered to the members of the Society in the Council Room on the second Wednesday in March, at 12 o'clock at noon."

UNDER-DRAINING.—At a late meeting of the New York Farmers' Club, Mr. J. N. BLAKESLEE, of Watertown, Conn., gave the following testimony to the great value of thorough drainage:

"I have doubled the crops of my whole farm by drainage. One drain eighty rods long, made of stones picked off of two acres, cost \$30, counting the work at a dollar a day, including six rods of lead pipe to bring the water into my barnyard. I have now got water in all but two fields by my drains. I had some dry knolls, situated lower than the land I drained, which were unproductive. Upon these I managed to empty the water of the drains, and now get first rate crops by that mode of irrigation. I put 900 rods of drain into 100 acres. I had 60 acres that would not pasture 60 sheep. The land was covered with bitter brakes; when drained, I sowed southern clover seed, and then cattle and sheep eat clover and young brakes till they killed out all the brakes, and now I get great crops of English hay. I dig ditches two or three feet down to a hard pan and lay a pipe of stones and fill it with small stones. This is far better than open ditches."

FERTILITY OF NILE MUD.—The celebrated microscopic philosopher, EHRENBERG, has examined this mud, and finds its great fertility to be owing, not so much to any peculiar mineral contribution, or to the presence of vegetable matter, as it is to the vast accumulation of extremely minute forms of microscopic animals, which by their decomposition enrich the soil.—*New York Farmers' Club.*

The animal matter thus furnished contains a large percentage of nitrogen, and would by decomposition supply that invaluable fertilizer for all cereal crops—ammonia.

AGRICULTURAL MECHANICS.—Mechanical science and arts are doing more for the advancement of agriculture in the United States than all other agencies combined, so far as immediate results are attained. Ultimately, chemistry, physiology, meteorology, geology, and other departments of the natural sciences, will confer benefits on all industrial pursuits far transcending any mere mechanical advantages. Indeed, the most valuable mechanical powers, even now, are more the fruits of intellectual culture than of original genius; and the successful study of natural phenomena precedes nearly all important inventions and discoveries. Operations that have been practiced thousands of years, like those of plowing, weaving, grinding grain, and pumping or lifting water by wind, are seen from an entirely new point of view by the man of science; and he is able to suggest improvements that never could have occurred to a mind not illuminated by the numerous and brilliant lights kindled by modern researches into the laws of matter.

We have been led into this train of thought and remark by perusing in the *Horticulturist* the valuable article on the "Application of Wind as a Power for Raising Water," from the pen of Prof. KIRTLAND, of Cleveland, to which the readers attention is invited in this number. There is a wind-mill which has been in successful operation in the federal metropolis during the last six years; and for what we can see to the contrary, may continue to work well so long as a wind shall blow up and down the valley of the Potomac. The wheel we should judge to be between thirty and forty feet in diameter, and it is all made of iron. One only four feet in diameter would be too small except for pumping a short distance: from six to eight feet would be a cheaper power, all things considered. We should make the flanges of the wheel of galvanised sheet iron or of zinc, and set them permanently at the proper angle to be acted on to advantage by the current of air. By keeping the wheel always in the direct current, if it had any force, the flanges would catch it, and turn the wheel, as a current water-wheel is turned in the Mississippi and elsewhere. Such a wheel with the necessary shaft and crank may be made of iron for a few dollars; and every one can understand from the illustrations furnished by Prof. KIRTLAND, that this simple apparatus will work successfully whenever the atmosphere has any active motion. These current wheels (they are in no sense *mills*) and pumps, if manufactured in a large way, might be sold at prices which would enable every farmer to have a score of them for irrigation, and for the distribution of liquified manure, if he saw fit to make the mechanical power of the winds create wealth for himself and mankind.

With durable and cheap machinery, vast quantities of water may be elevated to any desirable height on every farm, for agricultural purposes; and the thanks of the farming community are due Prof. KIRTLAND for his very intelligible illustration of a simple and useful wheel and crank to be put in motion by wind. The water that falls upon every square foot of ground in a field is equal, on an average, in this country, to 200 lbs. a year; and so much of this as descends deep into the earth and re-appears in wells and springs, always contains both the vegetable and mineral food of plants (dissolved out of the soil in passing through it) in greater or smaller quantities. In rare instances such water is poisoned by an excess of acids, or acid salts.

On the construction and working of pumps we have a word to say: It is not necessary to use two pumps nor a force pump in order to raise water forty or fifty feet, as Prof. K. seems to suppose. Let the stem of the pump stand twenty-five feet above the water, and be connected with it by an iron pipe with a valve at the top of it. Just above this the piston rod descends and works in the usual way of pumping. By creating a vacuum above the twenty-five feet of iron pipe, the water is forced up twenty-seven or twenty-eight feet by the weight of surrounding atmosphere, and two feet above the valve in the piston rod. This rod will, of course, lift the column of water twenty-five feet without difficulty, provided due power is applied to the lever or other gearing

that puts it in motion. The same mechanical power that will force up water twenty-five or fifty feet by a *vis a tergo* action, as in a common forcing pump, will lift it by applying the power on the upper side of the metallic or wooden body that raises the column of water. The motion of the body that really lifts the water is the same in either case.

"APPLICATION OF WIND AS A POWER FOR RAISING WATER.—A garden engine, manufactured by Downs & Co., Seneca Falls, State of New York, enabled me to preserve many valuable plants, shrubs, and trees, during the severe drouth of last season. It was equally important as an implement of warfare in a contest I waged with the cherry and pear slugs, and some other depredating insects. The force with which it throws tobacco water, and other medicated washes, is sure to reach those enemies, however securely they may be concealed. Its principles are simple, and the workmanship excellent. No gardener can well dispense with its use.

"To pump from a well the requisite supplies of water was a work of no small labor. It led to the investigation of a method of working a pump by means of the wind. The practicability of the plan I am about to suggest, does not remain to be tested by experiment. During former years, a small wind-mill was in successful operation upon the farm of Mr. ANDERSON, five miles west of Ashland, Ohio, on the road leading to Mansfield. It worked a pump that amply furnished a large stock of cattle, which otherwise could obtain no water. Two days only did it cease to perform its duties during more than two years, and that interruption was occasioned by the meddling of mischievous boys. It is still in operation for ought I know. The cost of this simple machine, including pump, did not exceed fifteen dollars.

"By reference to Plate I, the principles on which it was constructed will be at once comprehended. The direct application of the power, without the intervention of any gearing or machinery, obviates much friction, hence a small amount only of power is required. The diameter of the wheel should not exceed four feet, a few inches less is preferable. It is firmly fixed by its hub on an iron axle formed of a square inch bar. The sails or buckets are secured, at their outward ends, to a wooden rim, like that of a large spinning wheel. An inch and a half crank is raised on the axle at B, which, at that point, is cylindrical, and upon which is adjusted the upper ends of the piston-rod of the pump C. This, when in motion, of course commands a play of three inches.

"*The body of the Mill.*—A piece of pine plank, D, is suspended from the cross-girt of a frame, E, by an iron bolt, F, furnished at its lower end with a large head, G, and a washer, and secured by a key, H, at the upper end, admitting of an easy circular motion of D around the bolt. This motion is coincident with that of a swivel on the piston-rod, I. The rudder, or vane, will necessarily throw the wheel, at all times, into the wind. The axle, A, is suspended from the body by two straps of iron,

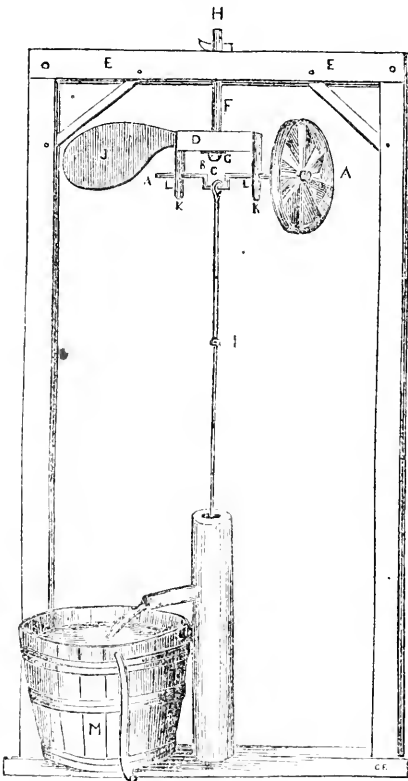


PLATE I.

through which it passes at L, L, where it is cylindrical without regard to perspective and proportion, but will perhaps illustrate the subject sufficiently.

"A breeze which merely agitates the leaves of the trees will set the machinery in operation. A reservoir of some six or eight hog-heads was kept nearly filled, and when, in windy weather, a surplus of water was raised, it was returned to the well by a waste pipe, M. In the hands of an ingenious mechanic it might, no doubt, be greatly improved. Iron, in some of its parts might be substituted for wood.

"A well, suitably located, will furnish water enough for an ordinary garden, and without labor, by aid of this mill. How much it would improve our flowers, fruits and esculent vegetables, cannot be estimated, but would surely effect a revolution in our present modes of gardening here in the West, where we suffer much every season from drouth. Public tanks, inns, tanneries, and thousands of prairie farms, require its aid. Downs & Co., or some other active firm, would render the com-

munity essential service if they would manufacture a supply of these mills and adapt them to some of their improved pumps.

"In all this, gentle reader, there is no Quixotism. Its feasibility has been amply tested. We may, however, trespass on the peculiar province of the Don, and, like him, get our heads bruised when we give play to our imaginations on this subject. We will venture on the movement.

"Attempts are every where making to ornament and improve country and suburban residences. Few localities are naturally furnished with the means of supplying a *jet d'eau*, yet it is one of the most important ornamental additions art can supply to such places. One of moderate size can be constructed at any point where a well with permanent and abundant springs can be obtained within twenty-eight feet of the surface of the ground. Practically, beyond that depth, this mill will not raise water with much success. It is obvious that the same wind operating on one mill, and raising a given quantity of water twenty-eight feet, would, by acting on a second mill, raise the same water an additional twenty-eight feet.

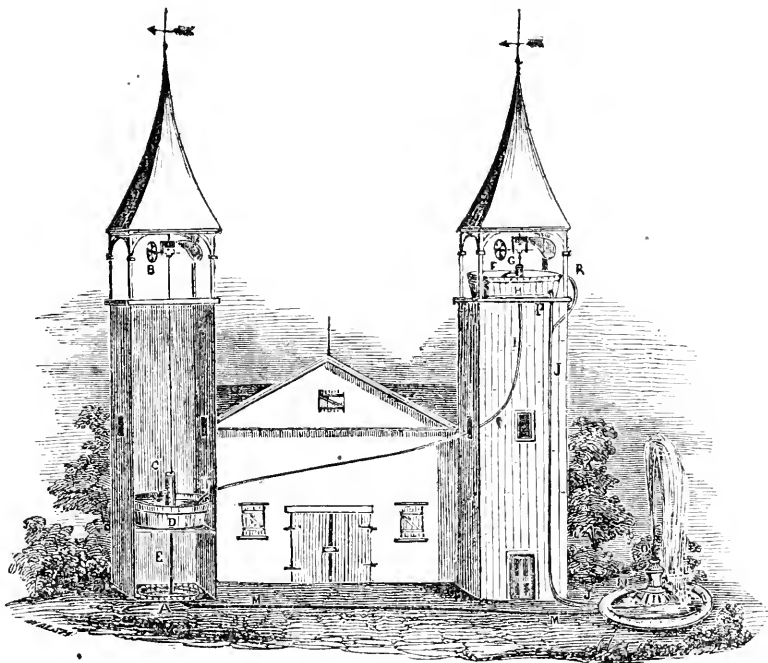


PLATE II

Suppose an architect should sketch a barn, or other out-building, with two spires or towers of suitable height and dimensions, giving them an air of taste and beauty. The outline I have attempted to supply in Plate II, but not the finish.

A, represents a well, either under or contiguous to one of the spires. B, first wind-mill, working pump, C, placed on the center of a wooden cistern, D, of thirty or forty hogs-heads capacity, whose bottom is perforated with pump stem, E, E, extending down into the water in the well. F, second wind-mill, working pump, G, and filling reservoir, H, of similar capacity, from reservoir, D, through a tube I, I. J, J, conducting tube. O, the hydropathic mermaid, cascading dolphin, or any other monster fancy may create. I, stop-cock to let the water on the jet. N, stop-cock to let the water directly into the basin, and not through the jet. The waste water is finally discharged into the well, A, by tube, M. The pressure on the tube, J, J, might be too heavy while the water was not discharging at the basin; stop-cock P would relieve it. The waste water from cistern, II, when full, may be discharged through tube R, into the conducting tube, J, J.

"By these arrangements, sixty or eighty hogsheads of water would always be at command, and at an elevation at which it might be conducted over the dwelling house, lawn, garden, trees, &c. During calm weather it would keep a jet of moderate dimensions in play for several hours, and in windy weather the supply would be constant. On the shores of Lake Erie no day passes without furnishing wind enough to keep the reservoirs replenished. In case of fire they would be equal to an ordinary fire engine.

"Is this Quixotism?" J. P. KIRTLAND.—Cleveland Ohio.

Horticultural Department.

CONDUCTED BY P. BARRY.

HINTS ON THINNING FRUIT.

THE prospects of an abundant fruit crop throughout most of the fruit growing regions of this country, have scarcely ever been better, according to the best information we can obtain, than they are the present season. The winter was of more than an average mildness; and the spring, though early, has been cool, without any violent changes likely to affect the fruit buds. At the present moment (May 14th) Peaches, Cherries, and Pears, show a remarkable profusion of blossoms. The temperature is lower than we could wish it to be, and for several nights there has been here a light frost, but owing to the dryness of the atmosphere, it has not, as far as we are able to judge, done any serious injury. Everything looks promising. Last season the crop was very light generally—in many localities a total failure; and this will contribute much to the abundance of this season's crop.

Now we wish to offer a few hints in regard to certain precautions, which the circumstances call for; that is, provided the crop will be as heavy as we have reason to anticipate. It is very well known that in favorable seasons, after a failure especially, trees bear too much. It is very common too see them so loaded with fruit as not only to cease growing entirely, but to bend and break down under its weight. This should be guarded against. Trees are in a multitude of cases enfeebled, broken, contract diseases, and are, in short, *ruined* by excessive bearing; and every man who appreciates the value of a full grown bearing fruit tree, worth from \$100 to \$500 as the case may be, should guard against such a result as carefully as he would his ox or his horse against excessive labor that would be certain to injure or kill them.

Trees, like animals, have constitutions that can, by proper treatment, be kept sound for a great length of time, or by neglect, or bad treatment, broken down. Our opinion is that the feeble, diseased, and short-lived condition of the peach tree in New Jersey is due, in a great measure, to a greedy or careless system of over-cropping. We know how races of men and horses degenerate, from hard labor and bad treatment—how they dwindle down in size, lose their proportion, symmetry, and intelligence—in short, wear out, to use a very common but expressive term. Trees “wear out,” too. How many we have all seen that in their youth, even before they had arrived at a full bearing age and size, began to look old—the branches twisted and knarled, the bark rough and mossy and all covered with small, feeble, ill-formed buds and fruit spurs, loaded perhaps with small, worthless fruit, not worth picking up.

Now those who desire to guard their trees against wearing out, must not be too greedy of a great crop. They must master that natural reluctance we all feel to pick off a portion of the fruit. They must thin them out so as to leave them evenly distributed over the tree, and only so many as can be brought to full and perfect maturity without injury or death to the tree. But we shall be asked, “How are we to know how many we ought to leave or how many to take?” Well, we confess it takes some little skill and experience to thin a crop judiciously, but he who goes about it in earnest will find some indications to aid him. It will not do to thin in all cases alike, because the vigorous tree, in a generous soil, will carry a large crop without injury, and one that would be almost certain death to a delicate or feeble tree having limited resources in the way of *food*, just as a healthy, robust, well fed man can perform a day's work with ease that a weakly, ill fed man dare not attempt. The growth of a tree, the appearance of

its foliage, the length and thickness of its young shoots, afford a very reliable guide as to the vigor of a tree and its ability to bear a heavy crop. Some varieties are naturally moderate and constant bearers, and if kept under good culture might never require thinning, while others bear enormously some years, the fruit actually covering every part of the tree and requiring props and supports to keep it from being torn to pieces. Such trees cannot bear so in successive years, nor can they long remain healthy. Then beside thinning the fruits, good culture must be given them in their fruitful years, and top-dressings of composts in a well decayed state. Garden trees may have liquid manure and mulching instead of top-dressing. Such care as this, not costing much, will not only sustain the vigor and health of trees, but produce large, handsome, marketable fruits. When a tree is loaded to breaking down, one-half or three-fourths of the fruit is worthless, and all the advantage of a large crop is lost.

We consider this subject of much importance to the fruit grower. We know by ample experience that it is. We crop our own trees heavily, perhaps too heavily; but every season we have to perform a thinning process, and we should consider the neglect of it nothing less than the wilful destruction of our trees.

GARDEN AND ORCHARD HINTS FOR JUNE.

GARDEN crops will now be getting forward rapidly and require clean, thorough culture. An occasional application from the liquid manure tank will be of great service. It should always be applied in the evening. Strawberry beds and dwarf garden fruit trees in full bearing may be greatly benefitted by the same treatment; so may roses, or any other flowering plants in poor soils. Buds and grafts will need looking to, and all shoots from the stock below them rubbed. Tying up may be necessary in some cases. Young trees being trained into particular forms, require frequent attention in the way of pinching to regulate the growth and remove misplaced or irregular shoots.

The first of this month is a good time to turn out bedding plants, such as Verbenas, Petunias, Salvias, Heliotropes, Cupbeas, Lantanas, Veronicas, &c., &c. All these plants produce the finest effects when planted in groups or masses, in figures cut in the lawn. The soil should be mellow and rich, and the plants turned out of pots so as not to disturb the roots, and they will go on and blossom immediately.

Dahlias may be put out now and through the whole month.

Lawns, to be worthy of the name, require to be mowed every two or three weeks at least. No matter how good the foundation in the way of soil and grass, without frequent and *very close* mowing, and an occasional rolling, a lawn is nothing better than a common cattle pasture, in fact not so sightly.

Climbing Ornamental Plants of all sorts require constant care in the way of tying up. The shoots should be neatly and tastefully arranged on the wall or trellis.

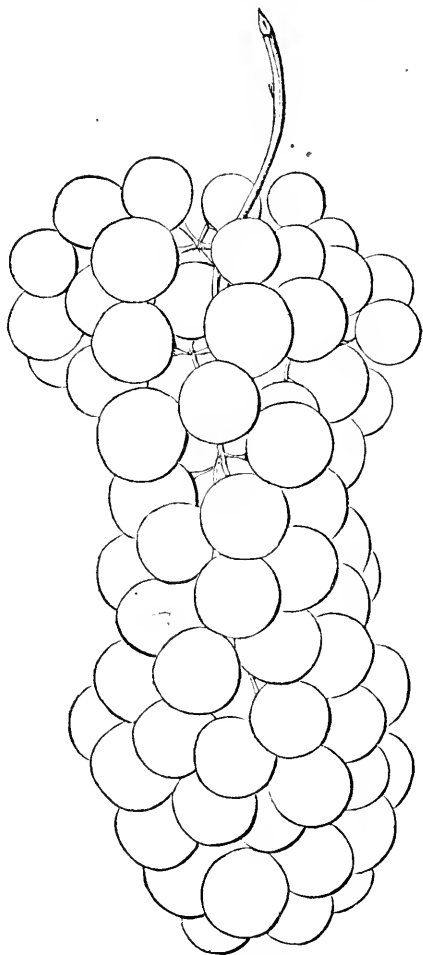
Insects, in all departments, should have an unceasing warfare waged against them. If they once get the upper hand, it is no easy matter to subdue them.

The Curculio.—We hope among the thousand and one experiments being made to discover a *sure and easy* way of combatting this indomitable foe to fruits, some one will be successful. Shake them down and kill them is the most effectual way we know of to-day.

We wish to collect information in regard to the ripening of fruits in different latitudes and localities. Will our friends aid us? Make rough notes of fruits as they ripen, and send them to us.

THE CLINTON GRAPE.

I HAVE NOW before me (January 25th) a bunch of the above desirable, long-keeping variety, as fresh and perfect as it came from the vine. It has been cultivated in the



CLINTON GRAPE.

vicinity of Rochester for the last twenty or twenty-five years; yet it is still but little known, although well worthy of a more general cultivation on account of its hardiness and productiveness. It is *the* grape for the North, where no other variety ripens. Even with us, (latitude 42°.) in backward seasons this is the only variety that attains complete maturity. I would particularly recommend it to wine-makers as worthy of trial. My opinion is, that before many years it will be extensively cultivated as a wine grape.— Judging from the character of its juice, the wine will require a longer time to ripen than that of *Isabella* and *Catawba*, and will keep much longer than either. It succeeds well in all dry situations, and is entirely free from rot, to which the *Catawba* is particularly subject.

It is a matter of surprise that the wine-makers of the West, some of whom have been making such active search for native grapes, have not turned their attention to this variety. I have not seen it mentioned in any of their reports. I am informed, however, that it is now in the course of being tested there, and that a quantity of the grapes have been sent from this place to an eminent wine maker, to be tested as to their wine-producing qualities. We may therefore expect a report soon.

The vine grows rapidly, and is propagated easily, striking more readily from cuttings than any other variety I know in the whole catalogue of popular native and foreign sorts. The shoots are slender and wirey, ripening so well as to acquire great firmness, and hence

it is so hardy that the severe cold of a northern winter never affects even the softest parts of the young shoots.

Wood—grayish brown, and short-jointed. Leaves—small and thin, sharply serrated, and unlike *Isabella* and *Catawba*, which are usually turned backwards, they have more of a concave form. Bunches—small and compact, resembling much the *Black Cluster*. Berries—small to medium, black, juicy, with considerable pulp, rather acid when first gathered even though ripe. They improve by keeping, just as winter pears will by house-ripening. It is a prodigious bearer, and ripens in equal situations two or three weeks before the *Isabella*.—*G. E.*, in *Horticulturist*.

Ladies' Department.

ANNUALS, AND THEIR CULTIVATION.

WE again resume our descriptions of flowers, and during the season we shall give drawings of such as we may deem worthy. Our pages have thus far been so crowded with answers to numerous inquiries, and other matters that required immediate attention to be of any value the present season, that we have rather neglected the flowers. We shall endeavor to make up for this neglect by especial attention to this department during the season of sunshine and flowers.

The first work is the selection of the ground and its preparation. A warm and sheltered position should be chosen, if possible, as on the south side of a fence; but care must be taken to select a place on which water will not stand. The ground should be deeply dug and well pulverized. If not rich, well rotted manure should be dug in. If the ground is clayey, and liable to become hard by the beating of the rain and the drying sun, some light mold from the woods should be added, or some sandy loam, or mold from an old pasture; one of which can be procured in almost any neighborhood. After the ground is prepared the seed may be sown; but, a little caution is necessary not to sow seed too thick, as beginners generally make this error. As there is some difficulty in sowing the finer seed evenly, they may be mixed with three or four times the quantity of sand or ashes. They may be then lightly covered with fine mold, sifted over them—the smaller the seed, the lighter the covering. It is better to cover too lightly than too heavily.

THE BALSAM—*Balsamina Hortensis*.—The Balsam, or Lady's Slipper, as it is sometimes called, is well known, occupying a place in almost every garden. It is a native of the East Indies, China, and Japan. It has succulent stems, and beautiful showy flowers. Too much of the seed sold in our seed stores is carelessly saved from improperly grown plants, and the results to the planter is poor single flowers, and sore disappointment. The flowers to be considered good should be large, round, and double. The plant should branch down to the surface of the ground, the flowers completely encircling the stem on all sides. Last season we obtained seed from VILMORIN, of Paris, and we were not only satisfied but delighted with the result. Mons. V. has a variety which he names the *Camellia Balsam*, exceedingly double and fine in every respect. It is from one of these our engraving is taken (fig. 1). Much, however, depends on cultivation.

The Balsam requires a deep, rich, warm soil. Seed may be planted in this latitude about the 15th of May in the open ground; but to secure early flowers, it is better to plant in a hot-bed of moderate heat, or in a cold frame, merely making a box and covering with glass. Seed in this way may be planted about the 1st of April, and by the 1st of May will be ready to transplant into the open ground.

THE CHINA ASTER—*Aster Chinensis*.—China Asters were first sent from China to Paris in 1730, and have since been carried to all civilized countries. At their first introduction they were single, and of only two colors, red and white. The Germans have taken great pains to improve this flower, and the better sorts are usually called German Aster. The French are particularly fond of Asters, and grow them in the greatest perfection. The flower from which our plate was taken (fig. 2) was grown from French seed, and is called *Paeony Aster*. We were unable to make them ripen their seed, and have since learned that in France the seed can only be ripened under glass.

The culture of the Aster is similar to that of the Balsam. They generally flower better if transplanted than if allowed to remain where the seed was sown.



1. BALSAM.

2. PEONY ASTER.

3. PORTULACCA.

THE PORTULACCA (fig. 3) is a succulent, spreading plant, that loves the hottest and dryest weather. There are four varieties, the scarlet, crimson, yellow, and white. They grow almost as readily as weeds, and may be sown very early in the spring. We know of few more beautiful objects in the floral world than a bed of the Portulacca.

Editor's Table.

AN AGRICULTURAL COLLEGE IN NEW YORK.—After an effort of thirty-one years to obtain a charter for an agricultural college from the Legislature of New York, the favor has at last been reluctantly granted. What amount of money is appropriated to endow the institution, or what particular plan of education is contemplated, we know not; but we trust that something creditable to New York will be the fruit of so long a delay.

The trustees of the college are JOHN DELAFIELD, HENRY WAGER, WILLIAM KELLY, JOHN A. KING, N. B. KIDDER, JOEL W. BACON, WILLIAM BUELL, TALLMADGE DELAFIELD, ROBERT J. SWAN, and such others as may be associated with them. Perhaps a better selection as a whole could not be made; and we feel confident that whatever can be done, under existing circumstances, to command success and realize the hopes of the devoted friends of agricultural education, will be accomplished.—Many difficulties are to be encountered and overcome before well qualified professors, good text-books, proper anatomical and physiological museums, and a truly scientific and practical school can be seen in this or any other State of the Union. Few men have fairly considered the obstacles which have hitherto prevented the production of any creditable works in the several departments of agricultural science by Americans; and the gentlemen most interested in this last movement in behalf of rural literature and science, in connection with tillage and husbandry, should turn their attention at once to the production of the needful text-books for the use of pupils and teachers. What would a medical college be without good books on anatomy, physiology, materia medica, chemistry, surgery, obstetrics, theory and practice of physic, and other branches of the healing art? No school can prosper without the daily use of suitable books, and such cannot be made in a month or a year by raw hands. A new profession is to be built up from scattered and rudimental elements; and the labor of gathering at one place all the necessary material to form a large and flourishing institution, which shall do honor to a commonwealth that contains a half million of enlightened and independent farmers, is a work of no ordinary character. The farm and grounds are to consist of not less than three hundred acres, and the college buildings should be sufficient to accommodate an equal number of students.

We shall watch and chronicle the movements of this industrial school with lively interest, for the idea of uniting a liberal measure of intellectual and moral culture with a reasonable amount of agricultural and mechanical labor, we have fondly cherished from our boyhood. It is the hope of the masses, the high promise of their freedom and honest toil. But without an earnest, steady, and systematic effort, the people to be benefitted by this agricultural college are doomed to experience another disappointment. They will, however, hold the men who have the matter in charge to a strict accountability. Impossibilities will not be expected, nor asked; but whatever wisdom, industry, and money can accomplish, should be done to place agricultural education on the most favorable footing.

THE UNITED STATES AGRICULTURAL SOCIETY.—The first idea of the organization of this Society originated with the Massachusetts Board of Agriculture, in January, 1851.—*Farmers' Companion and Horticultural Gazette, May, 1853.*

Statements similar to the above, giving the Massachusetts Board of Agriculture credit for originating the idea of the organization of the existing United States Agricultural Society, have frequently been made and not hitherto contradicted. It is due to the truthfulness of history that the error be corrected while the parties are living who know the facts as they occurred. Mr. DELAFIELD, late President of the N. Y. State Agricultural Society, Mr. JOHNSON, its present Secretary, Mr. CALVERT, President of the Maryland State Agricultural Society, Mr. HOLCOMB, of Delaware, author of the Constitution of the United States Society, Mr. F. G. SKINNER, editor of the *Plough, Loom, and Anvil*, Senator RUSK, of Texas, and many others, know that the proprietor of this journal labored to establish the present U. S. Agricultural Society before January, 1851; nor will the distinguished President of the Society, who, as President of the Massachusetts Board of Agriculture, offered the resolution in favor of a National Society, which was adopted in January, 1851, deny our previous correspondence with him to secure his powerful aid and leadership in the matter. It would be easy to let this correspondence speak for itself, for there is nothing in it but sentiments which reflect the highest credit on Col. WILDER.

It is now thirty-three years since we wrote our first article for the press in favor of an agricul-

tural college in the State of New York, and we have lived to see the Legislature charter such an institution. A bill to charter the U. S. Agricultural Society is before Congress, drawn by the writer, and considerable progress has been made in behalf of a National University worthy of the republic. We wanted a thorough organization of the men of true progress in all the States as a means to enlighten public opinion, educate, and elevate the industrial classes. Once properly organized, nothing would be easier than to establish at least a thousand agricultural and mechanical schools, with superior professional libraries, teachers, and all needful apparatus to promote the acquisition of knowledge. To attain this national object, an Industrial University at Washington, uniting the highest grade of science with the most advanced practice in the arts of tillage, husbandry, horticulture, manufacturing, mining, and civil engineering, for the education of educators, is indispensable. The University at Berlin has one hundred and twenty professors; and yet Prussia is a small nation in comparison with this republican empire. How long is it to be cursed with personal and sectional jealousies to the universal neglect of education, its highest and most enduring interest?

SAXON MERINO AND CROSS BREED SHEEP.—The Executive Committee of the N. Y. State Agricultural Society have adopted the following regulations in regard to fine woolled sheep, in hopes that greater justice will be done to exhibitors than heretofore, and the true merits of the sheep exhibited be more satisfactorily ascertained:

Requirements.—The number of Ewes to be exhibited for premiums to be five, and they must each have suckled a lamb the present season.

1. The fleeces must be sent to the Secretary, at the Agricultural Rooms, Albany, immediately after shearing, with the private mark of the owner, and a mark placed upon each sheep corresponding with that sent to the Secretary, and a lock of wool left on each sheep. The Secretary to record these marks in a book provided for the purpose, and to be shown to no person until the fleeces are produced at the Fair.

2. A statement must also be sent, containing the age of each sheep; how they have been kept; the date when shorn, and that the fleece was but one year's growth; the length of time after washing when the fleece was shorn; and that each Ewe had suckled a lamb up to the time of shearing.

3. The Middlesex Mill standard for assorting the fleeces to be adopted. The Secretary is to send each fleece to the assorter, marked by him, to be weighed, examined, and noted as to its various qualities.

4. The fleeces to be carefully cleansed, dried, and weighed, and each fleece to be put up separate and returned to the Secretary with the assorter's report.

5. The sheep to be exhibited at the Fair, and to be examined by the judges.

6. After the judges have examined the sheep, the fleeces are to be submitted to them, with the report of the assorter, and with the private marks sent to the Secretary, when the judges will make their awards.

Each exhibitor must present an affidavit to the Secretary for the use of the judges, that the sheep exhibited are the same that the fleeces were taken from which were sent to

the Secretary for being assorted and examined, and that the statement furnished by him to the Secretary is in all respects correct.

Bucks.—The same rules as to shearing and marking, and statements as to age, feeding, &c., will be required—to be verified in like manner.

IMPROVEMENT OF HORSES.—We learn that L. G. MORRIS, Esq., President of the New York State Agricultural Society, and Mr. FRANCIS MORRIS, of Westchester, purchased at the sale of Mr. GIBBONS the celebrated race mare "Fashion," with a foal at her foot by "Mariner," for \$1,550. Fashion will be bred to Mr. BURNER's celebrated imported horse "Consternation" this season. No other branch of stock-rearing pays so well as that of producing first rate horses; and we are happy to know that gentlemen of the skill, judgment, and means of the Messrs. MORRIS are giving to the business a share of their attention.

SALE OF BLOOD HORSES.—The large stock of blood horses belonging to the estate of the late Wm. GIBBONS, was sold at auction on the 3d inst., at Madison, N. J. Among the number sold was the celebrated racer "Fashion," now 17 years old, bought by Mr. MORRIS, of Morrisania, for \$1,550. "Bonnet's o' Blue," mother of "Fashion," 26 years old, brought \$100. "Patsey Anthony," 13 years old, \$280. "Mariner," 17 years old, \$270; and others of lesser note at prices varying from \$70 up to \$620. This sale attracted a large concourse of people from Newark, New York, and other places.

THE CONNECTICUT VALLEY FARMER & MECHANIC.—We have received the first number of a monthly journal with the above title, published at Springfield, Mass., at fifty cents per annum, by SAMUEL BOWLES & Co., and edited by Wm. B. CALHOUN, who is well qualified to make a valuable paper.

Inquiries and Answers.

ROTTEN POTATOES NOT ALWAYS LOST.—During the harvest of 1851, I was looking over an oat field belonging to a friend, in Waukesha Co., Wis., and saw a most remarkable difference on one part of the field in the color, strength and quality of the oats. Upon inquiry, I ascertained that potatoes had grown there the previous summer. A part were dug before they were ripe; in the other part of the field they became diseased and rotted on the ground. Where the latter was the case, more than a double crop of oats was the result the next year.

The soil is a black sand mixed with some little muck or marl. The season that summer (1851) had been rather dry. Please explain this in some future number. MARK SEAVER. —Waterloo, Jeff. Co., Wis.

The reason why the diseased potatoes so much increased the oat crop is very evident: the unripe potatoes that were dug and removed from the field, carried with them a large quantity of organic and inorganic matter which they had obtained from the soil. Their removal, therefore, to some extent impoverished the soil of the food

of plants; hence the following oat crop was light. On the other hand, the part of the field on which the potatoes rotted received an additional quantity of available organic and inorganic matter; in other words, the rotted potatoes were a good manure, and hence the oat crop was much increased.

We have several times witnessed similar results to the above, where a part of a field of turnips have been allowed to rot on the land and the other part carried off. We would not, however, be understood as recommending growing potatoes and turnips and then allowing them to rot on the land for manure. We believe that if the potatoes, turnips, &c., are fed to hogs or cattle, and their manure returned to the soil, the benefit to the succeeding crop would be nearly as great as though they had rotted on the land.

THE VALUE OF MILK.—BEANS.—Please inform me through your valuable journal, whether it would pay to buy milk at two cents per quart, churn it, and give the milk to hogs? Would I realize any profit by so doing?

Can beans be used, profitably, in any way for hogs? and if so, what way would be best? WM. BARRETT.—Bedford Station, West, Co., N. Y.

The first question involves a number of others affected by a variety of circumstances. What is butter worth with you?—if half a dollar per pound, it could scarcely fail to pay you well. Then again, much depends on the quality of the milk, and this is affected by numerous circumstances—such as the distance from the time of calving, the quality of the food, the age and breed of the cows, and the time and frequency of milking. If a cow is milked thrice a day you will obtain more milk, but it will be of a poorer quality than when milked only twice; much more is this the case when only milked once in twenty-four hours. The influence of breed alone upon the quality of the milk is well illustrated by the result of a series of trials made at Bradley Hall, in Derbyshire. During the height of the season, and when fed upon the same pasture, cows of four different breeds gave per day—

Breed.	Milk.	Butter.	Or 1 lb. of butter was yielded by
Holderness,	29 qts. and 38½ oz.		12 qts. of milk.
Alderney,	19 “ 25 “		12 “ “
Devon,	17 “ 28 “		9¾ “
Ayrshire,	20 “ 34 “		9¾ “

But even from cows of the same breed the milk contains a very variable quantity of butter; thus, four cows of the Ayrshire breed, feeding in the same pasture, produced, in one week, the following:

	Milk.	Butter.
A.	84 qts., which yielded	3½ lbs.
B and C, each,	86 “ “	5½ “
D,	88 “ “	7 “

Twenty-four quarts of A's milk were required to yield one pound of butter, while of D's, twelve and a half quarts only were needed.

We give these results to show that the amount of butter that milk will yield is not very definite. A fair estimate, from all we know on the subject, would be 12 qts., or about 25½ lbs., of milk for each pound of butter.

The value of the butter-milk as food for swine, is easily ascertained theoretically. Thus, 100 lbs. of milk contains about 4 lbs. of cheese and 4 lbs. of sugar; 1000 qts. would therefore contain 52 lbs. of cheese and 52 lbs. of sugar of milk. The same amount of nitrogenous matter would be obtained in two bushels of peas. Of the non-nitrogenous matter, (starch, sugar, &c.,) the two bushels of peas would contain more than the 1000 quarts of milk. So that we shall not be far out of the way, in estimating two bushels of peas equal to 1000 quarts of buttermilk in nutritive matter. The calculation, therefore, will stand as follows: 1000 quarts of milk will yield 83¼ lbs. of butter, and butter-milk equal to two bushels of peas. Affix the prices obtained in your neighborhood for butter and peas, and judge of the economy of giving two cents per quart for milk.

Prof. MAPES says that four bushels of lime slaked with the pickle or brine of a bushel of salt, well mixed with a cart of decayed tan-bark, makes an excellent manure. What I want to know is, if this compost is used for bedding my horses, will the lime which it contains serve to fix or to set the ammonia free? Prof. BLISS, of the University at Lewisburg, gave me, as his opinion, that it would fix the ammonia. I do not wish to tax you with any process of reasoning on the subject, but merely to say whether, in your opinion, MAPES' compost will serve to fix or to set the ammonia free. I have a tannery and a worn-out farm. Correct information would be of great service to me. J. D. CHAMBERLIN.—Buffalo Cross Roads, Pa.

Four bushels of lime cannot all be combined with the chlorine in a bushel of salt, so that there would be an excess of calcareous matter which would operate to liberate ammonia instead of fixing it in manure. Use tan-bark unmixd with lime for bedding; and its acids and porous texture will retain ammonia and other fertilizing gases. The lime, salt, and refuse bark compound, named by Mr. MAPES, is a fertilizer of considerable value, to be applied directly to land. It is only under peculiar circumstances that lime will decompose common salt; or that gypsum will deodorize night soil or other manure, as we have ascertained by a score of experiments.

Swamp muck, like tan-bark, develops an acid reaction, and therefore it is a capital material for bedding horses, swine, cattle, and sheep, whose excrements develop an alkaline, or ammoniacal reaction. To save this volatile alkali in manure

is an object of great importance, which may be done with such organic substances as straw, forest leaves, tan-bark, and muck; and also by dry loam and clay.

STRETCHES IN SHEEP.—Seeing an inquiry in the last number of the *Genesee Farmer* asking if there was such a disease as the stretches in sheep, I answer, there is. We have had several cases of it. An old friend of father's told him the disease was occasioned by their inwards knotting together. When you first see them stand, stretching, catch them and take them up by their hind legs, raising them their full length from the ground; then give them three or four smart jerks up and down; then give them some salt, and in ten minutes give them some tar, and if they will not lick it themselves put some in their mouth and hold it in till it is dissolved. I know this to be a good remedy, for we have tried it and they always got well in two or three hours.

I am not quite fifteen years old, but I thought this remedy so useful that I would send it. JAS. PURDIE.—*Columbus, Chen. Co., N. Y.*

HORTICULTURAL.

THE APPLE TREE BARK-LOUSE.—Summer before last I noticed a large number of bugs, about the shape of the common lightning bug, only three times as large, upon my young apple trees: since then many of the trees are covered with a small thing, in form of eggs, as in the specimen I inclose. I send it to you in hope that you may recognise the beast, and be able to give the antidote to his ravages. It seems to blight all the trees upon which it appears, and almost entirely prevent their growth. If you will be so kind as to advise me in reference to this matter, you will confer a great favor.—ALBERT VAN VOAST.—*Schenectady, N. Y.*

This is the troublesome insect called the Apple Tree Bark-Louse. We annex a sketch of it, and quote the following from HARRIS' excellent Treatise on Insects:

"Young apple trees, and the extremities of the limbs of older trees are very much subject to the attacks of a small species of bark-louse. The limbs and smooth parts of the trunks are sometimes completely covered with these insects, and present a very singularly wrinkled and rough appearance from the bodies which are crowded closely together. In the winter these insects are torpid, and apparently dead. They measure about one-tenth of an inch in length, are of an oblong oval shape, gradually decreasing to a point at one end, and are of a brownish color, very near to that of the



bark of the tree. These insects resemble in shape one which was described by REAUMUR* in 1738, who found it on the Elm in France, and GEOFFROY named the insect *Coccus arborum linearis*, while GMELIN called it *cochiformis*. This, or one much like it, is very abundant upon apple trees in England, as we learn from DR. SNAW† and MR. KIRBY;‡ and MR. RENNIE§ states that he found it in great plenty on currant bushes. It is highly probable that we have received this insect from Europe, but it is somewhat doubtful whether our apple tree bark louse be identical with the species found by REAUMUR on the Elm: and the doubt seems to be justified by the difference in the trees and in the habits of the insects, our species being gregarious, and that of the Elm nearly solitary. It is true that on some of our indigenous forest trees bark lice of nearly the same form and appearance have been observed; but it is by no means clear that they are of the same species as those on the apple tree. The first account that we have of the occurrence of bark lice on apple trees, in this country, is a communication by MR. Enoch PERLEY, of Bridgetown, Maine, written in 1794, and published among the early papers of the Massachusetts Agricultural Society.¶ These insects have now become extremely common, and infest our nurseries and young trees to a very great extent.—In the spring the eggs are readily to be seen on raising the little muscle-shaped scales beneath which they are concealed. These eggs are of a white color, and in shape nearly like those of snakes. Every shell contains from thirty to forty of them, imbedded in a small quantity of whitish friable down. They begin to hatch about the 25th of May, and finish about the 10th of June, according to MR. PERLEY. The young on their first appearance, are nearly white, very minute, and nearly oval in form. In about ten days they become stationary, and early in June throw out a quantity of bluish white down, soon after which their transformations are completed, and the females become fertile, and deposit their eggs. These, it seems, are hatched in the course of the summer, and the young come to their growth and provide for a new brood before the ensuing winter.

Among the natural means which are provided to check the increase of these bark lice, are birds, many of which, especially those of the genera *Parus* and *Regulus*, containing the chickadee and our wrens, devour great quantities of these lice. I have also found that these insects are preyed upon by internal parasites, minute ichneumon flies, and the holes (which are as small as if made with a fine needle), through which these little insects come forth, may be seen on the backs of a great many of the lice which have been destroyed by their intestine foes. The best application for the destruction of the lice is a wash made of two parts of soft soap and eight of water, with which is mixed lime enough to bring

* Mémoires, Vol. IV., p. 69, plate 5, figs. 5, 6, 7.

† General Zoology, Vol. VI., Part I., p. 196.

‡ Introduction to Entomology, Vol. I., p. 201.

§ Insect Transformations, p. 92.

¶ See papers for 1796, p. 32.

it to the consistence of thick whitewash. This is to be put upon the trunks and limbs of the trees with a brush, and as high as practicable, so as to cover the whole surface, and fill all the cracks in the bark. The proper time for washing over the trees is in the early part of June, when the insects are young and tender. These insects may also be killed by using in the same way a solution of two pounds of potash in seven quarts of water, or a pickle consisting of a quart of common salt in two gallons of water."

I have some seed of the Red Cedar which I wish to put in this spring, and having carefully examined the back volumes of the *Genesee Farmer*, "Downing's Fruits and Fruit trees of America," and your "Fruit Garden," and finding nothing in regard to raising Red Cedar from the seed, you will confer a favor by giving instructions in the next number of the *Genesee Farmer*. LEWIS B. WYANT. *Bonus, Ill.*

If seeds of last year, bury in earth for one year, and then sow in light, dry, loamy soil.

My husband would like to know how to save, and when to plant or sow, strawberry and blackberry seed. JULIA SPEARS.—*Brookfield, Wis.*

Take ripe berries, press the juice out of them, dry the pulp, and sow it immediately in pots or boxes of very light, sandy earth, or in an open border of such composition; cover lightly.

Roanoke.

THE Short-Horn Bull, "Roanoke," bred by John S. Clark, of Mentz, and purchased of John M. Sherwood, of Auburn, will be kept the present season on the farm of HENRY FELLOWS, three-quarters of a mile north of Sennett village, N. Y. Said Bull is pure Short-Horn. His pedigree can be seen by applying to the owner.
TERMS—\$5 a Cow.

ALSO, FOR SALE, a Yearling Bull, color Red and White, sired by "Old Splendor." This Bull will serve Cows, if desired, while kept on the premises.
June, 1853—1* HENRY FELLOWS.

HARVEST IMPLEMENTS.

MOWING and Reaping Machines of different patterns, and of the best kinds in market.

Scythes, Snaiths, Cradles, and large Hand-rakes, made expressly for raking after the cart; also, Horse Hay Rakes. Pitchforks, very superior, of elastic steel.

Thrashing Machines and Fan Mills, combined or single. Horse Powers of the most approved kinds, such as the Endless-chain or Railway, Circular, Cast Iron, &c.

Ruta Baga, Turnips, Cabbages, and all other sorts of field and garden seeds. R. L. ALLEN,

189 and 191 Water street, New York, Ag^t Warehouse.
June 1, 1853.

French Zinc Paint.

THIS new and beautiful article of Paint is now offered to the trade and public, ground in prepared linseed oil, for the first time in this country. It has been used successfully in France for the last five years, where it has superseded white Lead as a paint.

The French Zinc when properly prepared and used, makes the most brilliant and durable white in use, and is entirely free from all poisonous qualities.

The French Zinc is not more expensive than white lead, and is prepared in such a manner that it requires no further preparation for use, than to thin it with Turpentine or raw Oil to the consistency of white lead paint.

The French Zinc is very much whiter, and has a better body, than the New Jersey Zinc.

The French Zinc is offered dry, and prepared as above, in quantities to suit purchasers, at the Manufacturer's Depot, No. 17 Buffalo st., Rochester, N. Y.
July, 1852, M. F. REYNOLDS.

MCCORMICK'S REAPING AND MOWING MACHINE FOR 1853.

FROM the well known reputation of my Reaper in the hands of more than 700 farmers, and that it has maintained its high superiority wherever it has been fairly tested—having again, after a nine days' trial with Hussey's in England at the last harvest on the Royal Agricultural farm, which was the most extensive trial ever made with Reapers in any country, been declared by the able jury of English farmers as decidedly the best machine in every respect, and recommended to the farmer's of England as one on which they may safely rely to cut their harvest, and which since that time has been greatly improved, and its capabilities as a mower thoroughly tested, and which I am now prepared to warrant superior to any other, both as a Reaper and as a Mower—further testimonials of its superiority can hardly be necessary.

That Seymour & Morgan, Manna, and others, are making and selling my machine, *altered, much to its prejudice*, with the hope of avoiding the responsibility of infringing my patent, is the best evidence of the superiority of my own. They will be held responsible, and arrested in their course as soon as the law which is sure can reach them. Those purchasing and using their machines become liable with them.

To convince any responsible farmer (who is in doubt which is the best machine) of my confidence of the superiority of my own, I will permit them to take one of mine with one of Hussey's or Burral's on trial, to keep the one preferred; and am ready to submit to the same test such points in other machines, claimed as improvements, that are not my own.

The new improved Reaper and Mower will be forwarded to any part of the State or Canada, if ordered before the stock on hand is exhausted, of THOS. J. PATERSON, Rochester, Office No. 6 Burn's Building. Price \$110 cash, or \$30 on delivery and \$5 on time, and \$25 cash extra for mowing attachment, or \$30 on time. Subject to freight from Buffalo.

Some few reapers of last year, an excellent article, can be had at \$100 cash and \$105 on time.

For further particulars see handbills.

Rochester, May 20, 1853.

CAUTION:

Ketchum's Patent Mowing Machine.

THE public will take notice, that in 1847, Letters Patent were granted to Wm. F. Ketchum for improvements in Grain and Grass Harvesters, and re-issued on the 26th day of April, 1853, (for claims, a copy of which is given below.) That the undersigned are owners of said Patent right for the whole United States, except Wisconsin, and will cause legal proceedings to be instituted against all persons who shall make, sell, or use, machines in violation of said Patent. The public will further take notice, that no privilege to use these improvements have been granted to any one except the right to use them—for the purpose of cutting grain only—in the Reaping Machines known as the New York Reaper, manufactured by Messrs. Seymour, Morgan & Co., of Brockport, N. Y.

The attention of the public is particularly called to the Machines manufactured by E. B. Forbush & Co., of Buffalo, and John Adriance, of Poughkeepsie, N. Y. These Machines are a direct and palpable infringement of our Patent, therefore any person making, selling, or using said Machine in any of the United States, except Wisconsin, must expect to be dealt with to the full extent of the law.

HOWARD & CO.

CLAIMS.

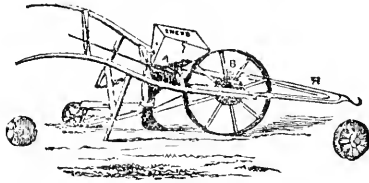
First. Placing the cutter bar and cutters lower than the frame of the Machine, and opposite the side of the plane of the wheel, in such a manner as to leave unobstructed space below the frame, and also between the wheel and the cutter, with their supports to allow the machine to pass freely and without clogging over the cut grass or grain, as set forth.

Second. Placing the cutters lower than the frame and axle and in or nearly in the same vertical plane with the axle, on which the frame hangs and vibrates, and parallel or nearly so, to said axle, so that the vibrations of the frame, on uneven ground, shall not materially elevate or depress the cutters, as set forth.

Third. The endless chain of cutters in combination with the guard teeth, as described.

Buffalo, June 1, 1853.—14.

HALLOCK'S Ag'l Warehouse and Seed Store.
No. 24, Exchange street, Rochester, N. Y.



[Emery's Corn Planter and Seed Drill.]

THE subscriber, late from the establishment of Emery & Co., manufacturers at Albany, where he has been engaged for the past six years, has been appointed their **SOLE AGENT** in Rochester and Western New York, for the sale of *Emery's celebrated Railroad Horse Powers and Threshing Machines; Circular and Cross-cut Saw Mills, Feed Mills, Corn-stock and Hay-Cutters, &c.*

adapted to the Power, and now offers them at manufacturer's prices, with the transportation added, and subject to the warranty, as follows: "To work to the satisfaction of purchasers as represented in circulars and catalogues, or to be returned within three months, and full purchase money to be refunded." The attention of farmers is solicited, and a careful investigation into the construction of this Power and its comparative merits, as well as price requested, before purchasing elsewhere. He is also agent for their

COMBINED REAPER AND MOWEY,

and keeps constantly on hand Plows, Hay-Cutters, Corn Shellers, Seed Planters, &c., &c., comprising a complete and extensive stock of Agricultural and Horticultural Implements generally, together with a full assortment of Field and Garden seeds, of the best imported and Shaker growth.

He is also agent for the sale of Seymour's Grain Drills and Broadcast Sowers, Wheel Cultivators, Gang Plows, Clover Hullers, Cider Mills, Clover Gatherers, Horse Rakes, Scythes and Snaths, Hand Rakes, Grind Stones, &c.

He will be prepared to furnish dealers with Drum and Taylor's well known Scythes; also Manure, Straw, and Hay Forks, Snaths, Rifles, and other haying tools at manufacturer's prices, wholesale and retail.

Particular attention is called to a **New Plow**, which is believed to be the best cast iron Plow ever offered, and which is warranted to do better work, with less expense of team, than any other Plow heretofore sold in Rochester—while the price is less than any other equally well finished.

The "uniform one-price cash system" will be adopted, with prices as low as the cost of articles, and just compensation for labor and time, will allow.

Farmers and others are invited to call and examine the stock of Machines and Implements, and are assured that no effort shall be wanting to meet promptly the wants of a discriminating public.

Circulars and Catalogues furnished gratis on application personally or by mail. E. D. HALLOCK,
June 1, 1858—If No. 24, Exchange street, Rochester.

Garden and Field Seeds,

FROM the new establishment of VANZANDT & BOWDISH, No. 114 State street, Rochester, N. Y., can be purchased of the merchants generally throughout the country, in papers or packages, on reasonable terms. Also, at the Agricultural Warehouse of E. D. HALLOCK, No. 24 Exchange street, Rochester, N. Y.

The Seeds from this establishment can be relied on as being of the best quality. They are mostly imported, or grown for us by the *Eastern Shakers*, and are warranted good and true. Full directions for cultivation printed on each paper and package.

VANZANDT & BOWDISH.

Rochester, May 1, 1858.

Cochin China Eggs for Sale.

THE subscriber has the best collection of Cochin China fowls in the State, and, perhaps, in the country—so stated by those who have seen them. They obtained the first premium at the Monroe County Agricultural Fair last fall. My stock was obtained from J. VICK, JR., one of the editors of the *Farmer*, and are pure and exceedingly fine.

I will sell eggs from these fowls, nicely packed, and forward by express, or in any way directed, for \$4 per dozen.
MILES DECKER,

April, 1858.

Rochester, N. Y.

The Stowell Ever Green Sweet Corn.

A QUANTITY of this new and valuable variety, from seed raised by Professor J. J. Mapes, L.L.D., for sale. Per bushel, \$16; peck, \$5; half peck, \$3; quart, \$1; sent by express or mail to any part of the country, on receipt of the money by post. This is beyond all doubt the best and most prolific kind of Sweet Corn ever grown. No farmer should be without it. With ordinary care it will repay cost a hundred times over the first season.

DIRECTIONS.—A quart of seed will plant one-tenth of an acre, four to five kernels to the hill. Prepare ground well. Cultivate like common corn. It may be planted any time before the middle of June; earlier the better.

[From the Working Farmer.]

"We have long been convinced that sweet corn would prove superior as green fodder to any other; and the only objection urged against its use has been the smaller yield per acre compared with other kinds. We are now prepared to recommend the use of Stowell's evergreen sweet corn for this purpose. The stalks are nearly as sweet as those of sugar-cane, and double the quantity can be grown of the acre, to that resulting from ordinary sweet corn."

Another advantage claimed for this corn by Prof. Mapes, though the subscriber does not endorse it, is, that when desired, it may be kept *green and fresh all the year round*.

[Professor Mapes, in the "Working Farmer," gives the following directions for preserving the Stowell Ever-green Sweet Corn:]

"The ears should be gathered when fully ripe, and the husk should be tied at the nose (silk end), to prevent drying, when it will keep soft, white and plump for more than a year, if in a dry and cool place. At the dinner of the Managers of the Fair of the American Institute, last year, we presented them with this corn of two successive years' growth, boiled, and there was no perceptible difference between the two. This year we sent to the Fair one stalk containing eight full and fair ears, and could have sent many hundred stalks of six ears each."

Many other recommendatory notices might be given.

All orders promptly supplied. Address, post-paid, ALFRED E. BEACH, White Plains, Westchester Co., N. Y. May, 1858.—2t.

Employment for Young Men.—Book Agency.

D. M. DEWEY, Arcade Hall, Rochester, has, during the past nine years, employed several hundred young men in the sale of books, and is now more extensively than ever engaged in the sale of good and valuable books by traveling agents. The following are a few of the books now offered:

- Uncle Tom's Cabin, in paper, retail,..... 38
- Sequel to Uncle Tom's Cabin, in paper, retail,..... 25
- Key to Uncle Tom's Cabin,..... 50
- Yonah on the Horse, the best work on the Horse,..... \$1 50
- Barry's Fruit Garden, the best work on Fruits,..... 1 25
- Life of the Empress Josephine, by Healdley,..... 1 25
- Dick Wilson, a new Temperance work,..... 1 25
- The Australian Captain, a book of facts,..... 1 25
- Chemical Field Lectures—Agriculture,..... 75
- Bibles, New Travels, Histories, Biographies, Agricultural Books, Novels, Pamphlets, &c., &c., all of which are put to agents at the lowest cash prices—and agents are indemnified against loss. A small cash capital of from \$15 to \$30 will be required, and the agent can earn from \$1 to \$5 a day, depending upon his adaptation to the business.

N. B.—Orders for any Book wanted, with the price of the book enclosed, will be promptly answered by mail, and the book sent free of postage.

Subscriptions received for all American and Foreign Periodicals. Address D. M. DEWEY,
May, 1858. Arcade Hall, Rochester, N. Y.

Superphosphate of Lime.

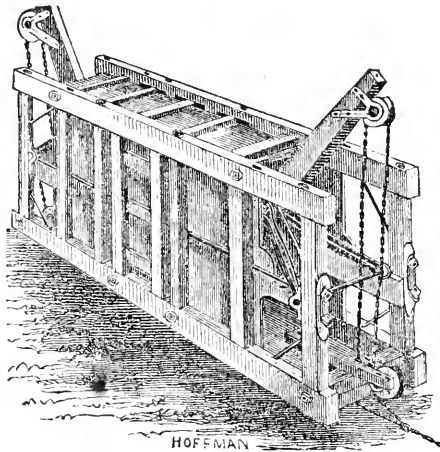
OF the best quality, and various other Fertilizers, for sale at the lowest prices.

Plows, and all other Farming and Gardening Tools, and a large assortment of Field and Garden Seeds, of the best quality. R. L. ALLEN,
May, 1858—2t. 189 and 191 Water-st., New York.

PERUVIAN GUANO.

JUST received per ship Grecian, first quality Peruvian Guano.

No. 1 Superphosphate of Lime constantly on hand. Agricultural and Horticultural Implements, and field and garden seeds, the largest and most complete assortment to be found in the United States. R. L. ALLEN,
June 1, 1858. 189 and 191 Water street, New York.



H. L. Emery's Newly Invented Double, Toggle-Jointed, Horizontal, Progressive Lever Hay and Cotton Press.

PROBABLY no one thing has been more wanted, and less improvements made upon it of late years, than the Hay Press. Notwithstanding this was completed quite late the past season, a large number were made and put into successful operation. As seen in the cut it is closed up and about midway in process of compressing a bundle of Hay. When fully pressed home, the ends of the levers, which are seen at each end extending above the box, are brought down by the chains or ropes and shelves, until the levers themselves become horizontal with the floor. The Press is provided with two followers, both working from the ends towards the center and each other. The chains or ropes from the levers are connected together by passing one of them under the machine and both joining in a larger chain or rope—this larger one being connected with a capstan or blocks and ropes, as most convenient.

When the Press is driven home, the hay becomes pressed into a bundle standing on its end. The side doors are thrown open while the bands are passed round the bundle and secured, when the top doors are loosened and the bundle thrown out. For operation, the levers are raised, the followers drawn back, and the top doors opened from the center to each end by unbuttoning the middle cross bar, as seen in the cut. The opening on the top for receiving hay, is 2 feet wide and 5 feet long. The Press stands upon the floor or ground when in use, which makes it both convenient and capacious for filling and treading in the hay.

The whole Press measures 14 feet long, 2 ft. 10 in. wide, 4 ft. 10 in. high, outside measurement, and weighs, complete, from 1200 to 1500 lbs., and is capable of compressing 250 lbs. of Timothy Hay into 16 cubic feet, (being 2x2x4 ft.) at the rate of five bundles per hour, with two men and one horse, and heavier bales in proportion as to size and time required.

For transportation, the inside work is readily removed and boxed up, while the sides are packed together making solid cubic measurement of the whole thing.

Price complete, with chains and capstans, \$135, and warranted to work as represented, to the satisfaction of the purchaser.

I will, in a future number, give a further notice in detail, with more cuts illustrating its several parts detached.

For further particulars address H. L. EMERY,
April, 1853. Albany, N. Y.

Premium Dahlias.

THE subscribers offer for sale this Autumn and the ensuing Spring, 10,000 Dahlia Roots, which have proved to be the choicest collection in the States and Canada. [See records of the Fairs for the last four years.]

Persons commencing the Nursery business, and Amateurs, will find it to their advantage to give us a call, or make enquiries before purchasing elsewhere.

C. J. RYAN & CO.,

Rochester and Charlotte Plank Road Nurseries, Rochester, N. Y. [11-17]

EMERY'S MOWER AND REAPER.

THE subscriber, not only having made himself practically acquainted with the construction and working of all the successful machines of this class, but having made and successfully introduced several valuable improvements in some classes of agricultural machinery, which have already gained favorable and world-wide reputation and adoption, flatters himself that he has also made an improvement in the construction of a Mower and Reaper of equal if not greater merit, than any of his former improvements.

It will suffice to say, that while this is the most compact, light, simple, cheap, durable, easy working machine, it is at the same time the most perfectly adjustable, and easily convertible into a Mower or Reaper, working as perfectly in either form as those of the best other kinds, whether simple or combined. The frame itself is so suspended upon the axis of the main wheel, as to be elevated and depressed at pleasure, so as to secure a horizontal or inclined (forward or back) position of the whole machine, at whatever elevation used, thus always having the cutting works in proper position.

In reaping, a reel is used, and the raker stands erect, face forward and directly behind the platform, with a support about him; the movable platform being on the same plane with the frame-work at the side of the discharge, and at the same time about two inches above the stubble. With the above introduction, and the diagrams to follow, together with those in this number of the Genesee Farmer, the public will have before them several machines from which to make a selection before purchasing for the coming season, and at the same time know what they are purchasing, much better than to be guided alone by impracticably written and published reports of committees of public trials, and be enabled to purchase only such articles as have their practical as well as theoretical merits plainly pointed out, or if not so pointed, to purchase only of responsible manufacturers, who are willing to back their machines by their reputation and capital.

For further particulars concerning the Reaper and Mower above described, address

HORACE L. EMERY, Albany, N. Y.

March, 1853.

E. D. HULLOCK, No. 50 State street, Rochester, is agent for Western New York, and will have one put up in running order in his store. Those in his vicinity wishing to obtain a Reaper and Mower, are requested to call and examine the merits of the above machine before purchasing elsewhere.

Patent Mammoth Premium Corn-Stalk, Hay, and Straw Cutters & Grinders.

CAPABLE of preparing 100 bushels of Corn-stalks, or One Ton of Hay or Straw, per hour, and reducing the largest Corn-stalks to the consistency of Cut Straw, avoiding the necessity of steaming or soaking, and saving 80 per cent. over the common way of feeding fodder. Horses and Cattle will do as well on fodder prepared this way, as on the best hay. The First Premiums have been awarded at every exhibition where they have been exhibited for competition. It can be worked by hand or power, without additional cost. The inventor will forfeit \$50, after an impartial trial, when this Machine is used in preparing good fodder, if it does not prove to save 80 per cent. over the common way of feeding fodder, and it may be fed in the same condition as the machine leaves it, without meal or soaking. Cows fed on fodder produce sweeter butter. Over 900 of these Machines have been sold. Price—\$35.

State and County Rights for sale.

Gilbert's Excelsior Thresher and Cleaner, accomplishing more, with the same power, than any other Machine. It can be driven with two horses.

Price—\$200 and upwards, according to size, Horse Power included. Apply post paid to J. G. GILBERT,
[2-17] 216 Pearl st., New York.

Manures.

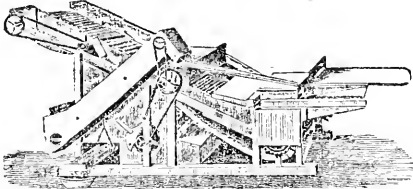
FERTILIZERS of all kinds for sale by the subscribers. Improved Superphosphate of Lime, Superphosphate of Lime—both the above made after the recipe of Prof. Marsh. Peruvian Guano, Sulphuric Acid, Bone-dust, Potash Sparlings, Pondrette, Plaster of Paris, &c. &c.

GEO. H. BARR & CO.

53 Cortland St., New York.

Northern N. Y. Live Stock Insurance Company, Plattsburgh, N. Y. For terms, please apply to agents of the Company.

AGRICULTURAL IMPLEMENT MANUFACTORY,
CORNER OF CAROLINE & THIRD STREET,
BUFFALO, N. Y.



Pitts' Patent Separator—Improved Double Pin-ton Horse Power—Pitts' Corn & Cob Mills, &c.

I HEREBY give notice that since the extension of the patent right on my Machine for Threshing and Cleaning Grain, I have removed to Buffalo, N. Y., where I have permanently located, and erected a large establishment for the future manufacture of the above Machines.

The Separator has been enlarged, improved, and rendered more permanent and durable in all its parts, while the Horse Power for strength, ease, durability and cheapness of repair is not surpassed by any in the United States. This Power is warranted to stand the full strength of eight horses—also to give as much effective or useful power when driven by one or two horses as any other Horse Power, whether constructed on the endless chain or lever principle. It was put on trial at the great exhibition of Horse Powers and Threshing Machines at Geneva, July last, 1852, where it received the New York State Agricultural Society's First Premium * for the best Horse Power for general purposes. The Separator, at the same trial, also received the Society's First Premium.

My Machines will thresh and clean from three to five hundred bushels of wheat per day, and other grain in proportion.

Two hundred of the above Machines are for sale at the Agricultural Works of the subscriber in this city, all warranted to be a better article than can be purchased at any other shop, and if they do not prove on trial to be so, I will take them off the hands of the purchasers at the price they may pay me for them.

I further notify all persons who are purchasing Horse Powers and Separators to be used in California or Oregon, that I will hold them accountable for any infringements of the rights secured to me by letters patent in the above Machines, as I am manufacturing a Horse Power and Separator expressly designed for that section.

All orders for the above Machines hereafter addressed to JOHN A. PITTS, Buffalo, N. Y., will receive prompt attention.

May, 1853.—tf.

JOHN A. PITTS,
Buffalo, N. Y.

Imported Horse, "Consternation."

THIS thoroughbred horse has been so often exhibited at the Fairs of the New York State Agricultural Society, and always without a rival, that it is unnecessary either to describe or praise him. Six or seven of his colts, of various ages, were shown with him at Utica last fall. Two of them received first premiums, and all of them were greatly admired. Many of them, now four and five years old, are owned in Oneida county. Any person may be convinced of their great superiority by inquiring of almost any farmer or horseman in the towns of Rome, Lee, or Western. His colts and fillies are already in demand for breeding. Several have been sold during the past winter, at handsome prices, to go out of the State.

His pedigree will be found complete in Derby & Miller's edition of Youatt, and is confirmed in every particular by breeder's certificates and copies of the English Racing Calendar, and English Stud Book, now in possession of the subscriber.

He will stand the coming season at the farm of the subscriber, two miles west of Syracuse and adjoining the town of Geddes.

Terms.—\$10 for the season, and \$15 to insure; the money to be paid in advance in all cases. When a mare is insured and left at the farm of the subscriber, or regularly returned to the horse until the groom is satisfied she is in foal, a receipt will be given promising to refund the money if the mare was not got in foal. Pasturage furnished at three shillings per week. Mares to be at the risk of owners in all respects.

J. B. BURNETT,
Syracuse, N. Y.

[4-31]

D. S. MANLEY & BROTHER,
BUFFALO NURSERY,
Buffalo, N. Y.

HAVING purchased this well established Nursery of its original proprietor, Col. B. Hodge, we take pleasure in offering for sale an unusually fine assortment of

FRUIT AND ORNAMENTAL TREES, SHRUBS AND PLANTS.

Our Fruit Department is supplied with fine healthy trees on their own stocks, of all the desirable varieties now in cultivation, together with Cherries and Pears dwarfed on superior stocks.

The Ornamental Department includes all the best varieties of Evergreen and Deciduous trees.

Roses.—One of the finest collections in this country, comprising all that are new and rare.

Dahlias.—An unrivalled selection of Dahlias, which has been procured at great cost.

Peonies.—We call particular attention to our stock of Peonies, both herbaceous and tree varieties.

The stock of *Shrubs* is unusually extensive and was collected by the late proprietor with peculiar care.

Of Currants, Gooseberries, Raspberries, Grapes, and Strawberries, we have vigorous plants of the best varieties.

It will please us to furnish all applicants with our Catalogue.

Evergreen Trees and Shrubs.

The following Evergreens can be supplied by the quantity, at low prices:

Norway Spruce, from 6 inches to 2 feet.

American White Spruce, 2 to 3 feet.

Balsam Fir, 2 to 4 feet.

Austrian Pine, 1 to 3 feet.

Scotch Fir, 1 to 3 feet.

Red Cedar, 1½ to 2 feet.

American Arbor Vita, 1 to 2 feet.

Chinese Arbor Vita, 2 to 3 feet.

Doedar Cedar, 1 to 1½ feet.

Chill Pine, (*Araucaria imbricata*), 12 to 18 inches.

Japan Cedar, (*Cryptomeria Japonica*), 1 to 5 feet.

Lofy or Bhotan Pine, (*Pinus excelsa*), 1 foot.

Himalayan Spruce, (*Abies morinda*), 6 to 12 inches.

And many other rare species and varieties, forming one of the most complete assortments of Conifers in the United States.

ELLWANGER & BARRY,

Feb. 1, 1853. Mt. Hope Nurseries, Rochester, N. Y.

North River Ag. Warehouse and Seed Store.
53 CORTLAND ST., NEW YORK.

GEORGE H. BARR & Co. invite the attention of Farmers, Planters, and others, to their large and varied assortment of Agricultural Implements, Seeds, Manures, &c., &c., all of which will be furnished at the lowest prices. Their assortment includes

Plows—All the improved kinds by the most approved makers.

Horse Powers—Of all kinds and sizes, with and without Threshers, &c.

CORN SUFFLERS—All the approved kinds, and some of recent introduction.

STRAW CUTTERS—Of all sizes, and kinds, for hand and horse power.

CORN AND COB CRUSHERS—Of all kinds and sizes.

FANING MILLS, CULTIVATORS, HARROWS, CHURNS of all the approved kinds.

RAKES, HOES, FORKS, and a general assortment of Horticultural and Garden tools.

REMOVAL!

HALLOCK'S AGRICULTURAL WAREHOUSE has been removed from No. 59 State street, to

No. 24 Exchange St., Rochester,

in the Store formerly occupied by J. E. CHENEY as a Stove Store. The new store is well supplied with Implements, Seeds, &c., comprising a larger and more complete assortment than heretofore. Former customers and farmers generally are invited to call at the new establishment and examine for themselves.

E. D. HALLOCK,
April, 1853. 24 Exchange St., Rochester, N. Y.

Prouty and Mear's Plows.

A large assortment of these celebrated Plows can be found at the North River Agricultural Warehouse and Seed Store, 53 Cortland St., New York. GEO. H. BARR & CO.

PRINCE & CO.'S IMPROVED PATENT MELODEON.

GEO. A. PRINCE & Co., MANUFACTURERS, 200 MAIN ST., BUFFALO, N. Y.
WHOLESALE DEPOT, - - - - - 87 FULTON STREET, NEW YORK.

For the convenience of MUSIC DEALERS in all parts of the United States, we have made an arrangement with the following firms, who will supply the TRADE at our regular Factory prices:
GEO. P. REED & CO., 17 Tremont Row, Boston, Mass. COLBURN & FIELD, 154 Main St, Cincinnati, O.
BALMER & WEBER, 53 Fourth St., St. Louis, Mo.

General Agent for New York City,
WM. HALL & SON, - - No. 239 Broadway, opposite the Park.

The subscribers take this method of calling the attention of the public to a new Musical Instrument, as yet but little known to the musical world, viz: Prince and Co.'s Improved Patent Melodeon.

It is now about five years since these instruments were first offered for sale, and during that time the increased demand for them has been unparalleled. One hundred and fifty workmen are constantly employed in the manufacture and finishing from 75 to 80 instruments per week, and as yet they have not been able to supply the demands promptly.

For the benefit of those residing at a distance, and consequently unable to inspect the Melodeon before purchasing, we will endeavor to give a short description of the instrument.

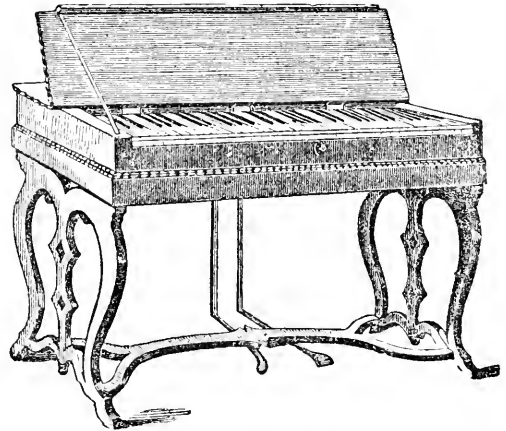
The cases are made of Rosewood, and are as handsomely finished as any piano forte. The keyboard is precisely the same as the piano or organ, and the tone (which is very beautiful) closely resembles that of the Flute Stop of the Organ—the notes speak the instant the keys are touched, and will admit of the performance of as rapid passages as the Piano. The Pedal on the left is intended for a swell, and with which the most beautiful effects can be produced. The Pedal on the right supplies the wind, and works so easily that a child can manage it without any exertion. The Bellows, (which is something entirely new, and for which a Patent was granted in December, 1846,) is a reversed or exhaustion Bellows, and it is this, in a measure, which produces the peculiar tone. The instrument can be immediately made portable without detaching any part, the bellows receding into the body of the instrument, and the legs folding under and springing to their places, leaving the whole in a compact form. Each instrument has a packing case secured by lock and key.

The volume of tone is equal to that of a small organ, and by means of the swell may be increased or diminished at the pleasure of the performer; it is sufficiently loud for small churches, and is well calculated for a parlor instrument. Hundreds have examined them, and all have been loud in their praise; and the best evidence of their merit is their rapid sale. But it is a new instrument—a new invention, and is yet but little known in the musical world, and it is for this reason that we call to it the attention of all lovers of Music, believing that there are thousands who would lose no time in securing one, were they aware of the existence of such an instrument, and the low price at which it could be obtained.

The following letter from Lowell Mason, Boston, to G. P. Reed, we are permitted to use:

MR. GEO. P. REED, No. 17 Tremont Row, Boston, Mass.
Dear Sir—At your request I have examined one of the Melodeons manufactured by Messrs. Geo. A. Prince & Co. of Buffalo. I think the instrument in all respects equal, and

in some respects superior, to any others of similar kind which I have seen, and in particular with respect to quality of tone and promptness of touch, or action of the reeds, by which quick passages may be performed with certain and distinct articulation of tones. An instrument of this kind is the best substitute for an Organ in Church Music with which I am acquainted.
LOWELL MASON.
Boston, Mass., Sept. 26, 1849.



Five Octave—Portable. Price, \$75.

PRICES.

FOUR OCTAVE MELODEON, extending from C to C.....	\$45 00
FOUR AND A HALF OCTAVE MELODEON, extending from C to F.....	65 00
FIVE OCTAVE MELODEON, extending from F to F.....	75 00
LARGE FIVE OCTAVE MELODEON—Piano style.....	100 00
LARGE FIVE OCTAVE MELODEON—Piano style with two sets of reeds, tuned in octaves,....	150 00

Just published, PRINCE'S COMPLETE INSTRUCTOR FOR THE IMPROVED MELODEON; to which is added favorite Mrs. Voluntaries, and Chants, arranged expressly for this Instrument. Price 75 Cents.

CAUTION.—In consequence of the great success which has attended the introduction of Prince & Co.'s Melodeons, numerous imitators have sprung up in different parts of the country—offering instruments under the same name, and in outward appearance resembling them. We would therefore caution the public to be on their guard, and examine those made by Prince & Co. before purchasing. Many improvements applied *are exclusively our own*, and being the original manufacturers, our experience has enabled us to produce Instruments which a discerning public have unanimously pronounced superior to any thing of the kind hitherto manufactured. Many of the most eminent Musicians of the cities of New York and Boston have voluntarily given testimonials as to the high character of our Instruments, which can be seen on application.

All orders from a distance will be promptly attended to, and a written guaranty of their durability will be given if required.
GEO. A. PRINCE & CO.

THE HORTICULTURIST,

And Journal of Rural Art and Rural Taste.

THIS is a Monthly Journal of 48 pages, beautifully printed on the finest paper, and elegantly illustrated, making one of the most beautiful Monthly Magazines published in the world. It is devoted to Horticulture, in its various departments, Rural Architecture, and to all that concerns Rural Life, and to the cultivation of Rural Taste.

It is edited by P. BARRY, so long known and esteemed as the Horticultural Editor of the *Genesee Farmer*, and published at the low price of \$2 per year. A discount of 20 per cent. allowed to agents. JAMES VICK, Jr., Publisher, Rochester, N. Y.

AGRICULTURAL.

EVERY FARMER SHOULD OWN

Cole's American Veterinarian: A Treatise on the Diseases of Domestic Animals. In one volume, 18 mo., with plates, sheep. Price, 50
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The only work on this subject ever published in America. It is highly recommended by Prof. Silliman, and other scientific gentlemen.

The American Fowl Breeder. Price, 25

Published by JOHN P. JEWETT & CO.,

Nos. 17 and 19 Cornhill, Boston.

For sale by all booksellers. [5-4]

Fertilizers.

Peruvian Guano, \$45 per ton.

Superphosphate of Lime, 2½ cts. per lb.

Bone Sawings, or Meal, \$2.50 per brl.

Turnings and Crushed, \$2.25 "

Pulverized Charcoal, \$1.00 "

Potash Scrapings, 3½ to 4 cts. per lb.

Plaster, ground, \$1.12½ to 1.25 per bbl.

Sulphuric Acids, 2½ to 3 cts. per lb.

For sale at the State Agricultural Warehouse,

LONGETT & GRIFFING,

June 1, 1853—4t. No. 25 Cliff street, New York.

Plows and Cultivators.

PROUTY & MEARS' Patent Center Draft Plows—all sizes—and castings for the same.

Minor & Horton's New Improved, fitted up in the most substantial manner.

Rien's Iron Beam Plows, of all sizes.

Universal Cultivators, with Scarifiers; Expanding do.; and Hand Garden Cultivators and Plows.

For sale by LONGETT & GRIFFING,

[3d] No. 25 Cliff street, New York.

Superphosphate of Lime,

IN BAGS and Barrels, made by C. B. DE BRON, with full directions for use,—warranted a pure and genuine article— for sale by GEO. DAVENPORT,

No. 5 Commercial, corner of Chatham street, Boston, Agent for the manufacturer.

Also, for sale, Ground Bone, Bone Dust, Burnt Bone, Guano, and Grass Seeds, of reliable quality. [4-tf]

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Hong Kongs!

THE subscriber offers for sale the present season, Eggs of the famous Hong Kong Fowl. Address, post-paid,

SAM'L MCINTOSH,

April, 1853. Canoga, Seneca Co., N. Y.

Eggs of Chinese Fowls for Sale.

I HAVE a fine collection of all the improved varieties of fowls, and will sell eggs the present season of the following varieties:

White Shanghae, Black Shanghae, and Red Shanghae, at \$3 per dozen, nicely packed and forwarded as directed. Also, Royal Cochin China and Brahma Pootra, at \$4 per dozen. All fresh and fit for setting.

Address WM. VICK,
Rochester, N. Y.

April, 1853.

The Practical and Scientific Farmer's own Paper

THE GENESEE FARMER,

A MONTHLY JOURNAL OF

AGRICULTURE AND HORTICULTURE,

ILLUSTRATED WITH NUMEROUS ENGRAVINGS OF

Farm Buildings, Domestic Animals, Implements, &c.

VOLUME XIV, FOR 1853.

DANIEL LEE, JAMES VICK, JR., & JOSEPH HARRIS, Editors.

P. BARRY, Conductor of Horticultural Department.

Fifty Cents a Year, In Advance.

Five Copies for \$2—Eight Copies for \$3, and any larger number at the same rate.

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Post-Masters, Farmers, and all friends of improvement, are respectfully solicited to obtain and forward subscriptions.

Subscription money, if properly enclosed, may be sent (post-paid or free) at the risk of the Publisher. Address to DANIEL LEE,

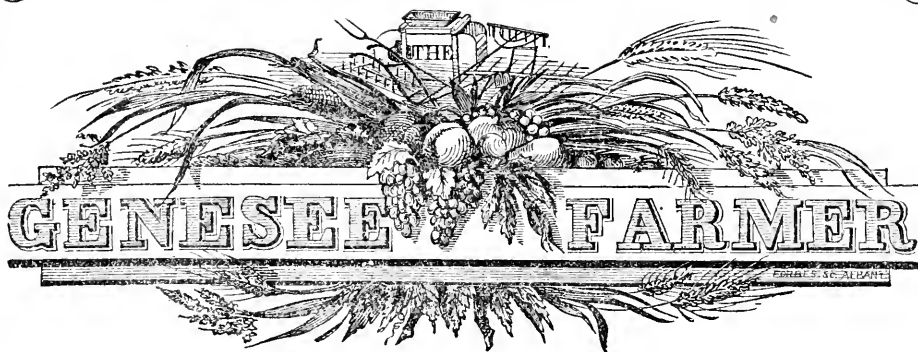
November, 1852. Rochester, N. Y.

POSTAGE LAW.—By the new Postage Law, which took effect on the 1st of September last, the postage on the *Genesee Farmer* for one year is as follows,—when paid quarterly in advance:

Anywhere in the State of New York, . . . 3 cts.

Anywhere in the United States, 6 cts.

STEREOTYPED BY J. W. BROWN, ROCHESTER, N. Y.



VOL. XIV.

ROCHESTER, N. Y., JULY, 1853.

No. VII.

THE CULTIVATION OF FISH.

THE time is not very remote when the cultivation of fish will become an important branch of rural industry in the United States. Our climates, lakes, rivers, creeks, and the artificial ponds that may be formed for purposes of irrigation, ornament, and fish-culture, will furnish admirable facilities for the breeding, feeding, and indefinite multiplication of the finny tribe. Some may suppose that the propagation of fish, even by the union of art and science, will not pay. Experiments, however, in France and Switzerland, now in progress, leave no room for reasonable doubt as to the profitableness of the labor expended in producing this article of human food; for physiological science has rendered those disposed to engage in pisci-culture a service that will completely revolutionize the business and avoid most of the hazards and losses hitherto experienced. It is our purpose to render this new process in the breeding of fish plain to the unlearned man or boy who ever caught one by hook, spear, or net.

Like other animals, fish are of both sexes—male and female. Everybody has seen the eggs of the female: but everybody has not studied the natural instincts by which these eggs are fertilized as they are deposited on the ground. Now, it is this study, or strictly scientific research, united with practical experiments in propagating fish, that has brought to light the great improvements in fish culture, to which attention is invited. The exceedingly numerous eggs of fish are hatched by the genial warmth of the sun while lying in pure running water. Hence instinct prompts most fish to ascend from deep lakes, bays, and the ocean, all streams that flow into them in order to deposit their spawn and hatch their young, which descend with their parents to the sea or lakes where they find the aliment that brings them to full maturity. The impregnation of the spawn is precisely similar to that witnessed in the fertilizing of the silk on the embryo ears of corn by the anther dust that falls from the tassels of the plant and rests upon the ends of the silk. Without the contact of the yellow dust upon the stigmas, not a kernel of corn would grow, however rich the soil. It is equally impossible to obtain a fish from the egg of a female without the contact of the fertilizing atoms derived from the system of the male. This much has long been known; but it was not known that one could gently express by the hand both the spawn from the female and the sperm from the male into warm, clean, running water, such as nature uses for hatching the eggs of fish, and thus multiply them by indefinite millions. Yet this operation (one of the simplest imaginable) is now successfully performed, and young salmon trout, shad, perch, and other fish, are transported in water from one stream or pond to another with as much facility as the scions of choice fruit trees are conveyed from one orchard or country to another.

The facility with which young fish may be multiplied from a few mature ones, under

favorable circumstances, which nearly every farmer can command, and the ease with which enough for seed may be transported in a few gallons of water frequently changed, presents this branch of industry in an entirely new aspect.

Of course young fish, like chickens, need daily and appropriate food to make them grow; and the study of the alimentary substances on which fish feed and wax fat is an important part of pisci-culture. In all streams, ponds, lakes and seas, where fish abound in a state of nature, worms, grubs, aqueous insects and plants also abound for their subsistence. If the ocean contained no plants, and was not adapted to their growth, animals could not live in its vast waste of desert waters; for any given number of strictly carnivorous animals, whether fish, insects, birds, or quadrupeds, must inevitably exterminate their kind, seeing that each individual would destroy before it was itself eaten, more animals than it could possibly propagate and bring to maturity. Hence, if there were no land plants there could be no land animals; for with the extinction of all plant-eating animals, flesh-eating ones would rapidly destroy each other until the last carnivorous beast died of starvation.

It is the highest achievement of the arts and sciences of agriculture and husbandry, to provide at all times a full supply of appropriate food for every cultivated plant and every cultivated animal, in the most economical manner. Nature has provided for the possible increase of all living things in a ratio truly marvellous; and in few animals are the possibilities of increase more wonderful than in the millions of eggs developed from the blood of a few fish which one may propagate. Young fish grow finely when they can get the eggs of toads, frogs, and other amphibials, to feed upon. All such animals, like young oysters, need a highly nitrogenous aliment. Fish may be reared on peas, beans, wheat, and most other seeds. Whatever will feed birds, will nourish fish; and the latter yield the richest known manure in the shape of guano. Instead of having sea-birds furnish farmers with guano derived from fish, let farmers themselves rear fish to be consumed by man at a profit to the producer, and then let the fertilizing atoms contained in the fish and extracted from the bottom of fish ponds, creeks, and rivers, be converted into guano (nightsoil) to enrich cultivated fields. Both land and water may be made to yield four-fold more food and wealth for the human family than they now do according to the population of the most industrious and civilized nations, provided the laws of nature are properly studied and obeyed. We are not prepared just now to suggest the best pastures for fish, for experiments have yet to decide the value of different articles of piscatory diet. Their food may be reared in water, or hard by where fish are grown, that they may be fed as steers, dairy cows, pigs, calves, and horses are often kept by stall-feeding. But without resort to artificial pasture of any kind, millions of valuable fish may be reared in the United States where the native stock is nearly or quite exhausted. On the head waters of the Hudson, Connecticut, Susquehanna, Alleghany, Potomac and Savannah rivers, the breeding of shad, trout, and white fish, may be prosecuted on a magnificent scale. One of the earliest and most successful experiments made in Europe, was conducted after this fashion:—The hull of an old river craft was sunk in a clear, running stream, and its bottom covered a few inches with sand and gravel as a suitable bed for the spawn of fish. Several holes were cut at both ends of the boat or vessel so that water ran through and over the bed of sand and gravel. Upon this the spawn and sperm, fully matured in the bodies of both sexes, were gently expressed and deposited, imitating nature, for the ova of the female are impregnated after they reach the ground. After the ova are hatched in the vessel, one can feed the young fry and change the water without allowing any of the fish to escape. In this simple nursery all depredators may be kept at a proper distance, and almost every egg fecundated and made to produce its fish.

As the living embryo in a new laid egg, or in an egg about to be laid by a bird, has a vitality independent of its parents, so the matured eggs of a female fish and the

matured sperm of the male may live some days, perhaps weeks, after their parents are dead, and may be transported thousands of miles by steam without destroying their vitality. Young fish may be carried with nearly equal facility. The superb salmon trout which we now get in the Rochester market, are big with the germs of a new generation; and we trust that some of our enterprising citizens, who greatly excel in propagating millions of fruit and ornamental trees, will turn their attention to nurseries for the production of myriads of young salmon. At the head waters of the Genesee river, the business might be carried on to a great advantage. It is respectfully suggested to the officers of the agricultural societies that they offer reasonable premiums to encourage this interesting branch of rural industry.

In the Patent Office Report for 1852, we have given a somewhat extended account of experiments made by M. M. BERTHOLT and DETZEM, who are now experimenting under the patronage of the French government in Alsace, a few miles from Basle in Switzerland. Some experience appears to be required to enable one to decide when the spawn and sperm of fish have arrived at full maturity, so that the operator may safely remove them from the bodies of fish, and plant them as he would seed corn, or set eggs for hatching out chickens. With ripe seed and proper care, a prolific crop is almost certain. The length of time that elapses from the deposit of eggs to the appearance of the fish, varies somewhat with the temperature of the water. So soon as the natural laws that govern this peculiar incubation are determined by satisfactory experiments, our readers shall be among the first to be informed upon the subject.

WOOL GROWING IN THE ARGENTINE PROVINCES.

IN a work recently published in London under the title of "Two Thousand Miles Ride through the Argentine Provinces; being an account of the Natural Products of the Country and Habits of the People," &c., &c.: by WILLIAM MACCANN, we glean a few interesting facts touching the growth of wool. Our author says: "A very industrious Irishman was lately in this neighborhood who bought eight thousand sheep at *one shilling and six pence per dozen*, which is no more than three half pence each; this is somewhat cheaper than eggs: for just now I cannot obtain an egg for less than three pence."

This magnificent grazing region, where horned cattle, sheep, horses, and mules may be reared to an almost unlimited extent, is about to be brought within twenty days travel by steam of New York. The empire of Brazil and the contiguous republics, spread over the immense valley of the Amazon and its tributaries, offer powerful inducements to all enterprising emigrants, whether from Europe or the United States. There is a considerable number of British and Irish settlers in the country who enjoy perfect security under the government, and are prospering in their circumstances. The climate of Buenos Ayres is favorable for breeding sheep; the cold in winter never being so intense as to require them to be housed. The land is very fertile, generally presenting a vast sea of verdure.

Mr. MACCANN's mission was of a mercantile character, and it is to be hoped that his work will soon be reprinted in this country, for it contains much information of interest to Americans. If good sheep can be had for three cents a head, and unlimited pastures for little or nothing on which to feed them, wool growing in South America must be more profitable than digging gold in California. A large number of Merino rams have been taken to the plains of Buenos Ayres, and the wool exported to Great Britain and this country is being greatly improved in quality as well as increased in quantity.

Fine wool has been grown in the land of the orange and fig in Spain; and the table

lands on the eastern water-shed of the Andes present at their varying elevations, a wide range of climates within the limits of easy travel of a flock of sheep. The great success that has hitherto attended this branch of husbandry under rude management, and while the governments have been almost constantly engaged in wars, would seem to leave no room to doubt that, under more favorable auspices, with security for life and property, with steamboats on all the navigable rivers, and steamships in all seaports, the business of wool growing, or cattle breeding and rearing, may be carried on at an enormous profit. Silver to the amount of two thousand million dollars has been taken from the mines in the Argentine Provinces. Of the six nations whose territories are mainly drained by the Amazon, all but Brazil have invited the commerce of the world to ascend that river and trade with them on the most favorable terms. The Legislature of Peru has placed \$200,000 at the disposal of the executive power to organize territories on the head waters of the Amazon, and a decree has just been published removing all duties on goods of whatever kind imported into the ports of Nauta and Loreto, and a homestead of four *fauagadas* of land is to be given to every immigrant, to whom is also guaranteed freedom of religious worship. Brazil controls the mouth of the Amazon, and has not yet consented to the free ingress and egress of the commerce of the republics drained by this river, which is said to be one hundred and fifty miles wide where it empties into the Atlantic. New Grenada, Equador, Peru, and Bolivia, are largely interested in opening a free passage down to the ocean; and the monopoly or tribute exacted by Brazil must be of short duration.

The agricultural wealth of that continent is not at all appreciated; but the time has arrived when a new order of emigrants, with their common schools, their Protestant churches, their steam presses, steamships, and steam locomotives, is to be extended over South America. Well does Lieut. MAURY of the National Observatory say:

"A spirit has gone abroad there, and it is upon the waters of the Amazon. A little more than two years ago the federal government selected a gallant officer of the navy, who was at that time serving in the Pacific, detached him from his ship, first for special service in Lima, and afterwards directed him to explore the Amazon from its source to its mouth; to sound its depths; and to gauge its capacities, present and prospective, for navigation, trade, and commerce.

"That expedition has returned; and Lieut. HENRICH, the officer in charge of it, appreciating the importance of placing the information collected by him before the public without delay, has already submitted his report to the government. It has been transmitted to Congress, and that body, rightly conceiving it to possess a high degree of interest, has ordered a large number of extra copies. The party consisted of but two officers.

"Count D'ORSEY, a French officer, had, when engaged in an exploration of the same region, been murdered but a short time before; yet, notwithstanding this, the American officer, when he arrived in sight of the great water-shed, determined, with the go-ahead spirit of his countrymen, to divide the party—to send his companion, accompanied by a young American sailor, whom he had enlisted in Lima, into Bolivia, and down the Madeira; while he himself, with no one but a Peruvian, and such of the natives as he might pick up by the way, to accompany him, resolved to undertake the main stream itself. Thus accompanied, he descended that river on rafts and in 'dug outs' through a distance of three thousand five hundred miles, and found it navigable for vessels of the largest class from the sea to the Andes.

"That expedition has stirred up the people in the Spanish republics of the Amazon. The President of Bolivia has taken the lead in the matter, and proved himself a statesman of the first order. He has thrown the Amazonian provinces of that republic open to the commerce of the world: he has proclaimed the freedom of the seas for the Amazon and its tributaries, and has offered a prize of \$10,000 to the master of the first steamer that arrives there from the ocean."

From the Atlantic to the Andes is 3,000 miles, in nearly a direct line due west; and the Amazon is navigable for large vessels all the way. Colonies of emigrants will soon be organized in the Middle States for settlement in Bolivia, where a cordial welcome is likely to greet their arrival. Exploring agents will soon be in that country and in the contiguous republics, to see what can be done in sheep husbandry, stock-growing, tillage, cutting timber, collecting dyestuffs, drugs and medicines, and buying sites for cities, villages, and manufacturing towns.

We should be much better pleased to see wool growing greatly extended in this

republic and our own country, than in South America or Australia; but sheep husbandry is on the decrease in half the States of the Union, and it is hard to compete with those that can purchase sheep by the thousand at three cents a head, and keep them without hay, turnips, or shelter. Nor is it possible for any protective tariff that American farmers may reasonably expect, to overcome the natural disadvantages attending the production of wool on a large scale in the Northern States. All clear-sighted men see the steady advance of free trade principles, whether they approve of them or not; and it is obviously the part of wisdom to adapt one's business to the condition of things as they actually exist, rather than as he may believe they ought to exist. Emigration, change of pursuit, and fearless adventure, characterize in an eminent degree the age in which we live. Agriculture is beginning to feel the effects of this new-born energy, and more fully developed love of novelty, called the spirit of progress; and as faithful chroniclers of passing events, we have deemed it our duty to call attention to the equatorial fields of the South; from which many million pounds of wool are now annually received, and for aught that we can see to the contrary, indefinite hundreds of millions may be yearly exported, before children now at school shall cease to need woollen fabrics. The annual export of cotton from the United States increased over 800 per cent. from 1821 to 1849; and the wool trade of Brazil, Buenos Ayres, and other contiguous nations, may advance with equal rapidity in the next quarter of a century. So far as mutton shall be in demand in this country, particularly in the Northern States, wool growing is likely to be profitable as a secondary interest; but improved land is beginning to cost too much for extensive sheep-walks, such as abound on the vast pampas of South America.

ARTIFICIAL MANURES.

THE *Working Farmer* says that "The increased use of artificial manures in the United States has been greater within the last year, than within any five years since the formation of our government." Whether this statement be true to the letter or not, there is no doubt of the fact that American agriculture is about to exhibit a new feature in its connection with the manufacture and use of the food of plants. Having steadily pursued an exhausting system of tillage and husbandry for two centuries, the cultivators of the soil in the old States find it necessary to possess more manure than can be made on naturally poor or impoverished farms. Hence, they are compelled to purchase guano, poudrette, bone dust, ashes, gypsum, street manure, and other offal from cities. This necessity for more manure places farmers and gardeners in many places within the reach of sharpers and speculators, who act on the maxim of JEMIMA WILKINSON, that the world is a goose; and he is a fool who has no hand in plucking her. BRANDRETH has realized a princely fortune from his bread pills; SWAIN from his *panacea*; BARNUM from TOM THUMB; and why should not Mr. MAPES from his "improved superphosphate of lime"?

When the Misses Fox invented their spirit rappings not many rods from the *Genesee Farmer* office, they were poor, and lived in obscurity; now they support a fine establishment in the city of New York, and have ex-U. S. senators at their feet as votaries; they have turned the head of a judge on the bench of the Supreme Court of the State, and sent scores, perhaps hundreds, perfectly insane to lunatic asylums. When JOSEPH SMITH, then a resident of an adjoining county, got up his golden Mormon bible, the writer obtained one of the first copies published, and heard the prophet's account of its miraculous revelations to him. We did not believe that it was possible for such a tissue of absurdities to gain proselytes in this age and country; but experience has shown that Mormonism has sufficed to found an organized Territory under the United States gov-

ernment, and now threatens to establish an independent nation in the heart of the Republic. We never hear Mr. MAPES lecture that he does not remind us of the peculiar shrewdness of JOSEPH SMITH; nor read in his journal the glowing accounts of "twelve thousand late Bergen cabbages raised on an acre manured with five hundred weight of the *improved* superphosphate of lime," that the golden bible of the Mormon prophet does not seem to be the authority which we are consulting. In the leading article in the June number of the *Working Farmer* the public is told that "The improved superphosphate of lime, which was introduced by *ourselves* but little more than twelve months ago, is now in such demand that the manufacturers can not supply one-tenth of the quantity asked for, notwithstanding their factory is capable of delivering ten tons or more per day. And even the imitations which have been made within the last four months, are eagerly bought up by those who can not be supplied with the genuine article." These counterfeit quacks are, however, soon to be knocked into pi; for "the manufacturers of the improved superphosphate are rapidly increasing their facilities, and will shortly be able to deliver twenty tons or more per day." This, however, Mr. MAPES says, "will be *very far* from an adequate supply;" so that "imitators" may stand some chance to aid in picking the professor's goose, after all!

This artificial manure, which is said to be twice as powerful as the best Peruvian guano, is sold at the low price of fifty dollars a ton; and by selling twenty a day, a thousand dollars a day will be the income of the establishment, forty per cent. of which at least will be profit. A profit of \$400 a day for 300 days in a year gives a nett gain of \$120,000 per annum—a business that beats BARNUM'S best menagerie, and the Misses Fox out of sight.

The *Genesee Farmer* has been accused of dealing unfairly by the inventor of this manural *panacea* because it published an analysis of it made first by Dr. ANTISELL, and then by Mr. JOHNSON, of Yale College, by which the agricultural value of the article was revealed to the public. Other and more favorable analyses have been published by Mr. MAPES, and this demands at our hands the plainest possible statement of the abuses to which analytical chemistry is liable in its application to artificial manures, and rural affairs generally, without reference to Mr. M.

Ammonia, or organized nitrogen, phosphoric acid, and potash, are the three most costly constituents of crops, and therefore the most valuable elements of manures. These facts being known, it is easy in a city where all the elements of the best manures abound, to get up a few tons exceedingly rich in phosphoric acid, potash, and ammonia, which, when properly applied to the land, will give very extraordinary results; and when analyzed, they will indicate a compound worth two or three times its weight of the best guano. But such a manure will cost as much per 100 lbs. as the best potash in the market, and afford no profit to the manufacturer. None is expected from this superior article directly, for it is given to distinguished farmers to try, and report the results of its influence on various crops. The operation of the manure being highly beneficial, the most trustworthy certificates of the value of the improved superphosphate of lime are obtained by the score. Now the manufacturer is ready to sell phosphorus, which is worth some \$3 a pound and more than \$200 per 100 lbs.; ammonia, which is worth at least \$10 per 100 lbs.; and potash, which is worth \$5 per 100 lbs., at \$50 a ton! But what evidence does any bag of 160 lbs. of "improved superphosphate of lime" give the purchaser, that it is better than so much ground bones? Ten bags may contain a better manure than the seller promises, while nine hundred and ninety may be nearly worthless, and yield a profit of 200 per cent. to the inventor and manufacturers. Of course, they will have the manure contained in the ten best bags carefully analyzed and published in an hundred papers; and on the credibility of these analyses thousands will purchase any thing that the manufacturers may say is a manure similar to the one carefully examined by the chemist. In this way, chemistry is most success-

fully used to humbug the farming community. It may be asked: What is the proper remedy? We answer, not to abandon the use of city made manures, but to create a public opinion in the country which will constrain all municipal authorities to save fertilizing substances and concentrate them so that they can be put up in cheap bags like guano, and distributed as far as any grain, flour, meat, or cotton is sent to market. In short, the cultivators of the soil must make those that reside in cities and villages feed the land that both feeds and clothes the denizens of cities and villages. Not to do this is a violation of a law of God, and an offence which he will certainly punish.

The subject of artificial manures is one of vast importance; and it is just now in that hazy twilight which enables any one who loves supremely the almighty dollar, to make a fortune in a few years by vending marvellous remedies to rejuvenate the soil. So long as the public supports quack doctors of every hue, Mormons, polygamy, spiritual rappers, the exhibitors of "woolly horses," and whatever else is steeped in falsehood and imposture, we have no right to complain of charlatans who sell twenty tons of their artificial manure a day, at \$50 per ton. True science, which has no secrets, scorns exaggeration, and despises the tricks of trade, stands a poor chance where its counterfeit in everything passes with the million as current coin. All that we can do is to inculcate sound principles alike in agriculture and morals, expose quackery whether in high or low places, and try to leave the world a little wiser than we found it. It is to be deplored that there is nothing so sacred in religion or spiritual truths, nor in the social or moral relations of man to man, but it is prostituted to objects of mercenary gain, and so adulterated with errors and falsehoods, that one can hardly separate the pure from the impure, or what is right from what is wrong. What possible reform will strike at the root of this evil? So long as mankind shall love to be cheated by imposters, the State of New York will turn out the originators of new systems of religion, like that of JOSEPH SMITH—new "spiritual manifestations," like those of the Misses Fox—of new theories of "terra-culture," like that of Mr. Comstock—and of new superphosphates of lime, like that so extravagantly commended by the *Working Farmer*. If these imposters are properly noticed they raise the cry of persecuted saints, and gain sympathy and strength thereby; and if not noticed at all, they carry all before them by the easy perversion of verbal and written evidence, so that the community is taxed to support many of their victims in insane hospitals, and still more as public paupers. If a way could be found out to prevent imposition in general, and in the manufacture of artificial manure in particular, it would do more to advance society in morality, knowledge, and wealth, than any discovery which has been made since the fall of man. Closely and patiently have we studied the hindrances to agricultural progress, and so far as we have been able to discover, falsehood, in its thousand protean shades, is chief among them. Things are not what they seem; and as our relations to each other become more artificial, truth is surrounded by more numerous throngs of vicious counterfeits. A true man will make an open fight against these; but his enemies, operating in secret, will be likely to destroy him. Using money to make money by false pretences, they have the power to command temporary success, and secure the greatest triumph to the greatest imposture. The food of plants must be studied more than it now is, before frauds in artificial manure can be detected, or prevented, by farmers.

We repeat, artificial, or special fertilizers, should not be avoided, but their composition should be carefully investigated, that the intrinsic value of their elements may be generally and thoroughly understood, both in town and country. Nothing is easier than to deodorize, and evaporate to perfect dryness, every thing that is valuable for agricultural purposes in cities; and if this were done, it would render them far more healthy, and, at the same time, furnish the most concentrated food of plants in vast quantities and at a mere nominal price. Cities reeking with human excrements and foul sewers, never fail to be afflicted with pestilence in its most malignant forms; and yet there is not one

in the civilized world in which wise sanitary regulations are adopted and enforced. To some this will appear as a hasty and ill-considered assertion; but it is made after taking much pains to study the sanitary systems of the cities in China, Continental Europe, and Great Britain, as well as in our own country and South America. It would fill a volume to give a satisfactory review of this interesting subject. In our humble opinion, neither the public health of cities, nor the paramount interests of agriculture and horticulture, should be left to the fitful cupidity of soulless companies or of private citizens, for the manufacture of artificial manure; but the whole matter should be properly governed by legislative authority, in order to escape the dreadful penalties of neglect, and prevent the temptations to commit fraud, and profit by misrepresentations. Exaggeration in everything is crushing the life out of all truth in society. Fashion is every where planting the prolific seeds of falsehood, which Habit will water in coming years with many a bitter tear.

AGRICULTURAL JOURNALISM.

THERE are some forty or fifty agricultural journals in the United States, a large majority of which are conducted with equal fairness and ability. A few, however, are controlled by mercenary and unscrupulous men, who, conscious of their own want of integrity, are prone to regard all others as dishonest and intensely selfish as themselves. They look upon the masses as born to be duped and cheated by the false pretences of the cunning and the gifted; and, therefore, they study duplicity and craft as the surest means of success; and finally, they have for their trade what is known out of New England, as "Yankee smartness." It is always unpleasant to come in collision with such men, for they assert falsehoods with an air of confidence and sincerity, that one who does not know from other sources of information that *the truth is not in them*, is easily deceived, and regards them as entitled to all confidence. Such characters are the more to be avoided when it is possible, because they wield an educated command of the vocabulary of blackguards, and rely mainly on offensive epithets in conducting an editorial controversy, as they lack every virtue that goes to form the gentleman.

Little Rhode Island has recently turned out a specimen of humanity in the person of one WILLIAM S. KING, editor of the *Boston Journal of Agriculture*, who answers to the description we have given. We shall not bandy epithets with him, but, as in the case of THOMAS EWBANK, prove beyond all controversy, in due time, that said KING has uttered and published false and calumnious accusations against the proprietor of this paper, in order to obtain the Agricultural Clerkship of the Patent Office. Whether he is likely to succeed, or has succeeded, we are not informed, not having been in Washington for some six weeks.

We did not seek the task of collecting information and preparing for the press the last four annual reports on American Agriculture, of which Congress has printed, and ordered to be printed, five hundred and forty thousand volumes. Having a large job printing and newspaper establishment that required our personal attention, to say nothing of the two agricultural journals with which we were connected, our willingness to serve the farming interest at the federal metropolis involved, at that time, a pecuniary sacrifice; and we are now happy to return, after an absence of nearly six years, to our own Western New York, to labor while life shall last for the advancement of Agriculture and Industrial Education. It is not our present purpose to give to the public at any length, the views we cherish in reference to industrial education and agricultural journalism, in a republic where more than a moiety of the voters are farmers. To persuade farmers to unite in forming State, county, and township societies, and make all

these auxiliary to a national organization for *educational purposes*, is, in brief, The Plan marked out by us many years ago for calling into existence tens of thousands of agricultural libraries and schools, superior in every respect to the common schools and libraries of New York, which may flourish in every county in the United States. False friends may retard this great work of educational improvement, which is designed to embrace all industrial classes; but in the end, it is sure to triumph in every quarter of the Union. When the people say they want a scientific education, then agricultural journalism will take the highest rank among the learned professions; and that the people will, ultimately, so decide, is with us a matter of the most undoubting faith. No second number of the Quarterly Journal of the United States Agricultural Society has been published, after the lapse of ten months since the first was issued—not from a lack of funds, but the want of that *faith* which is the parent of all new and important enterprises. Works soon die where faith is not; and where they do not die immediately, they become valueless. To create a popular taste for rural literature and sciences, we must study to improve our agricultural journals, and foster the establishment of numerous agricultural libraries.

In this way the lights of the age will penetrate every log-cabin in the land, and add four-fold to the knowledge, wealth, and happiness of the American people. For less than fifty cents, including postage, ninety-nine hundredths of our subscribers receive twelve numbers of the *Genesee Farmer* in a year; the last eight volumes bound, form an addition to any library worth many times more than the cost of the work. Probably not one-third of the adult owners of the soil read any agricultural journal whatever.

A general effort should be made to place a copy of some good agricultural paper in the hands of every farmer and gardener in the country. By so doing, public opinion will soon create industrial libraries and seminaries of learning, where science and physical labor will meet each other as friends and co-workers for the elevation of mankind. Starting from the point that an *art* is always something to be *done*, and a *science* something to be *known*, the masses may constantly rise in knowledge and arts, in virtue and happiness, by cultivating the inherent powers which God has given them.

THE FARM AS A MANUFACTORY.

NUMBER THREE.

In the two former articles on this subject we stated that all soils capable of profitable cultivation contained every one of the fourteen elements which compose all our agricultural plants. The difference between a new fertile soil and a badly cultivated impoverished one is not attributable to the existence in the one, and to the absence in the other, of any particular ingredient, but to the *different proportions* in which the constituents of plants exist in the two soils, and, more especially, to their state of combination, and their *availability* as food for plants. Thus, sandy soils do not contain so large a proportion of the constituents of plants as do clay soils; yet, when first cultivated, the former invariably yield larger crops than the latter, because the clay soil is more compact, and the food of plants does not exist in that available condition as it is found in porous, sandy soils. The average production of the farm depends, not on the quantity of food lying latent in the soil, but on the amount of available food of plants and animals kept *in circulation* on the farm.

We also considered the effect of cultivation on the gaseous and organic matter of the soil, arguing from the fact demonstrated by Mr. LAWES' experiments, that wheat, and

probably maize and all other cereals, destroyed large quantities of ammonia during their growth; that on soils where cereals were principally cultivated, ammonia, of all the elements of plants, would be first deficient. Another fact mentioned was, that while wheat and barley destroyed ammonia, and consequently required great quantities for the production of large crops, clover, peas, beans, tares, and turnips, did not destroy ammonia, but on the contrary retained that brought to them, during the growing season, by rain water.

Bearing these two most important facts in mind, we will proceed to examine the effects of cultivation on the inorganic or mineral matter of the soil.

All our works on agricultural chemistry abound in tables showing the amount of the various elements removed from the soil in a crop of wheat, maize, barley, oats, clover, potatoes, &c., so that there is no necessity for repeating them here, although we have at command many original analyses of all the principle crops of a rotation with the exception of maize. It is not the effect on the soil of the entire removal of the whole crops of a rotation that we are required to study, for no intelligent agriculturist, and we are writing for none other, would for a moment think of removing all his produce from a farm; so that such tables, if accurate, which many of them are far from being, are of but little direct benefit. To derive much practical information from agricultural chemistry, we must study the changes of matter as it passes from the earth and air into plants, and from these into plants and animals capable of supplying food for man, and otherwise administering to his use and comfort; we must trace the atoms as they are again returned in their original state to the earth and air, to begin anew the endless round of the mineral, vegetable, and animal kingdoms; we must examine, not only what a crop contains, but also what portion of it is necessarily removed from the farm, and what returned to the soil.

In the Natural History of New York, part V., it is stated that a crop of wheat in Western New York of thirty bushels per acre, including straw, chaff, &c., removes from the soil 144 lbs. of mineral matter. According to the same authority, a ton of dry clover hay removes 198 lbs. of mineral matter. Any deductions from such data showing the exhaustive nature of cultivation on the mineral matter of the soil, are wholly inapplicable to agriculture as practiced by intelligent farmers.

We are under great obligations to JOHN BRADFIELD, Esq., for a statement of the flour, bran, &c., obtained from Genesee wheat ground at the Clinton Mills in this city during the last nine years. The total number of bushels ground was 726,551; the total number of barrels of flour obtained was 173,893. Having reduced the results of each year to a percentage, and finding a remarkable uniformity in the respective years, and considering the great quantity of wheat ground, we believe the mean results afford the most reliable data yet published on the subject.

Taking the mean results of nine years, 100 lbs. of Genesee wheat yielded 75.50 of superfine flour, 3.47 of fine flour, 5.09 of fine middlings, 4.37 of shorts, and 0.69 of bran Total 97.37—showing a loss in grinding of 2.63 lbs., doubtless water. Judging from upwards of one hundred analyses made in the Rothamsted laboratory, the superfine and fine flour mixed would contain 0.70 per cent. of ash; fine middlings, 4 per cent.; coarse middlings, 5.50; shorts, 8; bran, 8.50.

From these data it is evident that of the 144 lbs. of mineral matter in a crop of wheat of 30 bu. per acre, somewhat less than 10 lbs. only is contained in the superfine flour; the remaining 134 lbs. is found in the straw, chaff, bran, shorts, &c. The 30 bu. of wheat, even if none of the bran or shorts were returned to the farm, remove but 26 lbs. of mineral matter; but many farmers purchase from the millers large quantities of bran and shorts for feeding purposes, the mineral matter of which would be retained on the farm. It is impossible to estimate satisfactorily, but we believe that on many farms near Rochester not more than half a pound of inorganic matter is removed from the soil,

never to return, in each bushel of wheat. In this way, 288 bu., or nearly ten good crops of wheat, do not impoverish the soil of more mineral matter than is contained in one crop of 30 bu. to the acre.

Again, a crop of clover that will make a ton of *dry* hay, contains, we have shown, 198 lbs. of inorganic matter. If the hay is sold off the farm, this large quantity of ash is lost to the soil; if it is plowed in for wheat, &c., none of it is lost. If consumed by animals on the farm, not more than 5 lbs. of mineral matter need be lost to the farm. A lean sheep was found to contain $3\frac{1}{2}$ per cent. of ash, and as it takes somewhere approximating a ton of clover hay to produce 100 lbs. increase of animal, we may safely conclude that not more than 5 lbs. of mineral matter is removed from a ton of clover hay by passing through the body of an animal. In this way we can grow and consume forty crops of clover and not export from the farm more inorganic matter than is contained in one crop. The same reasoning applies to maize, barley, oats, timothy, potatoes, and in fact to all farm products.

Is it not evident from these facts, that while it is easy to impoverish (not exhaust) the soil of the inorganic constituents of plants, yet on a farm, as managed by intelligent agriculturists, the removal of inorganic matter is very small and in no way proportionate to the great destruction of organic matter by the growth of cereals?—J. H.

MILK, BUTTER, AND CHEESE.

MILK consists of sugar, casein (curd), salts, globules of fat (butter), and water. It often, in addition, contains some aromatic principle, derived from the food of the cow. After milk is drawn from the cow, the vital affinity which kept the carbon, oxygen, and hydrogen so combined as to form sugar, ceases, and the sugar is gradually converted into another compound of the elements named, lactic acid. In popular language, this change is called the souring of milk.

The fat or butter is in globules mixed with the water of the milk. These globules, when the milk is at rest, gradually ascend to the surface, taking with them a little casein, sugar, and water, or lactic acid in place of sugar, if the milk is sour. This compound may be skimmed from the surface, and is called cream. If this cream be heated, the globules of fat burst and unite together. Being lighter than the other constituents of cream, they ascend to the surface, forming an oily fluid. This may be taken off, and if put into a cool place, it solidifies, and is in fact pure butter. Butter so obtained will keep a long time without becoming rancid, but it has not the taste of common churned butter, and is not used as an article of diet. To obtain butter for food, the heat required to burst the globules of fat, is generated by agitating the cream or milk in churning. To have the particles of fat coalesce as solid butter, the cream must be neither too cold nor too hot. Churning raises the temperature from four to ten degrees, according to the degree of agitation and friction to which the cream is subjected. From 60 to 65 degrees is the proper range for milk and cream about to be churned. Butter so obtained contains a little sugar and casein (curd), and any aromatic principle the cream may possess; and it is better suited to our taste than pure butter obtained by the direct application of heat.

Butter made in this way will not keep fresh long. Its sugar is converted into lactic acid; and after this change has taken place, the butter is said to be rancid. If an excess of sugar be artificially added, then this change does not take place. Pure common salt and saltpetre have also the power of retarding rancidity. Many dairymen keep butter after the casein is all worked out, by adding a mixture of pure salt, sugar,

and saltpetre. Well packed in air tight casks or crocks, butter thus put up may be kept any length of time without change.

Casein or cheese may be obtained in a tolerably pure state by adding any acid to new milk, skim-milk, or butter-milk. When this is done, the casein or curd falls to the bottom. The most remarkable property of casein is, that it is soluble in a weak solution of soda or potash; that is to say, it forms a compound with these alkalies which is soluble in water. Without the presence of a little free soda in new milk, its cheese could only exist in the form of a precipitated curd; and so soon as lactic acid sufficient to neutralize this soda is formed by the decomposition of the sugar of milk, casein begins to fall to the bottom of the vessel. By adding a little more soda to milk than nature furnishes (and this amount depends somewhat on the regular salting of cows), the souring of milk may be retarded for days without injury to the quality or flavor of the milk. Recent analyses of milk in France have shown that it contains *albumen* as well as casein. The coagulating substance in the rennet or stomach of a calf is muriatic acid; although the animal tissue in the process of incipient decomposition may, and doubtless does, aid in precipitating curd in cheese-making. Good cheese requires that all the butter or fat in the milk be retained in the curd, so far as practicable. Too great pressure is to be avoided in the manufacture of cheese.

CLASSIFICATION OF ANIMALS.

ANXIOUS to render our periodical more instructive and interesting than it has ever heretofore been, we are about to bestow much additional editorial labor upon it, in condensing for its pages valuable information drawn from natural history and other available sources. As the capital invested in live stock in the United States exceeds that employed in all our manufactures, to which government has paid so much attention, we offer a few remarks on the Classification of Animals, which deserve to be studied, both anatomically and physiologically, far more than they now are.

All living beings admit of being arranged into the two kingdoms of animals and vegetables. Each of these can be again arranged into natural divisions; each of these divisions may be again divided into natural classes; each of these classes into natural orders; each of these orders into genera (which is the plural for genus); and each genus has its species and varieties. An example will make this system plain: One division of the animal kingdom is called the Vertebrate, because the animals comprising it are possessed of a *back bone*. (Vertebra is the Latin for back bone.) One of the classes of this division is called the Mammal, because the animals composing it are distinguished from all the rest of the vertebrate animals by suckling their young by mammae, or breasts and teats. One of the orders of the mammals is called Ruminant, because the animals composing it, and they alone, chew the cud or *ruminates*. One of the genera of the ruminants is called *Ovis* (sheep), and is distinguished by the horns (when present), being unlike those of deer, persistent (not shed each year), and turned laterally and spirally. Then the *Ovis arics*, or common sheep, is a species of this genus, characterized by having more wool than hair, as the Merino and Cheviot.

The animal kingdom contains four well-marked natural divisions. The lowest of these is called the Radiata. The animals comprising this division are distinguished from all others by all their members being disposed round an axis in two or more ways. They have no back bone, and no internal skeleton. The lowest class of the radiata is the Poriphera, or Sponge tribe, of which the common sponge is an example. The sponge of the shops consists of a net-work of elastic fibres, which, when the sponge is alive, is filled with a gelatinous mass, so soft that it drains away from the sponge when

it is removed from the water. This mass is permeated by a number of canals, though which the sponge possesses the power of making the water continually pass, with the purpose, doubtless, of extracting nourishment from it. Sponges have never been known to exhibit either sensation or the power of voluntary motion; and hence many naturalists arrange them among vegetables. But the little germs that produce sponge, move about before fixing themselves to a rock; sponges are from analogies of structure usually considered now to be of an animal nature, although the usual manifestations of animal existence are not obvious to our senses.

CORN CULTURE.

An esteemed correspondent, "S. Y.," of Essex county, N. Y., objects to making large, high hills in hoeing corn, for various reasons: 1. Because such hills shed rain, and suffer more from drought than flat ones, or none at all. 2. Corn gives out more suckers when hilled up, which is considered a damage to the crop. 3. It keeps the corn more backward; it does not ripen so early, as it gives out a new set of brace roots every time it is hoed. 4. It costs three times the labor to cultivate the crop with the excessive use of the hoe that it does to rely mainly on the cultivator and plow.

We beg to assure our eastern friend that corn growers in Western New York and the Great West, produce millions of bushels of this important staple without ever taking a hoe into the field at all, except to plant, and often not for that.

His suggestions about not planting corn too thick, particularly where one desires to raise pumpkins or beans between the rows, are judicious; as is also the caution not to cut the roots of corn plants with the hoe in cutting up weeds about the hill. He plants on greensward turned over just before planting; and instead of spreading manure before plowing, it is applied afterwards, and harrowed in before the ground is planted. In a postscript he says:

"I always make use of a preparation [for soaking seed] that I found in the *Genesee Farmer* in 1846, May number, page 107. It came to hand just in time. I had a piece of ground that I intended to plant to corn, and it was full of *wire worms*; I used the preparation with beneficial results, and I do not know that I lost a hill of corn that year by the worm. I have made use of it every year ever since with great benefit to the crop—*enough to pay me for the Genesee Farmer fifty years at its present price.*"

As many of our subscribers may not have the volume of 1846, we again place on record the "preparation" alluded to. It consists in dissolving two pounds of copperas in sufficient soft or rain water to cover a bushel of seed corn, in which it is allowed to stand twelve or fifteen hours. To a peck of this soaked corn, there is added a pint or more of soft soap, and the two are thoroughly stirred with a stick till every seed is coated with the soap. The corn is then dried sufficiently for planting by adding ground plaster, and again stirring it.

Mr. LANSING WETMORE appears to have first recommended the above preparation in the *Farmers' Library*, and found it to increase his crop 33 per cent., besides keeping off insects and birds. His experiment appears to have been carefully made, and resulted in giving him a gain of 200 bushels of ears for copperas, soap, and plaster, worth not to exceed sixty-three cents.

HORNLESS CATTLE.—In our last issue we expressed the opinion that probably hornless cattle were not over two or two and a half centuries old as a distinct race. This opinion was based on an authority, of the correctness of which we had some misgivings at the time the article was written, and on further research, we now believe to be erroneous. Being still anxious to trace the early history of all our domesticated stock of the *Bos*

family, we shall be obliged to any of our readers who can put us on the track to find any evidence to prove that the Galloway, Angus, and other hornless breeds, are descended from a race that had horns; or that any fossil hornless cattle have ever been found in Great Britain, Ireland, or Eastern Europe. Sheep are known to lose and acquire horns without any very long intervention of time. Domesticated swine without any thing more than the rudiments of tusks, acquire them of formidable length when they run wild a few years in the forests. An increase and decrease of length and weight of horns are no uncommon occurrences. The cattle of Sicily carry more weight of horns, according to that of the whole carcass, than any other that we have seen; and the small cattle of the pine woods in the Southern States come next to them. When we said that fine specimens of Galloway cattle might be seen in "Augusta, Charleston, and Washington," the word Charleston was by mistake printed "Charlestown," which being a town in Massachusetts, might mislead the reader. We never saw any Galloway cattle either in New York or New England, although they may be kept. Native hornless cattle are not uncommon in the Northern States, but, as the *Boston Cultivator* truly remarks, they are not Galloways.

BEWARE OF CUTTING WHEAT PREMATURELY.—One of the largest wheat growers in the State of Delaware, who uses between fifty and sixty tons of guano a year, informs us that he lost nearly three thousand dollars by cutting his wheat prematurely, and thereby causing it to shrink badly, at the harvest of 1852. He was induced to deviate from his usual practice by reading an extended article on harvesting wheat written by Mr. EDMUND RUFFIN, of Virginia, who is generally regarded as high authority, being himself a pretty large wheat grower. Nothing is easier than to misjudge as to the precise time when this important crop ought to be harvested. It has frequently been asserted that so soon as the milk disappears, and the seed is in a "doughy state," the grain should be cut. This, we believe, is a little too early; as it is a little too late after the seed is hard and dead ripe.

* The farmer is seldom able to cut down his entire crop at the exact time when it will yield the most weight of grain and flour; and hence, as Mr. RUFFIN suggests, it is often deemed better to harvest a little too early than a great deal too late. By the use of wheat-reapers propelled by horse power, farmers are able to cut large fields of wheat at, or very near the proper time. The drying of the straw immediately below the head, by which the ascent of sap is arrested, is one of the most reliable indications of the maturity of the plant, and of the necessity of cutting and curing it. Many wheat growers, particularly in the tobacco and cotton growing States, permit their wheat to stand too long in the shock, or in small stacks, before it is either threshed or properly housed. Birds, vermin, and other animals destroy much of it; and sometimes protracted rains cause the grain to sprout, and the crop is half wasted from sheer carelessness.

CHEESE IMPORTED INTO GREAT BRITAIN IN 1852.—A return from the the office of the Inspector General of imports and exports, obtained by Sir P. EGERTON, contains an account of the quantity of Cheese imported into the several ports of Great Britain in the course of the year ending January 5th, 1853. The return shows the following figures:—"Imported from the European States, 278,179 cwt.; from the United States, 11,275 cwt.; from the British colonies, 2 cwt.—making a total of 289,457 cwt. The quantities of foreign European cheese exported from the United Kingdom during the same period, amount to 5,694 cwt." By these figures it will be seen that the Continent furnishes Great Britain about twenty-six times more cheese than the United States. These facts are important, showing as they do that that market needs vastly more of this dairy product than we are able to supply. We might increase our export five-fold, and then sell to England less than a fourth of the foreign cheese which is now consumed there.

FRENCH MERINO SHEEP.—The sheep represented in the accompanying engraving were selected in France for me by JOHN A. TANTOR, Esq., of Hartford, Conn. They are pure blood Merinos, and were bred by Messrs. GILBERT and CUNOR, who undoubtedly have, for size, constitution, and weight of fleece, the best flocks in France. I obtained my first imported French sheep in 1848, and have increased my flock by importations from that country every year since. They are unusually large for fine wool sheep, the ewes, when of full age and in good condition, weighing from 120 lbs. to over 200 lbs. each, and some of the bucks over 300 lbs. each, though these would be unusually large even for this class of sheep. Their wool is of good quality, though not equal to Saxon for fineness; but it is as fine as the Spanish Merino will average. They are not all alike, however, for there is with them, as with all other fine wool sheep, a great difference in the quality as well as in the evenness of their fleeces. Their wool is *very* thick and compact, more so than I ever saw it on any other breed of sheep, covering their entire bodies—is thick and long on their bellies and legs and their heads and faces are sometimes so completely covered with wool as to blind them, and unless sheared away it frequently injures their sight. My imported ewes have sheared over 15 lbs. each on the average, of one year's growth in a perfectly natural condition, or unwashed; and some of my bucks have sheared more than those represented in the engraving at one year's growth.

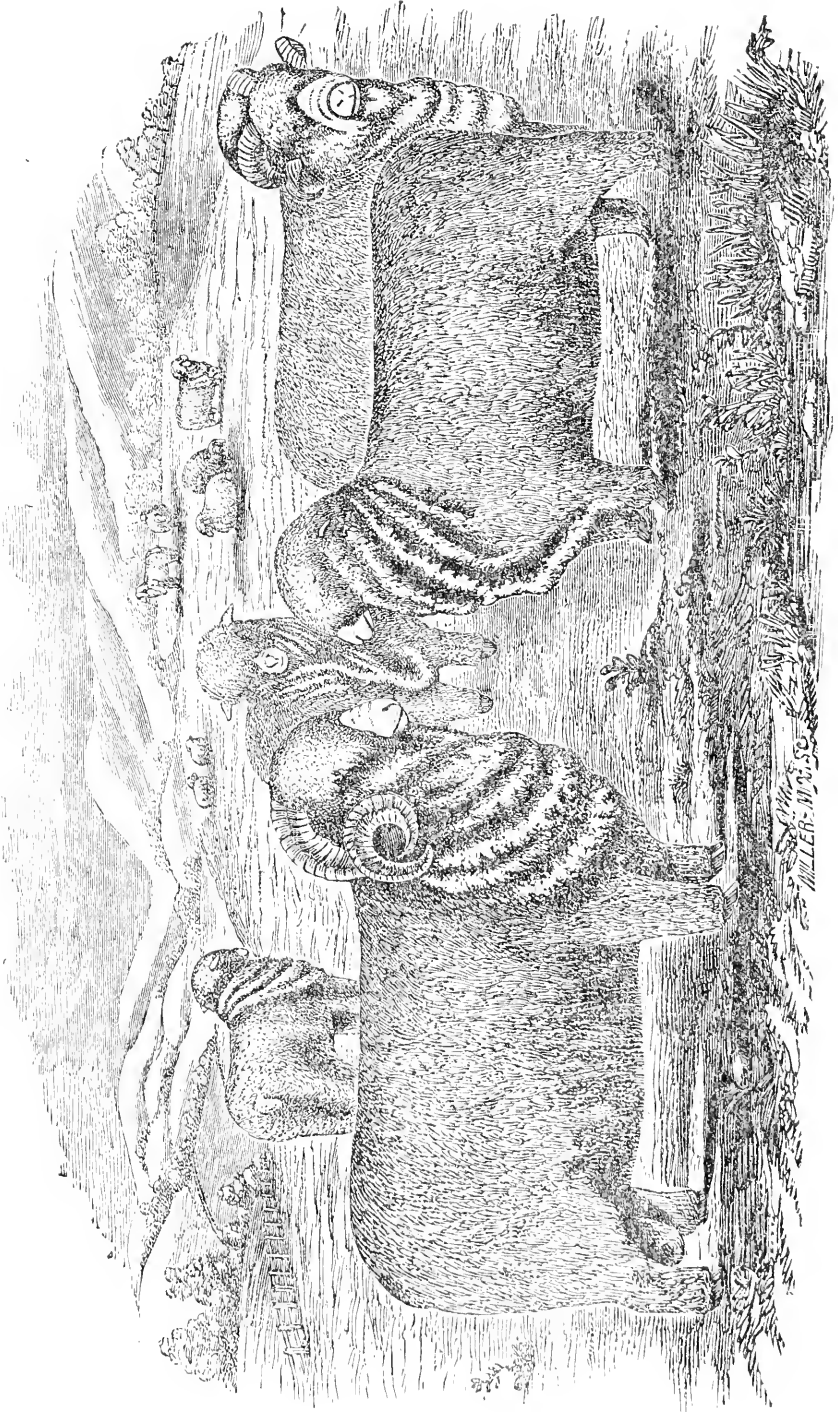
But on the weight of fleece, than does depend on the care and condition of the sheep. I never knew a very heavy fleece sheared from a sheep in a very poor and thin condition. As it regards my own flock, it has always been my aim to take as good care of them as I knew how. I do not mean by this that they have been highly fed with grain, for too much of that would prove an injury rather than a benefit; but I have at all times given them an abundance of good nutritious food—have seen that they had access to pure water, particularly in winter—that they had salt by them at all times—that they were kept clean and well littered in winter, and provided with good comfortable sheds, well ventilated, to protect them from the storms. These, and many other little cares, are indispensable to their health and growth. For nine years past I have kept from 250 to over 1000 sheep, and my losses from sheep dying during the winter have not been, on an average, one per cent. This is certainly strong evidence that the sheep possess hardy, robust constitutions, but with that they have had good care, which should also be taken into account.

I have sometimes washed my French sheep, but do not generally do so, as they have cost me very high prices and the washing is attended with some risk. Sheep will never go into water unless compelled to do so, and these being large and strong they would struggle violently, and dragging them into the water to wash might prove injurious; besides there is not sufficient advantage in it to pay for the risk, as the wool will net me about as much in one condition as it will in the other, for what is lost in price is gained in quantity. It is in as good demand, and will sell as readily unwashed, by discounting one-third of the weight to make it equal to common brook washing. This is all that has ever been required of me when I have offered mine for sale, and it will probably shrink in about that proportion, though some fleeces would undoubtedly cleanse away more, and others less, than that. As a whole, the wool of the French sheep is more inclined to be dry, and they have less oily and gummy matter in their fleeces, than the Spanish Merinos.

The French sheep are remarkably prolific. A good proportion of the ewes have twins, and as they are excellent nurses, there is no difficulty in raising their lambs. I have never failed of raising more lambs than I have had ewes, and it is not uncommon to raise fifty per cent. more.

Some contend that the French Merino sheep are of a "hot house growth"—that they have attained their present large size by a system of high feeding—that they are not hardy, and when put on ordinary keeping would pine away and become a degenerate race; but this has not been my experience with them. That the French Merinos have been brought to their present high state of perfection without generous keeping and a judicious and thorough system of breeding, is not to be supposed. What treatment has produced the Durham, the Hereford, and the Devon cattle?—the Clyde, the Norman, and the various other improved breeds of horses?—the Leicester, the Bakewell, and the South Down sheep?—the Byfield, the Essex, and the Suffolk swine? Has it not been accomplished by good and skillful breeding?

My principal flock was originally pure Spanish Merinos, and I still keep some of the Spanish pure, but the most of my present flock are crosses of Spanish and French Merino, being half and three-fourths French blood, and I find the larger the infusion of French blood, the larger the sheep and the greater the increase in the weight of fleece. I formerly kept the different varieties of sheep, the Merinos, the Saxons, the South Downs, the Cotswolds, &c., more, however, for the purpose of experi-



IMPORTED FROM FRANCE. OWNED BY JOHN D. PATTERSON, OF WESTFIELD, CHAUTAUQUE CO., N. Y.
 MILLER, N. Y.

menting than otherwise. The different kinds were kept and fed together, and in all respects fared alike. Some of them were kept pure; others were crossed. The different varieties are all good for certain purposes—some for mutton, others for wool. The French Merinos, however, from their large size, their great adaptiveness to acquire flesh, together with the large fleeces they produce, seem to possess and combine to a remarkable degree both qualities—the wool growing with the mutton sheep.

It is the opinion of some that it requires an equal amount of food to produce a pound of flesh and wool, without regard to the size or the breed of the sheep—that they require and consume food in proportion to their live weight. These conclusions I think are erroneous; in fact, I know they are not correct when applied to my own flock. That a certain number of French sheep require and consume more food than the same number of sheep of a much less size there is no doubt, but they also produce more flesh and wool, in proportion to the quantity of food they consume, than any other sheep I ever kept. When turned out to pasture, they are not disposed to wander or ramble about like most other kinds, but are much more quiet and gentle, and for the amount of food they consume, they accumulate flesh and fat faster than any other sheep I ever knew, and I have never seen that breed of sheep that will produce as much value, or as many fibres of wool to the square inch of surface, as the French Merinos.

My original flock of Spanish Merinos was good, it having been selected from the best flocks in our country without regard to price, and for this reason I was exceedingly cautious what I crossed with, so much so that after I obtained my first imported French buck I used him only to a limited extent. With my first lambs from him I was highly pleased, and when they were sheared their fleeces far exceeded my expectations. Since then I have had no hesitation about using French bucks, and have scarcely used any others, for I find the more of that blood there is in my flock the better the sheep suit me, and the more profitable they are for wool growing purposes.

It is to be regretted that there is, in some instances, a spirit of animosity springing up between the breeders of the Spanish and the breeders of the French Merinos. This should not be so. Both kinds of sheep are good, and there is room for all. None but the most friendly feeling should exist between us. If we who are breeding the different classes of sheep, or other animals, do not exactly agree in all our views, that is no reason why we should not feel friendly towards each other, and not only friendly, but we should be the best of friends. That we should all think alike in this, any more than in other things, is not to be expected: and it is well we do not, for if all of us preferred Durham cattle, there would be no Devons; and if we all preferred the Merino or Saxon sheep, there would be no Leicester or South Downs; and so it would be with the other different breeds of animals. But let us take a liberal, high minded, and honorable course, not only with ourselves but with others. Let each take his favorite race of animals and make an effort, by a close and careful system of breeding, to improve them, for there is room for improvement, and we should strive by all honorable means to excel each other in obtaining and diffusing the best varieties of breeding stock. There is no danger of our best improved breeds of animals becoming too numerous. If they are really superior, they will all be wanted and will all be useful. Competition in an honorable and friendly way can do no harm and may do good, as it is said "competition is the life of business." It will at any rate serve to stimulate us and increase our efforts to excel each other in producing the best of its kind. If those of us who are breeding sheep do not in all respects coincide in our views, it will probably be admitted that we are all aiming at one and the same object, and that is to obtain the *most profitable* breed of sheep. After a thorough trial, and from careful experiment, it is my opinion the French Merinos are the most profitable to keep for all purposes. Of this I have no doubt, though it is not my wish to dictate for others, as they can have the same opportunities for judging that I have had, and can decide for themselves. However, I am always open to conviction, and if there are any better sheep than the best French Merinos, I would like to see them, and when convinced of that fact, shall endeavor to purchase some of them, if possible, as I always go for the best breeding stock that can be obtained. JOHN D. PATTERSON.—*Westfield, Chaut. Co., N. Y.*

TO PREVENT RABBITS OR MICE FROM BARKING FRUIT TREES.—Make a tolerably thick quick lime white-wash, with plenty of salt or brine in it, and apply, plentifully, after the leaves have fallen or the ground has frozen. I have found that whenever, or wherever, I have made the application, where the rabbits are bad, my trees invariably escaped, when those only a few feet from them would be eaten. J. M. W.—*Barclay Ill.*

Horticultural Department.

CONDUCTED BY P. BARRY.

RAISING FRUITS FROM SEED.

We know of no subject on which we can more profitably offer a few observations at this time of the year than that of raising fruit from seed. We are every year ransacking foreign countries for new varieties; we are not satisfied with what we have, and we never shall be. It is in the nature of man to seek for novelties; and it is well, on the whole, that it is so. We shall not say a word against this, but we wish to commend to people's attention the abundant means which nature has placed within our reach to produce new varieties here, at home, on our own soil.

Shall we neglect these? We hope not. There seems, fortunately, at the present time, a disposition in the public mind favorable to the improvement of home resources in a gardening sense, and the raising of seedling fruit is certainly one of the most important. Just enough has been already done to show what we may do, and afford us encouragement to proceed. Dr. KIRTLAND'S cherries, Dr. BRINKLE'S raspberries, and many varieties of strawberries, all of much merit, are recent additions to our lists of fruits, raised from seed in the simplest manner, without any regard to the niceties of hybridization; so we can count up fifteen or twenty first rate American seedling pears, and every locality can boast of its favorite and peculiar seedling apples, some of which, and indeed many of which have a national reputation, all grown from chance seedlings.

Now, in fruit growing it is of the highest importance that every man cultivate such varieties as are best adapted to his soil and climate. One of the great problems which pomologists now-a-days are endeavoring to solve relates to this very point. As botanists have divided the surface of the earth into zones of vegetation, each of which is characterized by a peculiar flora, by the prevalence of certain trees, and shrubs, and plants that flourish there, and there only; so in fruit culture it is believed necessary to map off this great country of ours, embracing such a variety of climate, into pomological zones, in each of which certain fruits will succeed better than elsewhere. On this pomological chart, which our American Pomological Society, if it live and thrive, will one day appoint a commission to draw up, we shall see clearly defined the exact limits of successful cultivation of our *Bartletts*, *Seckles*, and *Virgalieus*, our *Newton Pippins*, *Baldwins*, and *Spys*; and this will certainly be a most interesting and valuable map; but it may be a long time yet before it be completed, or before we shall have collected the great mass of facts and statistics which the execution of the work will demand.

Meantime, we must urge upon fruit growers, both professional and amateur, every man or woman, every boy or girl, who can obtain seeds of fine fruits, to plant them and rear them into bearing trees. We think it scarcely admits of a doubt but that this is the true way—we had almost said the *only* way to obtain varieties completely adapted to all local circumstances; we can read this plainly in the history of nearly all our native fruits. As a general thing, their culture is most successful in the region of their origin. Some, like certain genera of plants, are confined to narrow limits, beyond which they do not appear to prosper; others admit of a greater diffusion, and adapt themselves to a greater variety of circumstances.

We find the most forcible illustration of this in the case of northern and southern fruits. The *Fameuse*, *Pomme grise*, and some other apples of the north, are best in the coldest latitudes, and fail as they go south, until they become worthless before they

reach the Mississippi. So with southern fruits; like the *Rawles' Janet*, *Tewkesbury Winter Blush*, &c., that succeed only where the seasons are very long, and are entirely worthless in the north, where the spring opens about the first of May, and autumnal frosts come as early as the first of October. We believe the *Porter* and *Baldwin* are no where so good as in Massachusetts; the *Newtown Pippin* is best on Long Island and the Hudson; the *Spitzenburgh* in New York, &c.

Aside from the unquestionable facts of the case, it is clearly natural that this should be so. A variety springing up from seed in any given locality, is, in the course of its production, endowed with a constitutional vigor and habits adapted to that locality in a particular manner—just as men are more at home in the climate and mode of life of their native country than in any other, and are, in a measure, proof against local diseases that strangers would immediately fall victims to. This is all in strict conformity to the wise harmonious laws that regulate and govern all Nature, animate and inanimate.

Now, we are an impatient people—a “fast” people, to use a current term—and we are quite loth to embark in any thing that does not promise immediate results. Our young men now-a-days greatly prefer hazarding their lives for the chance of securing a lump of California gold to working a fortune patiently but surely out of their paternal acres. To such people, raising new and fine fruits from seed, where, perhaps, not more than one in ten thousand may be a prize, is a slow business, and any thing we may say will probably fail to convince them that it is not quite so slow as they imagine. But we shall try, nevertheless.

Suppose, for instance, we wish to produce some seedling strawberries; we take the finest berries of the best kinds we can procure; they must be perfectly ripe; we either wash the seeds out of the pulp, or we crush the berries and spread out pulp, seeds, and all to dry. We then sow either the clean seeds, or dried pulp and seed, in light earth, and by autumn we have nice plants. These we protect during winter with a covering of leaves, and next spring we plant out into beds; the following season they will bear, and we will be able to see whether we have gained a prize or not. Raspberries, currents, and gooseberries, are managed exactly in the same way, and will fruit in the same time. This is not a tedious process. Three years or four enables us to arrive at some results with these small fruits, and very important fruits they are. Now it would take as long as this to raise a colt fit for market, and a first rate new strawberry, currant, or raspberry, is worth two or three good colts at least, and it might be half a dozen.

Peaches are easily raised from seed, and come quickly into bearing. Every one knows how to raise peaches from seed. The fresh pits may be transferred at once from the pulp to the ground; and in three or four years it will yield fruit. Pears and apples are more tedious; but there is a way to manage these to obtain early results. Suppose, now, in 1853 we collect seeds of the finest apples and pears; as we take them from the fruits we place them in sand or earth until we have done collecting; we then plant them in fine, well prepared earth. Next spring they will grow, and in the autumn of 1854 we shall have yearling plants. While yet in leaf we select the most promising subjects—such as show in their features the greatest degree of refinement; then, instead of waiting for these to bear, which would not happen for ten years, perhaps, we graft or bud from them into bearing trees—dwarfs, if we have them—and in two years or so we will fruit them. Plums and cherries are managed in the same way.

Now we think that no reasonable person who has patience enough to wait for the ordinary seed time and harvest, could call this a *very* tedious process. Aside from the advantages which it offers, the raising of seedling fruits is full of instruction and intensely interesting, as every one can testify who has given it a trial. We shall have more to say on this subject hereafter.

THE PEACH WORM.—During a few years past, it appears that most peach trees about here, as well as other places, have nearly or quite died in consequence of worms making inroads between the bark and wood of the trees, near the surface of the ground, thus nearly "girdling" the tree, and causing gum to be seen. This destruction of peach trees may easily be prevented by timely removing the earth from the tree to the depth of three or four inches, and with some sharp and pointed instrument trace the lethal paths made by the worms and *kill* them. Do this as soon as the buds begin to grow, leaving the earth away a few weeks, and then replacing it. If during summer or autumn worms resume their ravages, repeat the process, and you may raise plenty of luscious peaches to eat with milk and bread, one of the most delicious and healthy suppers that ever a tired Yankee stone fence builder enjoyed. Various other ways have been tried to destroy the worms, but the above is the best I have tried. The largest peaches I ever saw, grew on trees I planted and treated as above mentioned, while my neighbors trees mostly died from the effects of worms. A person can thus "worm" from fifty to a hundred trees in a day. A few days thus spent during each year would enable farmers to raise plenty of peaches for their own use, and a few loads to sell—provided they are not killed by freezing. Fruit trees not growing on land descending northward in this latitude and changable climate, are more liable to be injured by freezing than are trees near the ocean.

Should a reader of the *Genesee Farmer* know of a better plan to preserve peach trees from worms, I would like to know it. MERCHANT KELLY.—*Bentouville, Ind.*

THE FRUIT CROP—WEATHER, &c.—The fruit crop in Western New York, after passing through several trying changes of temperature, promises well, and may now be considered out of danger. On the evening of the 18th of May we had a violent thunder shower, accompanied with some hail and a great deal of wind, that in many places blew down houses and uprooted large trees. It injured the peaches, pears, and plums considerably; apples were just in a sufficiently backward state to escape. What made it worse, were several cold, rainy days that followed. The peach trees looked worse than we ever saw them, and for a short time all hopes for a crop were abandoned. On the last days of May, however, it became warm, and trees recovered rapidly—the curled and bloated leaves dropped, new healthy leaves pushed out, and the fruit that remained on swelled rapidly. Nothing can afford a stronger proof that it is cold and variable weather that affects the peach leaf, than the fact that as soon as we have a warm and steady temperature, the sickly leaves fall, and the tree assumes a healthy hue.

From the first of June up to this time (17th), we have had a remarkably favorable time for vegetation, and the growth made among trees and plants is fully equal to that of our best seasons at this time. On the 14th, 15th, and 16th it was excessively warm, the thermometer ranging from 94° to 96° in the shade; the atmosphere at the time was dry, and vegetation for the moment seemed on the point of being suspended, but a timely shower came, succeeded by a more temperate warmth, and now growth is luxuriant.

Green peas grown in the open ground appeared in the Rochester markets on the 13th June for the first time this season, we believe, and in two or three days after that were abundant, cheap, and good. The *Early Kent*, as far as we know, beats the other early sorts nearly a week.

On the 12th *Bauman's May*, *Early Purple Guigne*, *Belle d'Orleans*, and *Early Richmond* cherries were ripe. The *Belle d'Orleans* is the earliest light colored cherry we have yet seen.

Editor's Table.

THE MONROE COUNTY PLOWING MATCH took place at Churchville, June 4th, and was well attended, there being at least one thousand persons on the ground. Nineteen plows were entered, five of them by boys under eighteen years of age. The whole of the plowing was good; that of the boys first rate, and all five of them took premiums. One, a boy under fifteen years of age, plowed the quarter acre in sixty-three minutes, and was awarded a special premium. As a general rule, however, we think skill and not speed is specially to be commended at plowing matches. The following extract from the report is all that our space permits us to give:

"Compared with former years the committee are of the opinion that a fair improvement has been made, both in the skill of the plowmen and in the superiority of the plows used. And yet in a county rich in agricultural resources as our own, and with a wheat soil unsurpassed by that of any other in the State, we ought, and with suitable encouragements might do better than we were permitted to witness on the present occasion. For the encouragement of this important branch of farm labor, the committee would recommend that great attention in future be paid to the selection of a uniform plot of ground—that the Society, if possible, increase its premiums—and that the award be divided equally between the plowman and the entering competitor."

The last remark refers to a much needed reform; for though no true gentleman would think for a moment of appropriating the praise or pocketing the money won by the skill of his hired help—yet, it would be best to award the premiums in the name of the plowman, and pay them to him in person.

CLOVER SEED.—Every farmer should make it a point to grow clover seed. Never be under the necessity of purchasing. If you have to pay a brother farmer or a city seedsman \$4 or \$5 per bushel for seed, you will probably be too sparing of it: you will not sow enough to the acre, nor sow so many acres as though you grew it yourself. It is a fact consistent alike with practical experience and theoretical science, that, other things being equal, the acreage yield of wheat, corn, oats, and barley, will be in proportion to the amount of clover grown and plowed under or consumed by stock on the farm. If possible, never sow a field to wheat or barley without seeding it down with 10 or 12 lbs. of red clover per acre. To do this, you must grow your own seed. Select a few acres of your *cleanest* land, say a piece that was seeded down with wheat after summer fallow. A dry, rather heavy loam is, perhaps, best. The first crop should be mown

early. If cut in showery weather, the hay may be injured, but the clover for seed will grow strong and ripen the seed together. If dry hot weather follows the first cutting, the crop of seed ripens at different periods, and is generally very inferior, both in quantity and quality. Four bushels per acre is an average good crop. Frosts do not injure the seed. It may, therefore, be allowed to remain in the field late in the fall.

We have received from the publishers, Messrs. CROSBY, NICHOLS & Co., of Boston, through ERASTUS DARROW, and SAGE & Bro., of this city, by whom they are for sale, the following works:

DISCOURSES ON THE UNITY OF GOD, AND OTHER SUBJECTS.

This volume contains about a dozen Sermons upon topics of interest. They are written by Rev. Wm. G. ELIOT, Jr., of St. Louis.

REGENERATION. By EDMUND H. SEARS.

This work is divided into three parts: The Natural Man; The Spiritual Nature; The New Man; and is a fine work upon the subject discussed, and covers the Unitarian side of the argument.

CHILD'S MATINS AND VESPERS. By a MOTHER.

This little book is filled with prayers for children, for morning and evening, running through a month; added to which are the Commandments and comments upon them—also a series of verses from the Bible, and a number of prayers. It is a very pretty present for a child.

THE PROPHETS AND KINGS OF THE OLD TESTAMENT: A series of Sermons preached in the Chapel of Lincoln's Inn. By Rev. T. D. MAURICE, Professor in King's College, London.

We have hardly had time to look over this volume, but a cursory examination makes us suspicious that it is a work of real and positive merit. We commend it to clergymen and lovers of religious literature.

ECLIPSE OF FAITH; OR, A VISIT TO A RELIGIOUS SCEPTIC.

REASON AND FAITH. By HENRY ROGERS, Author of "Eclipse of Faith."

ADVENTURES IN THE OZARK MOUNTAINS OF MISSOURI AND ARKANSAS. By HENRY R. SCHOOLCRAFT.

A work full of interest and instruction. Published by LIPPINCOTT, GRAMBO & Co., Philadelphia. For sale by DARROW.

ELEMENTARY TREATISE ON BOOK-KEEPING. Containing four sets of books by Single Entry, and six sets by Double Entry. By J. M. CRITTENDEN.

In this work principles are taught in a manner concise, simple, and complete. Published by E. C. & J. BIDDLE: Philadelphia.

Inquiries and Answers.

(G. SHARPLESS, Strickersville, Pa.) Pine saw-dust is decomposed with great difficulty, and is worth very little as manure after it is decomposed. We have known it kept for five years constantly moist with liquid from the barn-yard without decomposition, and it was of no value as manure except as the means of conveying the liquid to the soil.

DRAINING TILES.—Several correspondents have requested information in regard to the manufacture of draining tiles, the best clay, best shape, proper length, depth at which they should be laid, &c. On these points there is much difference of opinion, and we would like to have the views of our practical correspondents on the subject.

It is particularly desirable that the clay be free from stone. Some prefer clay that makes a very porous tile. This is, in our opinion, no advantage, the joints of the pipe affording ample space for the water to get into the drain. Clay that will make good brick, will make good tiles. On the relative merits of pipe and horse-shoe tile, much depends on the nature of the soil, length of drain—whether it is merely surface water or spring water that is to be carried off. The best underdraining we have ever seen was with horse-shoe tiles laid three feet deep *across the fall*, discharging into covered drains laid down the fall. The small pipe, however, work well, and are much the cheapest. With the inch and a half or two inch pipe, drains three feet deep need not be cut at the surface more than one foot wide, gradually narrowing to the width of a man's foot. We would lay the pipe *down the natural fall of the land*, and have them discharge into covered main drains laid across the fall, and let the main drains only discharge into open ditches. This is consistent with sound theory, and enlightened practice.

DRAINING TILE.—You will see that I live in the Maumee Valley, a country needing draining as much, perhaps more than most others. Farmers content themselves in making shallow, open ditches. This will not do; we lose one-third of our crops by surface water. In order to farm it successfully, we must have thorough under-draining. Many think it won't pay, but I wish to try the experiment on a small scale.

In the April number of the *Genesee Farmer*, 1852, page 199, you give the internal dimensions, but not the whole diameter of the pipe. How thick should the metal be to be most durable? What length should they be? Are they made of the same material as brick? Will two-inch pipe answer for leading drains? You will much oblige a subscriber by answering the above questions in the next number of the *Farmer*, as I wish to contract for pipe to drain with next fall or spring. JARVIS GILBERT.—*Springfield, O.*

The thickness required depends somewhat on the clay used and on the size of the tile. The inch and a half or two-inch pipe are about half

an inch thick. The horse-shoe tile are from half an inch to an inch thick, according to size; 12 to 14 inches is the usual length. They are made of the same kind of clay as brick. It is very essential that it be free from stone. A good tile will ring like cast iron. As a general thing two-inch pipe will not be large enough for main drains, or drains into which a great many sub-drains discharge their water. The four-inch horse-shoe tile are best for this purpose, and in some cases it is necessary to have even larger, or what is sometimes done, invert the lower tile and place another tile on the top so as to make a pipe. Such a main drain will carry off an immense quantity of water, and is seldom needed.

At a low estimate, no doubt your crops would be increased one-third by judicious and thorough under-draining. On land worth \$60 an acre undrained, an expenditure of \$30 per acre in draining cannot but be profitable. Much less labor is required to cultivate a well-drained than an undrained farm, while the annual yield would be at least one-third more; and this one-third increase is nett profit.

STRAW MANURE.—I wish to know how I can convert straw into manure in the best and quickest manner. I have heard that if composted with lime, it would soon *come out manure*. But I do not know in what manner to apply it, nor in what state the lime should be, nor the quantity to be applied to a given quantity of straw. Any information in the matter will be most thankfully received. DWIGHT BASSETT.—*Oakland, Wis.*

Straw alone will not make good manure. It does not contain the necessary ingredients in sufficient quantity, and therefore no process of fermentation can convert it into good manure. Its chief manurial value consists in its absorptive quality. It will hold a large quantity of liquid. When judiciously fermented with the liquid and solid excrements of animals, the whole mass is converted into first rate manure. The urine of itself is a most powerful fertilizer, but it needs fermentation before it is fit food for plants. When straw, solid and liquid excrements, are fermented together, the gases eliminated by the decomposing urine act upon the mineral matter of the dung and straw, rendering it more soluble, so that the mass thus fermented is far better than it would have been had each substance been added to the soil separately.

It is easy to rot straw by mixing with it lime or unleached ashes, but it is a species of *combustion* that no sane man will practice. A much cheaper process would be to set fire to the straw, and afterwards, if lime is needed, mix lime with the ashes and spread them on the land.

We affirm that a mass of straw thoroughly fermented, in conjunction with lime, is of little, if any, more value than would be its ashes mixed

with the same quantity of lime, and that the ashes of straw will be found of no value on most wheat soils.

SUMMER FALLOW FOR WHEAT.—We have recently been discussing the merits of two systems of preparing land for wheat: one, breaking it up early in the spring, plowing cross the furrows again in July, and again immediately before sowing; and the practice beginning to prevail here to some extent, of plowing but once and cultivating twice, to kill the grass, &c. I would like to know your opinion on this subject. A BUCKEYE.

The nature of the soil has more to do with this question than anything else. Unless to destroy weeds, summer fallows are inadmissible, in good practice, on light sandy soils. On the other hand, heavy loams or clays are always summer fallowed for wheat with great advantage. There are few *heavy soils*, if underdrained, but what will yield a first rate crop of wheat after a good summer fallow. It is, however, the opinion of many of our best farmers in this neighborhood, that even on heavy soils plowing under a crop of clover in full bloom, and cultivating and harrowing the land to keep down weeds, &c., and then putting in the seed with a cultivator, is better for wheat than summer fallows. On sandy soils such is undoubtedly the case; and though on clayey soils the gain by plowing in clover is not so great as on sandy soils, yet we are inclined to think it a better practice than summer fallowing.

We should like the opinion of our readers on this subject.

I have a spring some hundred rods or more from my house, which I have brought in pine pump-logs. They are now nearly decayed—so much so, that I am compelled to relay them this season with logs or other materials. I have it in my mind to put down cement. Some say put down lead. I do not exactly like lead. My first objection is, that the distance is so great, and the spring is not over large, that it would be unhealthy; and second, that it would be too costly. Have you, or any of your correspondents, had any experience in the use of cement? and if so, I would like to hear from them through your journal as to the probable cost per rod. The digging is such as we usually find on the Genesee river.

Should I adopt the cement as a material, I will give the cost, &c., to your readers through the *Farmer*, should any one desire it. D. P. BROOKS.—*Fillmore, Allegany county, N. Y.*

Water containing lime, as all spring water does to some extent, is not tainted by passing through or standing in leaden pipes or vessels. On the contrary, pure water or rain water will dissolve, under certain circumstances, a considerable amount of lead; such water is always injurious, and sometimes proves fatal to those who drink it.

ALVA WILCOX, of West Bloomfield, N. Y., makes, or did make, clay pipes about $1\frac{1}{2}$ inch in diameter, which are cemented together, and thus form a first rate conduit for water, &c.

Will our correspondents give us their views on this subject?

CORN PLANTERS.—Can you inform me where I can procure a Corn Planter for planting in hills? Are the Seed Planters advertised by E. D. HALLOCK and others arranged for planting corn, and who manufactures the best article? D. F. LAISE.

The Seed Planters of E. D. HALLOCK are not arranged to plant corn. They will sow it in drills, if required, but are not recommended for that purpose. They are intended to drill small seed such as carrots, beets, onions, ruta bagas, &c. We have used one this spring and can confidently recommend them. There are quite a number of corn planters possessing many excellent qualities. It might be invidious to select one as the best out of so many good ones. EMERY'S Corn Planter and Seed Drill, advertised in this number, has been extensively used and is well recommended. J. GANSON & Co., of Brockport, N. Y., manufacture one that plants two rows at once. We hear this well spoken of. Many others deserve mention did space permit.

You did not give your post-office address, or we would, as you wished, have answered by private letter.

MANURES.—Will you be kind enough to inform me which is the best work now published on the composition and application of manure. I am anxious to procure more information than I at present possess on this all-important subject to the farmer. I have been a reader of your paper for two years past, and the more I read the more I am convinced of my ignorance in relation to my business. I am anxious to learn, and any information will be gratefully received. HORACE FORD.—*East Cleveland, Ohio.*

Stockhardt's Chemical Field Lectures for Agriculturists, contains as much and as reliable information on this subject, as any single work within our knowledge. In *theory*, it is, in our opinion, the *best* work written on the subject of manures. The practical application of theory is, perhaps, somewhat at fault for this country. The *Progressive Farmer* contains, also, much valuable information on this subject, although, in our opinion, some of its theories are unsound.—*Dana's Muck Manual* is also a most excellent work.

Any of the above works can be had at this office, or from most booksellers.

In the May number of the *Farmer*, reference is made to the fact of a Mr. SMITH *forking* his ground to the depth of eighteen inches, and obtaining immense crops by so doing. The subscriber, as well as others in this section, will be pleased if you will give some hint at Mr. SMITH'S method in so forking his land, as well as the implements used in the process. JOHN GEORGE.—*Woodcock, Pa.*

"Forking" bears the same relation to spading that handling manure with a dung-fork does to the use of a shovel or spade for that purpose. To till the ground eighteen inches deep, Mr. SMITH spades or "forks" it twice the length of the tines or blade of the implement. A fork for digging up the earth differs somewhat from a dung-

fork, being heavier and stronger, and put to severer work. A machine has recently been invented in England for digging, which operates something like a elod-crusher, and is driven by horses, which is said to be a valuable improvement.

Please give us some information in regard to clover hullers. As clover is becoming more extensively grown, it is important that we have a better machine in this country. With the one that we now have (Mansfield's patent), if we thresh fast, say 30 bushels per day, it cuts the seed badly. If there is a better one in your State, we would like to hear of it in the next number of your excellent paper. I have a quantity of barnyard manure in heaps, quite fine, intended for spring crops, but on account of wet could not get it out. Now, to use it for a wheat crop on sandy land, which we plow but once, and turn under clover, would you spread the manure and plow it under, or plow first and then spread the manure and harrow it in? EASTON.—*Lima, Mich.*

Spread and plow in manure on sandy land, rather than plow first and harrow it in.

In regard to the best mill for grinding clover chaff from the seed, we cannot speak with confidence, and desire information from some of our numerous readers who are familiar with the subject.

What is the best method of constructing bee hives, so as to keep out the worms? What is the best mode of keeping them out of all kinds of common box hives? and what is the best mode of eradicating the evil when it already exists? J. MISLER.—*Mogadore, Summit Co., Ohio.*

Hundreds, perhaps thousands, have taxed their wits to attain the objects indicated in the above questions; and who among the whole has best succeeded, we can not say. Can not some reader aid us, and all bee keepers, by throwing light on this subject?

I have been wishing to see a treatise on the best known treatment of sorrel. It is a crop of a good deal of importance with us, and yet I have heard but little said about it. Some imagine that where it grows there is a sourness in the land, which, if corrected with lime or ashes, it will stop growing. Will those who can throw light on this subject, and like to see our country improving, impart their knowledge to your columns?

I have heard it said that there are saws sold in Rochester for horses to saw wood in the log with: I would like to know if it is so, and also the thickness and general plan of the saw. Stove wood, stove-bolts, heading, and shingles, in my opinion, should be *sawed in the log*. If you ask in what way, I answer, by horse-power is a good way, and it is easily connected with a threshing power. Once get a crank on the belt-wheel of the power by a strip of wood each side of the wheel, and a bolt through them for a crank; or otherwise, a pitman on the crank, and the other end swinging a pendulum, and another pitman from the pendulum to the saw. The saw may be a cross-cut, strained like a buck; or, what is better, a hand-saw large enough for horses. One or two horses can saw from six to ten cords of stove wood in a day. I have sawed a cord of hard maple by sheep-power and one man assisting to split it in less than two hours. If you wish the wood about two inches square, turn the block on end and slab and plank it two inches thick across the log; then string it along on a rail, and you can finish the splitting in short order, and it lies in a good position to pile or load up for market. I have sold considerable for one-fourth more than *cord* wood cut for the stove. Almost any wood can be split, if sawed into logs only 15 or 18 inches long.

I would like to see some further observation on cutting wood by horse power, as I have no experience either in making or using.

I have used a good sheep-power with one or two sheep weighing from 100 to 150 pounds, and there is no room for complaint but what it pays well for the small expense, and

if I did not wish to saw considerable for other folks, would be contented with it for years to come as I have for five years back.

I wish some one would tell us how to build a milk-room, so that it would be sufficiently cool and dry to get the best cream. The making of a large quantity of butter from a given number of cows, I imagine, is understood by but few and practiced by less. N. N.

RATS.—I am troubled in no small degree with what some call the dock or wharf rats, and how to get clear of them I know not. Various things have been tried, but all seem to fail of clearing them out. If any of your subscribers know of anything that will exterminate them, if they will let it be known through the columns of your valuable paper, they will confer a favor on JAMES M. BRADBURY.—*Sparta, O.*

HORTICULTURAL.

(C. L.) SEXES OF THE AURACARIA, DEODAR, AND CRYPTOMERIA.—The Auracaria has the male flowers on one tree and the female on the other. The latter, it is said, does not attain more than one-third the size of the former. The Deodar and Cryptomeria have, we believe, both male and female flowers on the same tree.

(ROSE BUSH.) The leaves enclosed appear to have been injured by some insect, but that may not be the cause of their dropping. You should examine the roots, and see if all is right there.

(MRS. W., MOSCOW.) NAMES OF PLANTS.—The flowers inclosed are those of the Japan Quince (*Pyrus Japonica*). There are two sorts—the scarlet and blush. It can be propagated by cuttings of the roots, and by grafting on the common Quince or on the Apple.

FLOWER SEEDS.—The supply prepared by Mr. VICK, the publisher, was very large, yet not large enough to meet all the demands. Several applications, we are sorry to say, have to lie over, as seeds could not be purchased here to supply them.

GRAPES.—I beg to say that I lately read in a Provincial newspaper an extract from a late number of *Hovey's Magazine*, an account of a new seedling grape, said to be fully equal to the *Isabella*, and ripens at least one month earlier. Can you inform me, through the *Farmer*, whether this species of grape has been propagated to any extent, or where I can procure one or more of the vines? (1)

Also, please to say whether the *Diana* grape ripens much earlier than the *Catawba*, and whether it is a hardy grape? (2) J. K.—*Cecilia, C. W.*

(1) We are not aware of its being propagated to any extent. Messrs. Hovey & Co. can probably give the information.

(2) The *Diana* is quite hardy, and ripens ten days or a fortnight sooner than the *Catawba*, under the same circumstances.

CATERPILLARS.—En route to California I noticed, through most of the road, that our common caterpillars (web) were found on the Cherry (Choke) and Plum trees. In this country the wild Cherry is always full of them. On the plains, other trees never, or very seldom, held a web. Do the Plum and Cherry produce them, or are they only more attractive? J. W. OGLE.—*Princeton, Ind.*

They do not produce them, but are more attractive as food.

Our Cherry trees are dying in this vicinity: they become filled with black excrescences, similar to the Plum. (1.)

I have noticed for three seasons past, that when the tree arrives at its full vigor in the summer, the leaves become infested by myriads of small green flies, or bugs, on the under side, causing them to curl up and decay. Please state the manner of treatment to get rid of the evil. (2.)

The land is a gravelly loam, with clay subsoil; trees common Cherry. Our Plum trees flourish a few years and then decay. Pear and Apple trees thrive, and live to a good old age. J. A. Q. SOUTH.—*Fultonville.*

(1) Cut out these excrescences as soon as they appear. We have never seen them on any cherry except the common sort called the "pie" cherry.

(2) These are *aphides*. Easily destroyed by syringing the trees freely with a pretty strong solution of tobacco mixed with soap suds.

New York State Agricultural College.

THIS Institution was chartered by the Legislature of the State of New York, for the purpose of presenting to Agriculturists the means for acquiring a knowledge of the Arts and Science appropriate to their vocation; to prepare Students for practical active labor, by training the mind in a system which shall inculcate an intimate acquaintance with the sciences essential to agricultural success.

To insure the development of principles and their application to the soil, the Legislature has required the purchase of not less than three hundred acres of land.

The Trustees, having accepted the trust confided to them by the Legislature, organized the State Agricultural College, by the following appointments:

JOHN DELAFIELD, President of the College.
Hon. JOHN A. KING, Chairman of the Board of Trustees.
JOEL W. BACON, Secretary.
N. B. KIDDER, Treasurer.

At a meeting of the Board, on the 4th of June, a Report was presented by B. P. JOHNSON, from a special committee on the Location of the College, declaring "that after an examination of the Oaklands Farm in Seneca county, they are entirely satisfied that the price asked for it, is its fair value in the market, for farming purposes; that it is, by previous preparation, by position and variety of soil, in every respect adapted to the objects of the Institution; that the title is perfect, and recommend that the chain of title be entered at large on the minutes of the Board," &c. This farm is situated mid-way between the market towns of Waterloo and Geneva, in full view of the Seneca Lake, and overlooking the village of Geneva; elevated about 125 feet above the level of the Lake, it is free from causes disturbing health; its soil varies from a strong clay to a sandy loam, presenting varieties sufficient for testing by experiment every doubtful question in relation to soils, and to exhibit the most approved system of cultivation.

The Trustees are prepared to receive from farmers and friends of agriculture, proposals for the Capital Stock of the Institution, which will be distributed in shares of fifty dollars each, payable

"	10 per cent.	on subscribing.
"	40 "	1st July.
"	50 "	1st October.

The Trustees may be addressed (post paid) at their respective residences, as follows:

Hon. JOHN A. KING, Jamaica, Queens county.
HENRY WAGER, Westerville, Onondaga county.
B. P. JOHNSON, Agricultural Rooms, Albany.
WM. KELLY, Rhinebeck, Dutchess county.
N. B. KIDDER, Geneva, Ontario county.
JOEL W. BACON, Waterloo, Seneca county.
TALMADGE DELAFIELD, Geneva, Ontario county.
WM. BUEL, Rochester, Monroe county.
JOHN DELAFIELD, Oaklands, Seneca county.

The Officers of the College will endeavor to present subscription books in each county, that the College, so entirely agricultural and peculiarly the Farmer's institution, may find its support widely diffused throughout the State.

The President will, upon application to him, give all useful information in relation to the ordinances, rules and regulations of the College, and the course of instruction to be pursued.

By order of the Board of Trustees.
JOEL W. BACON, Secretary.

Another Review of the Geneva Trial of Horse Powers, &c.

I HEREBY make my statement in relation to the Geneva Trial of Machines.

In the first place, I have a few words to say in relation to the report, and also the course of the committee. I would here state, that there were only three men that constituted the examining committee on Threshing Machines; they were J. S. GOULD, J. E. HOLMES, and GEN. HARMON. The report of the committee was not according to the record as taken at the trial, and kept by Mr. J. S. GOULD. They make a reduction of more than 30 per cent. in the operation of my machine from the record as they kept it at the time; and this was the only experiment, excepting the threshing, that had any merits in it. Mr. GOULD told me, just as I started to leave Geneva, that in looking over his minutes, he thought they had made a mistake, as his account gave me more power than in some other experiments, and placed my machine ahead of the others. I wrote to him afterward, and proposed to have the experiment tried over again at the State Fair at Utica, which he assented to, and I believe that the notice of the same was given to the others.

I took my machine to the Fair as agreed, and the others were brought there also. When the committee came to make the trial, they took an entire different course from what they had done at Geneva, and I could not prevail upon them to try the Geneva experiment over again, to see whether they had made the blunder that they report was made, (or the one that was made by their report.) It seemed as if they now knew what course was necessary (from the Geneva trial) to take to make the experiment appear favorable to the Emery power; in this they were some disappointed, as their plan placed Badger's ahead; but this they got around by saying that Emery's was made in a superior manner, which they could not say of mine.

Their correction of the minutes as kept at Geneva, made it into an error, as was manifest to any observing person. Taking it as they reported, it would only require a movement of the platform of 1½ of a mile per hour; the persons on the power, and others looking on, could plainly see that they were walking much faster than that.

There is another thing in relation to one of the committee (Mr. HOLMES), that was not right in appearance, and that is, he said or stated, at the State Fair, that Emery was to exhibit his machines (the Dick anti-friction presses) at the Ohio State Fair the next week; this showed such a combination of interest, that there was some danger of having his judgment biased in making up his report; to say the least of it, it made him liable to suspicion of partiality.

After the committee had concluded upon their report, and one of them, Mr. GOULD, had left, as I was informed, I called upon the other two, (not as a committee,) to come and see if they had been justified in making the error (by correcting one as they said) in the report of the Geneva trial. One of them declined, the other promised to re-examine, but failed to do so for some cause or other. Thus much for the committee and their report.

I will now examine the experiments made at Geneva.—In the first place, I will state that the machines under review—that is, mine, Emery's and Badger's—were all new, and had not been used before. Emery's had some things about it to please the eye of some lookers-on, and perhaps some of the committee, such, for instance, as the turning of a bolt and nut, all of no practical use, and rarely, if ever, done by any threshing machine builder. Emery obtained some advantage over the rest by having a team (belonging to one of the committee, as I was informed) employed for the week, which enabled him to keep experimenting with his machine, and to learn when it was ready for use, and thereby smoothing up his machine to his advantage in the experiments to be made with it. He altered and repaired and experimented until Thursday afternoon, when he threshed his 100 sheaves under the direction of the committee; this took him 17 minutes, with his concave raised three-fourths of an inch—consequently he did not thresh his grain clean from the straw, as I learned the next day, by putting some of his straw through my machine.

The next morning I obtained a team to make my experiment in threshing. This team had never been on such a power before; when they came, I put them on to see if my power would work, not knowing anything of its operation only from appearance, as it was the first one of the kind that had ever been put in operation. To try it, I got some of the straw threshed by Emery the day before, and put it through my machine. I left my concave close to the cylinder, seeing that Emery did not thresh his clean with his up.

The committee now determined to have the grain weighed in making the experiments. They allotted to me

THE HORTICULTURIST,

And Journal of Rural Art and Rural Taste.

EDITED BY P. BARRY, AUTHOR OF THE "FRUIT GARDEN."

The *Horticulturist*, as its name implies, is devoted to Horticulture and its kindred arts Rural Architecture and Landscape Gardening, and will keep its readers advised of every thing new on the subject, either in Europe or America. It is a Monthly Journal of forty-eight pages, beautifully printed on the finest paper and elegantly illustrated. In addition to numerous wood engravings, each number contains a full page engraving on stone, of some new, rare, and valuable fruit or flower, and is one of the most beautiful as well as the most useful Monthly Journals published in the world. We subjoin a few notices by the press, showing the estimation in which the work is held by our editorial brethren:

We are glad the work has fallen into such excellent hands.—*Louisville Journal*.

We feel that we are doing our readers a real service when we urge them to subscribe for this invaluable monthly.—*Weekly Democratic Press, Chicago*.

We congratulate the public on having so valuable a periodical as the *Horticulturist* within their reach.—*New York Daily Book*.

Its contents are spirited and various, the selections judicious, the illustrations elaborate.—*New York Daily Times*.

A standard work of authority upon all subjects discussed or explained in it.—*Ticksburg Whig*.

There is no work in this country of greater value to the cultivator of fruits.—*Esquire, Portland, Me.*

It is well got up; its articles able, various, and appropriate.—*Geneca Courier*.

Every man who has land enough for a garden should possess this work.—*Weedsport Advertiser*.

The plates alone are worth the year's subscription. The letter press is of a highly instructive character, and embraces a variety of topics. None who have a taste for the beautiful in nature should be without such a valuable publication.—*Hamilton (C. W.) Spectator*.

There is substantial profit as well as pleasure in cultivating taste in buildings, yards, gardens, &c., and the subscription price would be capital well invested by those who will attend to the contents of the *Horticulturist*.—*Daily Courier, Zanesville, Ohio*.

Any remarks of our own we fear would add nothing in comparison with the value of such a well conducted work. The plan of coloring the plates is decidedly beautiful, and no person interested in horticultural pursuits should be without it. It seems a wonder to us that horticulturists do not look more to their own interests, than to allow their monthly papers to be received without this indispensable accompaniment. The circulation ought to reach half a million. Although the number issued is already extensive, yet it should be increased, from the fact that it is a work of great merit.—*Port Byron (N. Y.) Gazette*.

TERMS—\$2 per year, in advance. The volume commenced on the 1st of January last, and we can supply back numbers from that time. Those who prefer can commence with the (half year) July number.

COLORING PLATES.—Still further to add to the value of the work, and meet the improving taste and increasing wants of the horticultural community, an edition is published with COLORED PLATES, each number containing a full page engraving of some new, rare, and valuable fruit or flower, correctly colored from nature by the best living artists in this line. This is a new and important feature, in this country. Price \$4 a year, in advance.

Address JAMES VICK, JR., PUBLISHER, Rochester, N. Y.

This periodical is got up in excellent style, and well sustains its former reputation under its present management.—*Middlebury (Vt.) Register*.

We are quite satisfied with the work, and are inclined to believe that, to the mass of readers, the work will be even more acceptable than it was under the charge of the accomplished Downing. We recommend the work cordially to the patronage of our friends and the public.—*Massachusetts Spy*.

Its contents embrace a variety of subjects, treated upon in the most scientific manner. The illustrations are numerous and well executed. We know of no other work of the kind on this continent that can compare with the *Horticulturist*.—*Daily Spectator, Hamilton*.

This magazine has lost nothing by falling into the hands of its present proprietor, Mr. VICK, of Rochester; for he maintains its neat typographical experience, while the new editor, Mr. BARRY brings to its editorial management abilities of a high order.—*Gazette, Keeseville, N. Y.*

The *Horticulturist* is almost invaluable to the fruit grower, and to the gardener, and it ought to be in the hands of every one. The new editor, Mr. BARRY, proves his eminent fitness for the post so lately filled by the lamented DOWNING.—*Watch Tower, Adrian, Mich.*

This publication embraces a wide field, and has something instructive for every reader. Its artistic embellishments and mechanical execution are of the highest order; for this we give credit to the publisher. Its editorials are practical, scientific, varied, and instructive. Its correspondence embraces some of the ablest horticultural writers in the Union.—*Register and Examiner, West Chester, Pa.*

This useful monthly, instead of losing interest as many feared it would in consequence of the death of its lamented proprietor and editor, Mr. DOWNING, continues to fully maintain its reputation. In fact the present editor and publisher appear to be using their best endeavors to raise it higher in public estimation than before. It is an eminently practical work, and therefore well fulfills its promises. No one who has anything to do with gardens, trees, shrubs, plants, or flowers, should fail to be among its readers.—*News and Advertiser, Middletown, Conn.*

Great Sale of Short-horn and Devon Cattle, and Southdown Sheep.

ON Monday, the 7th day of September next, at 1 o'clock, P. M. I will sell at my farm on Grand Island, six miles below Buffalo, about 30 full blood Short-horns, a few Devons, and about 30 high grade Short-horns and Devon cattle, consisting of cows, heifers, and young bulls.

The young Short-horns are chiefly the get of my imported bull, Duke of Exeter (10,152)—a bull not exceeded as a fine stock getter by any bull in the United States.

The young Devons are the get of the bulls Candy and Quartley, both imported by Mr. Stevens. The superior of these bulls in blood, style and breeding, is not to be found. Quartley is my present stock bull.

I will offer at the same time 50 pure bred Southdown sheep—rams and ewes; also, a few Middlesex pigs—both sheep and pigs the direct get of imported sires, from dams descended of late importations.

Catalogues will ready by the first of August, and will be sent, on application to me, by mail.

TERMS.—All sums of \$100 and less. Cash; for larger sums, approved notes at 4 months, with interest, payable at bank, will be received, if preferred.

A steamboat will carry all persons wishing to attend across the ferry to the farm at 10 o'clock, on the morning of the day of sale. The stock can be viewed at any time previous, by calling on me at my residence in this place.

LEWIS F. ALLEN

Black Rock, July 1, 1853.—3t

A Valuable Farm in York County, Virginia, For Sale;

CONTAINING seven hundred acres of land, one-half cleared and in cultivation, and well adapted to all kinds of grain, vegetables, cotton, and tobacco. It has on it two dwellings, one a two story brick house, with basement, and seven rooms besides basement; the other a good framed house, with four rooms, two passages, and basement, with barn, stables, and all necessary out-buildings in good order. It is nearly enclosed with chestnut fence, and abundance of chestnut to enclose the farm with cross fences—water running through every field out of marl banks—and marl that cannot be surpassed in the world in the greatest abundance. The situation is as healthy as any in the world. The uncleared land is heavily set with Oak, Chestnut, Pine, Cedar, and Hickory, and situated in the upper part of York county, six miles north of Williamsburg, three miles from York river, and one mile and a half from a creek leading to York river. The present owner cannot give it the requisite attention.

Price—Ten Thousand Dollars, provided early application be made. THOMAS E. EVANS.

Post office, Williamsburg, Virginia.

July, 1853.—11*

Turnip Seed.

WE have just received from England our new supply of Turnip Seed, among which are

- Five hundred lbs. Ruta Baga.
- Five hundred lbs. White Flat Norfolk.
- Five hundred lbs. White Globe.
- Two hundred lbs. White Stubble.
- One hundred lbs. Yellow Scotch.

All of which is warranted of the first quality.

J. RAPALJE & CO.,
65 Buffalo street, Rochester.

Ketchum's Mowing Machine.

WE are now prepared to fill all orders for these justly celebrated machines, of which over seven hundred have already been sold this present season. For cutting grass with this machine we defy competition. For description &c., we refer to May number of *Farmer*.

Price of machine, \$100 with one, and \$110 with two setts knives. Transportation from Buffalo added.

J. RAPALJE,
July, 1853. 65 Buffalo street, Rochester.

Corn Cultivators, &c.

WE have now on hand a full supply of the best kinds of Corn Cultivators, Corn Plows, Hoes, &c., &c., to be found in the city—all of which we will sell low for cash, at the Genesee Seed Store and Agricultural Warehouse, 65 Buffalo street, Rochester.

July, 1853. J. RAPALJE & CO.

Turnip Drills.

WE have now on hand a full supply of the best kinds of Seed Drill. Price from \$3 to \$16, at the Genesee Seed Store, 65 Buffalo street.

J. RAPALJE & CO.

MCCORMICK'S REAPING AND MOWING MACHINE FOR 1853.

FROM the well known reputation of my Reaper in the hands of more than 700 farmers, and that it has maintained its high superiority wherever it has been fairly tested—having again, after a nine days' trial with Hussey's in England at the last harvest on the Royal Agricultural farm, which was the most extensive trial ever made with Reapers in any country, been declared by the able jury of English farmers as decidedly the best machine in every respect, and recommended to the farmer's of England as one on which they may safely rely to cut their harvest, and which since that time has been greatly improved, and its capabilities as a mower thoroughly tested, and which I am now prepared to warrant superior to any other, both as a Reaper and as a Mower—further testimonials of its superiority can hardly be necessary.

That Seymour & Morgan, Manna, and others, are making and selling my machine, altered, much to its prejudice, with the hope of avoiding the responsibility of infringing my patent, is the best evidence of the superiority of my own. They will be held responsible, and arrested in their course as soon as the law which is sure can reach them. Those purchasing and using their machines become liable with them.

To convince any responsible farmer (who is in doubt which is the best machine) of my confidence of the superiority of my own, I will permit them to take one of mine with one of Hussey's or Burrall's on trial, to keep the one preferred; and am ready to submit to the same test such points in other machines, claimed as improvements, that are not my own.

The new improved Reaper and Mower will be forwarded to any part of the State or Canada, if ordered before the stock on hand is exhausted, of THOS. J. PATERSON, Rochester, Office No. 6 Burn's Building. Price \$110 cash, or \$30 on delivery and \$5 on time, and \$25 extra for mowing attachment, or \$30 on time. Subject to freight from Buffalo.

Some few reapers of last year, an excellent article, can be had at \$100 cash and \$105 on time.

For further particulars see handbills.

Rochester, May 20, 1853.

Employment for Young Men.—Book Agency.

D. M. DEWEY, Arcade Hall, Rochester, has, during the past nine years, employed several hundred young men in the sale of books, and is now more extensively than ever engaged in the sale of good and valuable books by traveling agents. The following are a few of the books now offered:

Uncle Tom's Cabin, in paper, retail,.....	38
Sequel to Uncle Tom's Cabin, in paper, retail,.....	25
Key to Uncle Tom's Cabin,.....	50
Youatt on the Horse, the best work on the Horse,....	\$1 50
Barry's Fruit Garden, the best work on Fruits,.....	1 25
Life of the Empress Josephine, by Hoadley,.....	1 25
Diek Wilson, a new Temperance work,.....	1 25
The Australian Captain, a book of facts,.....	1 25
Chemical Field Lectures—Agriculture,.....	75
Bibles, New Travels, Histories, Biographies, Agricultural Books, Novels, Pamphlets, &c., &c., all of which are put to agents at the lowest cash prices—and agents are indemnified against loss. A small cash capital of from \$1 to \$30 will be required, and the agent can earn from \$1 to \$5 a day, depending upon his adaptation to the business.	

N. B.—Orders for any Book wanted, with the price of the book enclosed, will be promptly answered by mail, and the book sent free of postage.

Subscriptions received for all American and Foreign Periodicals. Address D. M. DEWEY,
May, 1853. Arcade Hall, Rochester, N. Y.

Garden and Field Seeds,

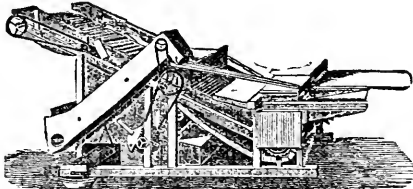
FROM the new establishment of VANZANDT & BOWDISH, No. 114 State street, Rochester, N. Y., can be purchased of the merchants generally throughout the country, in papers or packages, on reasonable terms. Also, at the Agricultural Warehouse of E. D. HALLOCK, No. 24 Exchange street, Rochester, N. Y.

The Seeds from this establishment can be relied on as being of the best quality. They are mostly imported, or grown for us by the *Eastern Shakers*, and are warranted good and true. Full directions for cultivation printed on each paper and package.

VANZANDT & BOWDISH.

Rochester, May 1, 1853.

AGRICULTURAL IMPLEMENT MANUFACTORY,
CORNER OF CAROLINE & THIRD STREET,
BUFFALO, N. Y.



Pitts' Patent Separator—Improved Double Pin-ion Horse Power—Pitts' Corn & Cob Mills, &c.

I HEREBY give notice that since the extension of the patent right on my Machine for Threshing and Cleaning Grain, I have removed to Buffalo, N. Y., where I have permanently located, and erected a large establishment for the future manufacture of the above Machines.

The Separator has been enlarged, improved, and rendered more permanent and durable in all its parts, while the Horse Power for strength, ease, durability and cheapness of repair is not surpassed by any in the United States. This Power is warranted to stand the full strength of eight horses—also to give as much effective or useful power when driven by one or two horses as any other Horse Power, whether constructed on the endless chain or lever principle. It was put on trial at the great exhibition of Horse Powers and Threshing Machines at Geneva, July last, 1852, where it received the New York State Agricultural Society's First Premium "for the best Horse Power for general purposes." The Separator, at the same trial, also received the Society's First Premium.

My Machines will thresh and clean from three to five hundred bushels of wheat per day, and other grain in proportion.

Two hundred of the above Machines are for sale at the Agricultural Works of the subscriber in this city. All warranted to be a better article than can be purchased at any other shop, and if they do not prove on trial to be so, I will take them off the hands of the purchasers at the price they may pay me for them.

I further notify all persons who are purchasing Horse Powers and Separators to be used in California or Oregon, that I will hold them accountable for any infringements of the rights secured to me by letters patent in the above Machines, as I am manufacturing a Horse Power and Separator expressly designed for that section.

All orders for the above Machines hereafter addressed to JOHN A. PITTS, Buffalo, N. Y., will receive prompt attention.

May, 1853—tf. JOHN A. PITTS, Buffalo, N. Y.

French Zinc Paint.

THIS new and beautiful article of Paint is now offered to the trade and public, ground in prepared linseed oil, for the first time in this country. It has been used successfully in France for the last five years, where it has superseded white Lead as a paint.

The French Zinc when properly prepared and used, makes the most brilliant and durable white in use, and is entirely free from all poisonous qualities.

The French Zinc is not more expensive than white lead, and is prepared in such a manner that it requires no farther preparation for use, than to thin it with Turpentine or raw Oil to the consistency of white lead paint.

The French Zinc is very much whiter, and has a better body, than the New Jersey Zinc.

The French Zinc is offered dry, and prepared as above, in quantities to suit purchasers, at the Manufacturer's Depot, No. 17 Buffalo st., Rochester, N. Y.

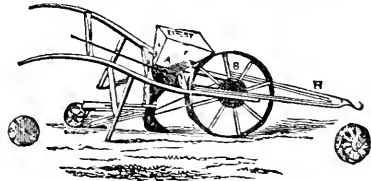
July, 1852. M. F. REYNOLDS.

Fertilizers.

- Peruvian Guano, \$45 per ton.
- Superphosphate of Lime, 2 1/4 cts. per lb.
- Bone Sawings, or Meal, \$2.50, per brl.
- Turnings and Crushed, \$2.25 "
- Pulverized Charcoal, \$1.00 "
- Polash Scrapings, 3/8 to 4 cts. per lb.
- Plaster, ground, \$1.12 1/2 to 1.25 per bbl.
- Sulphuric Acids, 2 1/2 to 2 3/4 cts. per lb.

For sale at the State Agricultural Warehouse,
LONGETT & GRIFFING,
June 1, 1853—4L. No. 25 Cliff street, New York.

HALLOCK'S Ag'l Warehouse and Seed Store.
No. 24, Exchange street, Rochester, N. Y.



[Emery's Corn Planter and Seed Drill.]

THE subscriber, late from the establishment of Emery & Co., manufacturers at Albany, where he has been engaged for the past six years, has been appointed their **SOLE AGENT** in Rochester and Western New York, for the sale of *Emery's celebrated Railroad Horse Powers and Threshing Machines; Circular and Cross-cut Saw Mills, Feed Mills, Corn-stock and Hay-Cutters, &c.*

adapted to the Power, and now offers them at manufacturer's prices, with the transportation added, and subject to the warrantee, as follows: "To work to the satisfaction of purchasers as represented in circulars and catalogues, or to be returned within three months, and full purchase money to be refunded." The attention of farmers is solicited, and a careful investigation into the construction of this Power and its comparative merits, as well as price requested, before purchasing elsewhere. He is also agent for their

COMBINED REAPER AND MOWER.

and keeps constantly on hand Plows, Hay-Cutters, Corn Shellers, Seed Planters, &c., &c., comprising a complete and extensive stock of Agricultural and Horticultural Implements generally, together with a full assortment of Field and Garden Seeds, of the best Imported and Shaker growth.

He is also agent for the sale of Seymour's Grain Drills and Broadcast Sowers, Wheel Cultivators, Gang Plows, Clover Hullers, Cider Mills, Clover Gatherers, Horse Rakes, Scythes and Snaths, Hand Rakes, Grind Stones, &c.

He will be prepared to furnish dealers with Drum and Taylor's well known Scythes; also Manure, Straw, and Hay Forks, Snaths, Rifles, and other haying tools at manufacturer's prices, wholesale and retail.

Particular attention is called to a **NEW PLOW**, which is believed to be the best cast iron Plow ever offered, and which is warranted to do better work, with less expense of team, than any other Plow heretofore sold in Rochester—while the price is less than any other equally well finished.

The "uniform one-price cash system" will be adopted, with prices as low as the cost of articles, and just compensation for labor and time, will allow.

Farmers and others are invited to call and examine the stock of Machines and Implements, and are assured that no effort shall be wanting to meet promptly the wants of a discriminating public.

Circulars and Catalogues furnished gratis on application personally or by mail. E. D. HALLOCK,
June 1, 1853—tf No. 24, Exchange street, Rochester.

HARVEST IMPLEMENTS.

MOWING and Reaping Machines of different patterns, and of the best kinds in market.

Scythes, Snaths, Cradles, and large Hand-rakes, made expressly for raking after the cart; also, Horse Hay Rakes, Pitchforks, very superior, of elastic steel.

Threshing Machines and Fan Mills, combined or single. Horse Powers of the most approved kinds, such as the Endless-chain or Railway, Circular, Cast Iron, &c.

Ruta Baga, Turnips, Cabbages, and all other sorts of field and garden seeds. R. L. ALLEN,
189 and 191 Water street, New York, Ag'l Warehouse.
June 1, 1853.

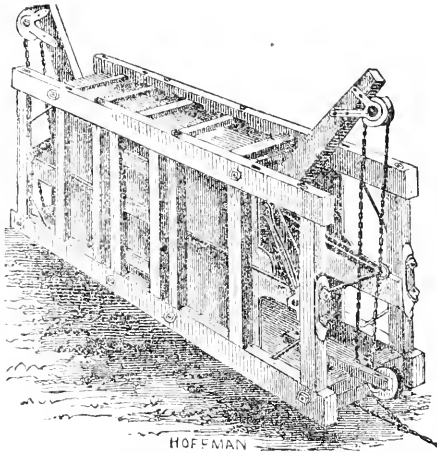
Plows and Cultivators.

PROUTY & MEARS' Patent Center Draft Plows—all sizes—and castings for the same.

MIRBOR & HORTON'S New Improved, fitted up in the most substantial manner.

RICH'S Iron Beam Plows, of all sizes. Universal Cultivators, with Scarifiers; Expanding do.; and Hand Garden Cultivators and Plows.

For sale by LONGETT & GRIFFING,
[31] No. 25 Cliff street, New York.



H. L. Emery's Newly Invented Double, Toggle-Jointed, Horizontal, Progressive Lever Hay and Cotton Press.

PROBABLY no one thing has been more wanted, and less improvements made upon it of late years, than the Hay Press. Notwithstanding this was completed quite late the past season, a large number were made and put into successful operation. As seen in the cut it is closed up and about midway in process of compressing a bundle of Hay. When fully pressed home, the ends of the levers, which are seen at each end extending above the box, are brought down by the chains or ropes and shelves, until the levers themselves become horizontal with the floor. The Press is provided with two followers, both working from the ends towards the center and each other. The chains or ropes from the levers are connected together by passing one of them under the machine and both joining in a larger chain or rope—this larger one being connected with a capstan or blocks and ropes, as most convenient.

When the Press is driven home, the hay becomes pressed into a bundle standing on its end. The side doors are thrown open while the bands are passed round the bundle and secured, when the top doors are loosened and the bundle thrown out. For operation, the levers are raised, the followers drawn back, and the top doors opened from the center to each end by unbuttoning the middle cross bar, as seen in the cut. The opening on the top for receiving hay, is 2 feet wide and 8 feet long. The Press stands upon the floor or ground when in use, which makes it both convenient and capacious for filling and treading in the hay.

The whole Press measures 14 feet long, 2 ft. 10 in. wide, 4 ft. 10 in. high, outside measurement, and weighs, complete, from 1200 to 1500 lbs., and is capable of compressing 250 lbs. of Timothy Hay into 16 cubic feet, (being 2x2x4 ft.) at the rate of five bundles per hour, with two men and one horse, and heavier bales in proportion as to size and time required.

For transportation, the inside work is readily removed and boxed up, while the sides are packed together making solid cubic measurement of the whole thing.

Price complete, with chains and capstans, \$135, and warranted to work as represented, to the satisfaction of the purchaser.

I will, in a future number, give a further notice in detail, with more cuts illustrating its several parts detached.

For further particulars address H. L. EMERY,
April, 1853. Albany, N. Y.

REMOVAL!

HALLOCK'S AGRICULTURAL WAREHOUSE has been removed from No. 50 State street, to

No. 24 Exchange St., Rochester,

in the Store formerly occupied by J. E. CHENEY as a Store Store. The new store is well supplied with Implements, Seeds, &c., comprising a larger and more complete assortment than heretofore. Former customers and farmers generally are invited to call at the new establishment and examine for themselves. E. D. HALLOCK,
April, 1853. 24 Exchange St., Rochester, N. Y.

EMERY'S MOWER AND REAPER.

THE subscriber, not only having made himself practically acquainted with the construction and working of all the successful machines of this class, but having made and successfully introduced several valuable improvements in some classes of agricultural machinery, which have already gained favorable and world-wide reputation and adoption, flatters himself that he has also made an improvement in the construction of a Mower and Reaper of equal if not greater merit, than any of his former improvements.

It will suffice to say, that while this is the most compact, light, simple, cheap, durable, easy working machine, it is at the same time the most perfectly adjustable, and easily convertible into a Mower or Reaper, working as perfectly in either form as those of the best other kinds, whether simple or combined. The frame itself is so suspended upon the axis of the main wheel, as to be elevated and depressed at pleasure, so as to secure a horizontal or inclined (forward or back) position of the whole machine, at whatever elevation used, thus always having the cutting works in proper position.

In reaping, a reel is used, and the raker stands erect, face forward and directly behind the platform, with a support about him; the movable platform being on the same plane with the frame-work at the side of the discharge, and at the same time about two inches above the stubble. With the above introduction, and the diagrams to follow, together with those in this number of the Genesee Farmer, the public will have before them several machines from which to make a selection before purchasing for the coming season, and at the same time know what they are purchasing, much better than to be guided alone by impracticably written and published reports of committees of public trials, and be enabled to purchase only such articles as have their practical as well as theoretical merits plainly pointed out, or if not so pointed, to purchase only of responsible manufacturers, who are willing to back their machines by their reputation and capital.

For further particulars concerning the Reaper and Mower above described, address

HORACE L. EMERY, Albany, N. Y.

March, 1853.

E. D. HALLOCK, No. 50 State street, Rochester, is agent for Western New York, and will have one put up in running order in his store. Those in his vicinity wishing to obtain a Reaper and Mower, are requested to call and examine the merits of the above machine before purchasing elsewhere.

Patent Mammoth Premium Corn-Stalk, Hay, and Straw Cutters & Grinders.

CAPABLE of preparing 100 bushels of Corn-stalks, or One Ton of Hay or Straw, per hour, and reducing the largest Corn-stalks to the consistency of Cut Straw, avoiding the necessity of steaming or soaking, and saving 80 per cent. over the common way of feeding fodder. Horses and Cattle will do as well on fodder prepared this way, as on the best hay. The First Premiums have been awarded at every exhibition where they have been exhibited for competition. It can be worked by hand or power, without additional cost. The inventor will forfeit \$50, after an impartial trial, when this Machine is used in preparing good fodder, if it does not prove to save 80 per cent. over the common way of feeding fodder, and it may be fed in the same condition as the machine leaves it, without meal or soaking. Cows fed on fodder produce sweeter butter. Over 900 of these Machines have been sold. Price—\$35.

State and County Rights for sale.

Gilbert's Excelsior Thresher and Cleaner,

Accomplishing more, with the same power, than any other Machine. It can be driven with two horses.

Price—\$200 and upwards, according to size, Horse Power included. Apply post paid to J. G. GILBERT,
[24] 216 Pearl st., New York.

Manures.

FERTILIZERS of all kinds for sale by the subscribers. Improved Superphosphate of Lime, Superphosphate of Lime—both the above made after the recipe of Prof. Mapes. Peruvian Guano, Sulphuric Acid, Bone-dust, Potash Sparlings, Poudrette, Plaster of Paris, &c. &c.

GEO. H. BARR & CO.
53 Cortland St., New York.

Northern N. Y. Live Stock Insurance Company, Plattsburgh, N. Y. For terms, please apply to agents of the Company.

PRINCE & CO.'S IMPROVED PATENT MELODEON.

GEO. A. PRINCE & Co., MANUFACTURERS, 200 MAIN ST., BUFFALO, N. Y.
WHOLESALE DEPOT, - - - - - 87 FULTON STREET, NEW YORK.

For the convenience of MUSIC DEALERS in all parts of the United States, we have made an arrangement with the following firms, who will supply the TRADE at our regular Factory prices:
GEO. P. REED & CO., 17 Tremont Row, Boston, Mass. COLBURN & FIELD, 154 Main St., Cincinnati, O.
BALMER & WEBER, 58 Fourth St., St. Louis, Mo.

General Agent for New York City,
Wm. HALL & SON, - - No. 239 Broadway, opposite the Park.

The subscribers take this method of calling the attention of the public to a new Musical Instrument, as yet but little known to the musical world, viz: Prince and Co.'s Improved Patent Melodeon.

It is now about five years since these instruments were first offered for sale, and during that time the increased demand for them has been unparalleled. One hundred and fifty workmen are constantly employed in the manufacture and finishing from 75 to 80 instruments per week, and as yet they have not been able to supply the demands promptly.

For the benefit of those residing at a distance, and consequently unable to inspect the Melodeon before purchasing, we will endeavor to give a short description of the instrument.

The cases are made of Rosewood, and are as handsomely finished as any piano forte. The keyboard is precisely the same as the piano or organ, and the tone (which is very beautiful) closely resembles that of the Flute Stop of the Organ—the notes speak the instant the keys are touched, and will admit of the performance of as rapid passages as the Piano. The Pedal on the left is intended for a swell, and with which the most beautiful effects can be produced. The Pedal on the right supplies the wind, and works so easily that a child can manage it without any exertion. The Bellows, (which is something entirely new, and for which a Patent was granted in December, 1846,) is a reversed or exhaustion Bellows, and it is, in a measure, which produces the peculiar tone. The instrument can be immediately made portable without detaching any part, the bellows receding into the body of the instrument, and the legs folding under and springing to their places, leaves the whole in a compact form. Each instrument has a packing case secured by lock and key.

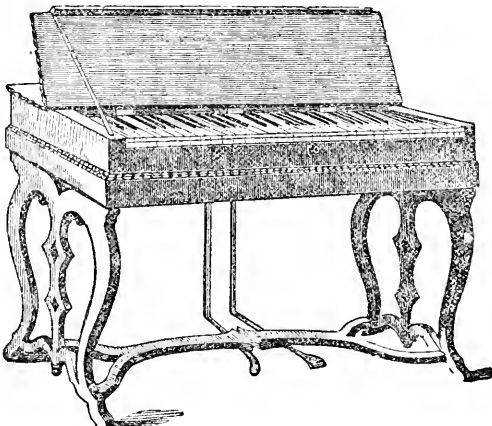
The volume of tone is equal to that of a small organ, and by means of the swell may be increased or diminished at the pleasure of the performer; it is sufficiently loud for small churches, and is well calculated for a parlor instrument. Hundreds have examined them, and all have been loud in their praise; and the best evidence of their merit is their rapid sale. But it is a new instrument—a new invention, and is yet but little known in the musical world, and it is for this reason that we call to the attention of all lovers of Music, believing that there are thousands who would lose no time in securing one, were they aware of the existence of such an instrument, and the low price at which it could be obtained.

The following letter from Lowell Mason, Boston, to G. P. Reed, we are permitted to use:

Mr. GEO. P. REED, No. 17 Tremont Row, Boston, Mass.
Dear Sir—At your request I have examined one of the Melodeons manufactured by Messrs. Geo. A. Prince & Co., of Buffalo. I think the instrument in all respects equal, and

in some respects superior, to any others of similar kind which I have seen, and in particular with respect to quality of tone and promptness of touch, or action of the reeds, by which quick passages may be performed with certain and distinct articulation of tones. An instrument of this kind is the best substitute for an Organ in Church Music with which I am acquainted. LOWELL MASON.

Boston, Mass., Sept. 26, 1849.



Five Octave—Portable. Price, \$75.

PRICES.

FOUR OCTAVE MELODEON, extending from C to C,.....	\$45 00
FOUR AND A HALF OCTAVE MELODEON, extending from C to F,.....	65 00
FIVE OCTAVE MELODEON, extending from F to F,.....	75 00
LARGE FIVE OCTAVE MELODEON—Piano style,.....	100 00
LARGE FIVE OCTAVE MELODEON—Piano style with two sets of reeds, tuned in octaves,....	150 00

Just published, "PRINCE'S COMPLETE INSTRUCTOR FOR THE IMPROVED MELODEON; to which is added favorite Airs, Voluntaries, and Chants, arranged expressly for this Instrument. Price 75 Cents.

CAUTION.—In consequence of the great success which has attended the introduction of Prince & Co.'s Melodeons, numerous imitations have sprung up in different parts of the country—offering instruments under the same name, and in outward appearance resembling them. We would therefore caution the public to be on their guard, and examine those made by Prince & Co. before purchasing. Many improvements applied *exclusively our own*, and being the original manufacturers, our experience has enabled us to produce Instruments which a discerning public have unanimously pronounced superior to any thing of the kind hitherto manufactured. Many of the most eminent Musicians of the cities of New York and Boston have voluntarily given testimonials as to the high character of our Instruments, which can be seen on application.

All orders from a distance will be promptly attended to, and a written guaranty of their durability will be given if required.

GEO. A. PRINCE & CO.

THE WATER CURE JOURNAL.—A New Volume.—Now is the time to subscribe.—Published monthly, in a beautiful quarto. Illustrated with engravings, exhibiting the Structure, Anatomy, and Physiology of the Human Body, with familiar instructions to learners. It is emphatically a Journal of Health, designed to be a complete Family Guide in all diseases.

TERMS.—Only One Dollar a Year, in Advance. Address, post-paid, FOWLEES AND WELLS, Clinton Hall, No. 131 Nassau Street, New York.

"The Water Cure Journal holds a high rank in the science of health, always ready, straightforward and plain spoken, it unfolds the laws of our physical nature without any pretensions to the technicalities of science, but in a form as attractive and refreshing as the sparkling element of which it treats."—*New York Tribune*.

THE ILLUSTRATED AMERICAN PNEUMOLOGICAL JOURNAL.—Devoted to Pnerology, Mechanism, Education, Agriculture, the Natural Sciences, and General Intelligence, profusely illustrated with Engravings. Every family, and especially all young men and women, should have a copy. Published monthly at One Dollar a year. All letters should be post-paid, and directed to FOWLEES AND WELLS, Clinton Hall, No. 131 Nassau-st., New York.

Young men about launching forth upon the activities of life, and anxious to start right, and understand their course, will find this JOURNAL a friend and monitor, to encourage them in virtue, shield them from vice, and to prepare them for usefulness and success in life. The various occupations will be discussed in the light of Pnerology and Physiology, so that every one may know in what pursuit he would be most likely to succeed.—PUBLISHERS, July, 1852—41.

AGRICULTURAL.

EVERY FARMER SHOULD OWN

Cole's American Veterinarian: A Treatise on the Diseases of Domestic Animals. By S. W. COLE. In one volume, 18 mo., with plates, sheep. Price,..... 50
The best work of the kind ever issued from the American Press. 34,000 copies have been published.

Cole's American Fruit Book. By S. W. COLE, author of the American Veterinarian. In one volume, 18 mo., numerous plates, full sheep. Price,..... 50
This is undoubtedly one of the most valuable works on the subject ever published in this country. 18,000 copies published.

Schenck's Kitchen Gardener's Text Book: Containing full and practical directions for the formation and management of the Kitchen Garden. By PETER A. SCHENCK. In one volume, 18 mo., numerous plates, sheep. Price,..... 50

Breck's Book of Flowers. A thorough work, with full directions for the cultivation of a Flower Garden, in which is also described all the various Trees, Shrubs, and Plants, for ornamental purposes. By JOSEPH BRECK, Seedsman and Florist. In one volume, 12 mo., cloth. Price,..... 75

Treatise on the Construction, Heating, and Ventilation of Hot Houses. By R. B. LEACHES, Scotch Garden Architect. 8 vo., with a large number of Engravings, Plans, Drawings, Elevations, &c., &c., cloth. Price,..... 1 00

The only work on this subject ever published in America. It is highly recommended by Prof. Silliman, and other scientific gentlemen.

The American Fowl Breeder. Price,..... 25
Published by JOHN P. JEWETT & CO., Nos. 17 and 19 Cornhill, Boston.

For sale by all booksellers. [5-41]

Superphosphate of Lime,

IN BAGS and Barrels, made by C. B. DE BURG, with full directions for use,—warranted a pure and genuine article— for sale by GEO. DAVENPORT, No. 5 Commercial, corner of Chatham street, BOSTON, Agent for the manufacturer.

Also, for sale, Ground Bone, Bone Dust, Burnt Bone, Guano, and Grass Seeds, of reliable quality. [4-11]

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THE GENESEE FARMER,

A MONTHLY JOURNAL OF

AGRICULTURE AND HORTICULTURE,

ILLUSTRATED WITH NUMEROUS ENGRAVINGS OF Farm Buildings, Domestic Animals, Implements, &c.

VOLUME XIV, FOR 1853.

DANIEL LEE, JAMES VICK, Jr., & JOSEPH HARRIS, EDITORS.

P. BARRY, Conductor of Horticultural Department.

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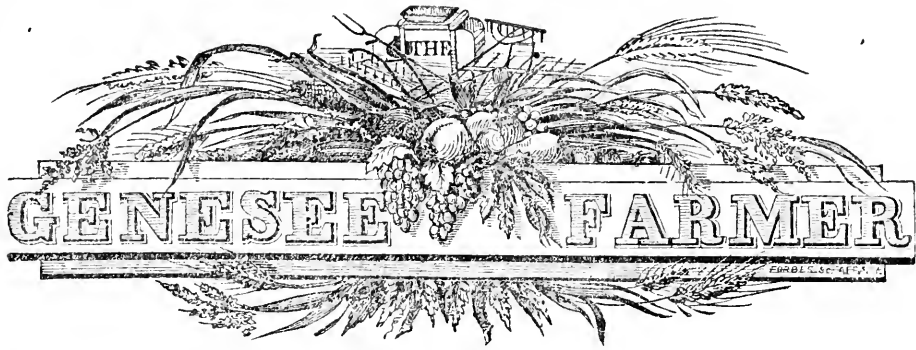
November, 1852.

Rochester, N. Y.

POSTAGE LAW.—By the new Postage Law, which took effect on the 1st of September last, the postage on the *Genesee Farmer* for one year is as follows,—when paid quarterly in advance:

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THE FARM AS A MANUFACTORY.

NUMBER FOUR.

IN the last number we considered the effect of a judicious system of rotation on the inorganic matter of the soil. This inorganic matter consists of ten different elements. It will therefore be necessary, for a right understanding of the subject, to examine the effect of cultivation on the separate elements of which soils are made up, and which compose the inorganic matter of all agricultural plants and animals. It was stated that a crop of wheat and straw, of 30 bushels per acre, contained 144 lbs. of inorganic matter. This 144 lbs. of ash is composed, in round numbers, of the following substances:

	<i>In Grain.</i>	<i>In Straw, Chaff, &c.</i>
Silica.....	1	83
Phosphoric acid.....	12	7
Lime.....	1	5
Magnesia.....	3	4
Potash.....	8	11
Soda.....	0½	1
Sulphuric acid.....	—	7
	25½	118

The phosphoric acid and potash amounts to four-fifths of the whole mineral matter removed in the grain. The silica, sulphuric acid, lime, potash, &c., contained in the straw, need not divert our attention, as they are all retained on the farm. In maize, barley, and oats, the same fact is observed—nearly all the mineral matter contained in the grain is phosphoric acid and potash, while a very large quantity of silica, sulphuric acid, lime, potash, &c., is contained in the straw, stalks, cobs, &c., but which is also retained on the farm. Of the 198 lbs. of mineral matter in a ton of dry clover, we have seen that not more than 5 lbs. is necessarily lost in passing through the animal. This 5 lbs. is principally phosphoric acid, lime, and potash; four-fifths, we believe, is phosphate of lime. In good common farming, then, the only minerals that are removed from the farm to any great extent, are phosphoric acid and potash, and much more phosphoric acid is removed than potash.

Although many thousand dollars and much valuable time have been spent in soil analyses, we are yet, nevertheless, grossly ignorant of the composition of average wheat growing soils. In by far the largest proportion of analyses published, the phosphoric acid is left out. Thus, in the "Agricultural Survey of the County of Madison," in the *N. Y. State Trans. for 1851*, there are given thirty-one analyses of soils, in thirty of which the quantity of phosphoric acid is not determined. It is so in other cases we could mention. It is not easy to ascertain the quantity of phosphoric acid in a soil, or in any other aluminous substance. We have worked a whole week in trying to determine the phosphoric acid in a soil, and could not rely on the analysis when done; and

have seen a far abler chemist labor for a longer period, with a like result. Phosphoric acid and potash are the two most difficult substances to determine in an inorganic analysis; and without an accurate quantitative determination of these, a soil analysis is of no value. We can not, then, learn much from soil analyses as they are at present found in our publications. From what we do know, however, we may safely conclude that potash is more plentiful in most soils than phosphoric acid; and we have seen that in the grain of wheat, maize, barley, oats, and more especially in the bones and flesh of animals, phosphoric acid is exported from the farm in greater quantity than is potash. It follows that phosphoric acid will be sooner deficient in our soils than potash, and therefore sooner than any other inorganic constituent of plants. If our premises are right, it also follows that an ordinary soil in common good practice can not be exhausted, or even impoverished, of any inorganic substance except phosphoric acid, unless indeed phosphoric acid be artificially supplied; for plants will not grow at all unless every one of their constituent elements are present in the soil: and as phosphoric acid is *first* exhausted, there can be no further removal of potash, or any other substance, by ordinary crops after such exhaustion.

We have shown, then, that in consequence of the destruction of ammonia by the growth of cereals, ammonia is exhausted sooner than any other organic substance; and of inorganic substances, phosphoric acid is the only substance that can be exhausted from the soil without the aid of artificial manures containing phosphoric acid in large quantity. If a soil once produced good crops of wheat, and now refuses to do so, it must be owing either to a deficiency of ammonia or of phosphoric acid. On many soils in Western New York, where fifteen bushels per acre is an average yield of wheat, we generally obtain two tons of dry clover per acre after the wheat. According to Prof. EMMONS, this clover would contain at least 30 lbs. of phosphoric acid, or sufficient for a crop of wheat and straw of fifty bushels per acre. It is plain, then, that in such cases the reason why we do not get a larger crop of wheat is not owing to a deficiency of phosphoric acid in the soil, and consequently of no other *mineral* ingredient, but to a want of ammonia.

There are many soils, however, that will not produce good crops of red clover, peas, beans, &c. In such cases the soil is probably deficient of phosphoric acid. If the deficiency is caused by the *non-availability* of the phosphoric acid and not to its actual exhaustion, rest and summer-fallow, by the disintegrating influence of the atmosphere, will for some time supply it. If none exists in a latent condition, it must be supplied artificially. In this there is no difficulty except a pecuniary one. There is an immense quantity of phosphoric acid existing in several mineral deposits in various parts of the United States. This can be rendered soluble and available by admixture with sulphuric acid. Animal charcoal, bones, and Mexican and other guano, also contain large quantities of phosphoric acid.

The great question, Will it pay to use these? can alone be determined by each individual farmer and gardener for himself. It is absurd to say that their application will be profitable in all cases. In many of the new States there is plenty of poor land that will not produce good crops without manuring; but does any one suppose that it would pay to apply guano or superphosphate of lime on such land to corn which, raised on the fertile soil around, can be sold for 25 cents per bushel. If all land was naturally poor or impoverished by cultivation, and we had, like Great Britain, but a small island, and not a boundless continent, we might, if judicious, always use natural and artificial manures with profit. But this is not the case. In producing wheat and corn, as in raising and fattening stock, the poor soil must compete with the rich; and the economy of its cultivation depends on its location and the price its products command. There is a connection between the cost of manure and the price obtained for the crop, which is not sufficiently taken into account by those who advocate the use of artificial manures.

They think that because good Peruvian guano is a splendid manure for wheat, and superphosphate of lime a first rate manure for turnips, it must always pay to use them. It is not so. Corn is perhaps the best food in the world to fatten hogs; yet with corn at 50 cents per bushel, and pork at \$3 per hundred, pork-making is not profitable. So with wheat at a dollar and corn at 50 cents per bushel, an application of guano or superphosphate at 2½ cents per lb. we believe will be found a poor investment. On the other hand, if beef is worth 18 cents per lb., as has been the case in Philadelphia for some time past, nothing could pay better than to raise large crops of ruta бага or mangel wurzel with superphosphate of lime and guano, and feed them to fattening cattle on the farm. Most of our esculents which, from the large amount of water they contain, can not be sent from the distant fertile soil to the large Atlantic cities, can be raised with a profit by the use of artificial fertilizers. An intelligent agriculturist will be able to decide, in most cases, to what crops he can afford to return to the soil those indispensable elements which a miserable system of tillage may have removed. It may not pay to supply the required ammonia and phosphates to an impoverished soil by guano (of which a good sample should contain 18 per cent. ammonia and 25 per cent. phosphates) as a direct manure for wheat, neither would it pay to use superphosphate of lime at 2½ cents per lb. for such a purpose; yet if superphosphate could be purchased at a reasonable price, or the farmer could make it himself from bone-dust, he could supply his soil with the lacking phosphates, and, by applying them to turnips or clover, get good crops, which would supply the soil with ammonia derived from the atmosphere.—J. H.

UNDERDRAINING.

NUMBER ONE.

WERE we asked to name any single operation that would most improve American agriculture, we should unhesitatingly answer, thorough underdraining. "That," says one, "is a strange idea; my farm, and most of the farms I am acquainted with, suffer more or less from drouth every year, and I should prefer *more* rather than *less* water on my farm, especially on the grass land." That, my good sir, is precisely what underdraining will do for you. It will remove all excess of water in the fall, winter, and early spring, when the plants need but little; and in the summer time, when plants need large quantities of water, and the undrained soil is very dry, it will make the soil quite moist and supply the plants with sufficient water. "That," you say, "is *contradictory*; and however plausible it may be in theory, I guess it will not work in practice." In that you are wrong. In this, as in most true agricultural theories, the theory has been induced from practice. Every farmer who has tried underdraining, knows, whether he can understand the cause or not, that his drained land is much drier in a wet time, and more humid in a dry time, than his undrained land, and that it will stand a drouth very much better; in fact, that drouths seldom affect his well drained land. Let us examine this a little.

If you take a common sponge, and dip one end into a basin of water, the whole sponge will become thoroughly saturated, the water rising very far above its own level. If you take a narrow glass tube, open at both ends, and plunge one end into water, you will observe the water rise, contrary to the law of gravitation, much higher in the tube than the external surface of the water. Dr. Hook, when experimenting on this subject, made glass tubes so fine that the water rose in them twenty-one inches above the level of the water in the vessel. The law by which it rises is called capillary attraction, and is explained thus: the particles of water have a stronger affinity for the glass than for

other particles of water, and consequently leave them and ascend the glass. The height to which they will ascend is probably in the inverse ratio of the diameter of the tube.

When a soil, especially a retentive one, is underdrained, the water as it percolates through it leaves innumerable small pores; it becomes like a sponge—a reticulated mass of fine tubes. These tubes, when the surface is wetter than the subsoil, carry down the water to the drains below; and when the surface is dryer than the subsoil, as it is in a drouth, these tubes carry up the water to the roots of plants. Underdraining is not built on this theory, but the theory is founded on the practical results of underdraining, and will the more commend itself to practical farmers.

Plants can take their food only in a state of dilute solution. They can not live and grow without a constant supply of fresh water. Stagnant water is exceedingly deleterious; no fact is better demonstrated than that agricultural plants can not thrive, however well manured, so long as their roots are surrounded with stagnant water. The necessity for underdraining rests on these three facts. Not only does underdraining remove all excess of water, and supply it when deficient, but it equalizes the temperature of the soil. In the spring and fall, when a warm soil is so much needed for the germination and maturation of seeds, the thermometer shows that an underdrained soil is several degrees warmer than one that is not drained; while in very hot weather, the case is exactly the reverse of this. It is a well known fact that vegetation starts much earlier in the spring, and continues later in the fall, on a drained than on an undrained soil.

But beside the beneficial mechanical effect on the soil, underdraining has great chemical action. The removal of stagnant water and the free admission of air in its stead, accelerates the disintegration of minerals as well as the decomposition of organic matter in the soil, rendering them both available as food for plants. Again, the rain, as it falls and filters through a well drained, loamy soil, carries to the plants one of the most needed and expensive of all the constituents of cereal crops. Our readers need not be told that we mean ammonia. In our article on the Plowing in of Green Crops, in the June number of 1852, will be found some of our reasons for thinking ammonia the most valuable and necessary ingredient in all wheat soils. The rain water which falls on an acre of land in a year, is estimated to contain over 100 lbs. of ammonia, or sufficient for the growth of 17 bushels of wheat. The recent experiments of WAY and THOMPSON have shown that when ammonia is filtered through a soil containing a good porportion of clay, the ammonia is retained in the soil, and the water passes through free from it. Does this throw no light on the *cause* of the increased crops following thorough underdraining? The other *causes* we have mentioned are merely concomitants. It is well known that mechanical texture of soil, moisture, heat, electricity, and sunshine, indispensable as they are, will not grow crops unless the required constituents of plants are present in the soil in proper quantity and quality. Does it throw no light on the beneficial effects of summer-fallow on heavy clays. To our mind it gives a satisfactory explanation to these questions that is consistent with experience and well established scientific principles. It is simply, that the ammonia contained in rain water is retained by the soil as the water slowly percolates through it to the drains beneath. In the case of a summer-fallow, the constant plowing, dragging, &c., divides the particles of the soil, for the first few inches in depth, so fine that they are capable of retaining all the ammonia brought to the soil during the year on which it is summer-fallowed. This ammonia it retains for the succeeding wheat crop. But even in this case, if the land needs draining, (and what land that should be summer-fallowed does not?) the full benefit is not obtained; all the rain which falls in the spring, autumn, and winter, when the soil is fully saturated, passes off in surface water, the ammonia it contains along with it, together with a considerable quantity of matter taken from the soil in mechanical solution.

The *cost* of underdraining is the most potent argument against its adoption. Thirty dollars is considerable money to invest on an acre of land; but it must be remembered

that it is a *permanent* investment—when once well done it will last a century or more. It is not like laying out \$7 per acre in guano or other manure, which lasts but for one year, or two at most. It is a perpetual means of obtaining increased crops. The 100 lbs. of ammonia contained in the rain which falls on an acre per annum, can not be purchased in guano, its cheapest artificial source, for less than \$15. Greater part of this is lost on an undrained soil, while on one that is well underdrained the whole of it is or may be retained. The expense of cultivation is less on the drained than the undrained land. You can plow it earlier in the spring and later in the fall; and after heavy rains, when the land not drained is so wet that man nor beast can go on it, the drained soil will be in fine condition to work. The whole of the *increase in crops* obtained from draining must be considered *clear profit*. We believe *one-third* increase to be a low estimate; and as this one-third of the entire produce of the farm is clear profit, it will pay a high interest on the thirty dollars invested in underdraining. Any farm which from its location is worth \$40 to \$100 per acre, if it needs draining, can not fail to pay a handsome interest for money judiciously laid out in underdraining.

The effect of thorough drainage on the climate of a country, is a subject too extensive and important to be discussed at this time. That it has a marked effect on climate, can not be doubted. Prior to the general adoption of underdraining in England, the wheat crop was generally affected with mildew, rust, smut, and various insects, to such an extent that the crop was quite uncertain; with the introduction of underdraining these blighting effects were removed, while ague, which was common before, is wholly unknown now.

Shade trees and forests, like large bodies of water, are well known to be great moderators of cold in winter and heat in summer. The disappearance of such vast forests has seriously affected the climate of this continent; hence peaches and other fruits are not those certain crops they were twenty years ago. The climatic equilibrium has been disturbed, and must be restored. We must cease to cut down so recklessly the noble forests, and at the same time must plant shade trees. This will have some effect; but we submit, that thorough underdraining will be found the best and most economical means of equalizing the climate, removing the insects, &c., which make such fearful devastation with the crops, and of improving our national agriculture.—J. H.

WHEAT-CULTURE.

SUCH of our readers as grow wheat, are now generally engaged in preparing the land for seed. Often as we have, in the earlier volumes of this journal, urged the importance of cultivating the land in the most thorough manner, as others have likewise done, yet, among the millions that raise wheat, *bad* tillage is still the common and injurious practice of American farmers. Slovenly plowing and defective harrowing were learned as a trade in early youth, when land was much cheaper, and richer in virgin fertility than it now is; and the bad habits thus acquired are followed, like the chewing and smoking of tobacco, in all after life, from the mere force of custom alone. Many a good resolution to reform ends in a feeble and fruitless attempt to break the ties that bind one to follies and practices which had their origin in circumstances that no longer exist. If ever excusable, where land was plenty, labor scarce, and the implements of husbandry few and worthless in comparison with those now possessed, we at this time look in vain for anything to justify the continuance of the practice of growing so much cockle, chess or cheat, red root, garlic, and other foul weeds and pests, in fields of wheat. In the old districts of Maryland and Virginia, where we have spent the recent harvest, and raised a small crop of eleven acres of wheat, in the District of Columbia, the foulness of the land

and seed is so general as to amount to a public calamity. Now that guano is operating so favorably to encourage the cultivation of this great staple, it is still more important that the whole art and science of wheat-growing be universally studied and understood.

Next to the thorough cultivation of the soil and timely seeding, the use of none but perfectly clean seed should command particular attention. If one can not obtain pure seed for all the land which he intends to sow, let him at least seed one acre of the cleanest field he has with hand-picked wheat (we pick it in the bundle before threshing) for his future seed. To clean land on which garlic has matured and scattered its seed for a century, is no slight task; but we have taken it in hand, and with what success future years must determine.

So far as the wheat itself is concerned, we never saw finer in Western New York than is raised in the District of Columbia this year. *White Flint* is more cultivated than any other kind, although white and red, bald and bearded, with a liberal sprinkling of rye, are often mixed. Carelessness appears to be the rule, and clean cultivation the exception, in the different States that we have visited. Can no improvement in wheat-culture be attained, now that agricultural papers have become as plenty as blackberries? Will not some agricultural society step forward and signalize itself by perfecting the production of *one* valuable crop? It needs more system in manuring the land, whether by turning in clover, by using guano, stable and yard manure, ashes, lime, bone-dust, poudrette, or other fertilizers. Make the soil right in reference to its constituent elements, secure perfect pulverization, and the battle is more than half won. What the earth lacks in some places, to adapt it to wheat-culture, which it contains in others, is still a debatable point. Some say ammonia, some lime and phosphoric acid, and some potash and soda. It must be confessed that the subject is involved in a good deal of obscurity, and that no proper effort has ever been made in this country to investigate and elucidate the difficulties. The fact, however, is conceded, that limestone regions are better adapted to the growth of wheat than others. Thus, the limestone county of Monroe, through which runs the Genesee river, produces thirty times more wheat than the whole State of Massachusetts, which has very little limestone soil. Why should not the Connecticut valley grow wheat equal to the valley of the Genesee? Who can answer this question? At the last census, Massachusetts returned 2,133,436 acres of improved land, and only 31,221 bushels of wheat. Monroe county is not large, but her wheat crop usually exceeds 1,200,000 bushels. There are single towns in Western New York that produce twice as much wheat as all Massachusetts. It has long been a matter of surprize to us that while New England contains so many able men, no one should not have made wheat soils a special study. With 11,140,564 acres of improved land, the six New England States grow only 1,081,874 bushels of wheat; while the little State of Maryland, with about one-fifth the land under cultivation, produces 4,494,680 bushels. What natural advantage over New England has Maryland for the production of this cereal? Even tobacco and corn-growing Virginia, whose impoverished "old fields" have long been the subject of remark, produces more bushels of wheat than she has acres of improved land. Our enterprising friends of the northern and eastern Atlantic States should not be surpassed by little Delaware, nor by Maryland and Virginia, in wheat-growing. North Carolina raises twice as much wheat as all New England; and even South Carolina is about even in that regard. The critical study of wheat-culture in the old thirteen States is full of instruction; and we respectfully commend it to the attention of our readers. The business has now reached a peculiar crisis in the States named; for the *raw material* for making the crop has to be in part supplied to the land. What is this lacking material? Experience during six thousand years, since "CAIN was a tiller of the ground," has failed to inform us. Will American farmers be content to wait six thousand years longer for art to teach what art alone never knew, and never can know?

Much is said about diffusing knowledge in agriculture, and very little about increasing it, by new additions from original researches. Old stories are told over a thousand times, and that is called *enlightening* the farming community! Who can point to one acre of land that has been devoted to the development of new truths in tillage or husbandry, for five or ten years, in this vast Republic? In wheat-growing, what have the few isolated experiments amounted to, as performed under the auspices of any agricultural society? Which among them all has encouraged the investigation of the facts as to how much of the substance of the soil (its mold and minerals) is necessarily consumed by tillage and the growth of the plants, in making twenty bushels of wheat? What part of the crop, including straw and grain, do water and air really constitute? What has ever been done in the United States to settle this important question? The matter that really forms perfect wheat plants all comes from the atmosphere or the soil. From the latter, how much is wasted by the decomposition of organic substances whose elements rise into the air like the exhalations from a dung heap? How much of dissolved mould and minerals passes deep into the earth, to appear again as found in springs, swamps, and creeks? Nature never plows, nor harrows, nor hoes the ground to produce her most luxuriant vegetables. Hence she never impoverishes the soil. Can man say as much? Tillage has yet to be investigated before wheat-growing can be at all understood. We have no doubt that the cost of production, take twenty years together, may be reduced one-half. To supply the lacking ingredients at the minimum cost, soils have need of far more critical analyses, not of a few grains, but of pounds, skillfully leached for months, to ascertain what rains are capable of dissolving out of them. Nature's admirable processes for the feeding of plants must be faithfully imitated and studied. Agricultural science is a deep profession, or none at all. To make it the appendix of other schools, is to injure not benefit this infant profession. It must be built up on its own bottom, having a broad and solid foundation, or forever remain a mere empirical art. Agriculture is not chemistry, nor geology, nor botany, nor physiology.

ON THE COMPARATIVE FATTENING PROPERTIES OF SOME OF THE MOST IMPORTANT ENGLISH BREEDS OF SHEEP.—The united labors of many celebrated breeders have brought the sheep of Great Britain to a high state of perfection, and although each particular breed is supposed by its advocates to possess certain properties superior to other breeds, it is evident these opinions are not founded upon any sound basis of facts. It is true, numerous experiments have been tried upon the feeding properties of the different breeds of sheep; and these experiments have been recorded from time to time in the various publications devoted to agriculture. It appeared, however, to the writer, that these experiments were conducted upon far too small a scale, and were not carried out with sufficient attention to insure accuracy. In conducting experiments upon animals, it is of the first importance that individual peculiarities should be neutralized by numbers. It is not unusual to find two sheep of the same size and breed, fed upon the same food, under like circumstances, one of which shall increase twice as fast as the other. By experimenting upon a sufficient number of sheep, these peculiarities are of no moment, and the averages may be safely taken as the truth. In the experiments about to be recorded, 40 to 50 sheep of each breed were taken for experiment. The duration of the experiment was five to six months, and although for want of sufficient shed room the experiments extended over three years, still great care was taken to select food of the same quality, and to commence and end the experiment at the same periods of the year.

It is not my intention to give more than a few of the most important results. It often happens that the conclusions of many elaborate and laborious experiments can be summed up in a few words or figures, and such is the case here. When we know how much food it requires to produce a given increase of weight and the value of such increase, we are in possession of all the practical knowledge to enable an agriculturist to select that breed which shall fat the most profitably. I propose, therefore, after having briefly alluded to the more prominent characters of the various breeds of sheep, and the mode of conducting the experiments, to select such results as I think may be useful,

referring to the *Journal of the Royal Agricultural Society of England*, where the experiments are fully given, for further particulars.

The Sussex Breed.—This breed, which was brought to such perfection by the celebrated ELLMAN, has its origin in the county of Sussex, on the southeast coast of England. It is one of the smallest breeds; has a short and very compact wool; the quality of its meat is excellent, commanding the highest price in the London market. It is capable of traveling a long distance for its food, and thrives upon downs and scanty pastures, where large sheep would starve. These properties make the Sussex sheep valuable upon large, open tracts of down.

The Hampshire Down.—This breed, which derives its name from the county of Hampshire, situated in the southwest of England, is a short-wooled sheep, resembling the Sussex, but very much larger and coarser in appearance. The head is especially large and ugly, and the whole animal possesses none of the neatness and symmetry belonging to the Sussex sheep. In point of quality, the meat is slightly inferior to the Sussex sheep, and in the London market bears rather a lower price. Among farmers, the Hampshire sheep have more advocates than the Sussex—the remark generally made being, The Hampshires give more mutton and wool. Leaving out all estimate of the difference in the food consumed, there can be no doubt that the Hampshire sheep, from his superior size, is worth, in the market, a larger sum than the Sussex.

Leicester.—This celebrated breed of sheep is most extensively kept throughout the midland counties of England. It is a small sheep, producing a large quantity of long wool, and possessing great aptitude to fatten when supplied with abundance of good food.

Cotswold, or Gloucester.—This is one of the largest breeds of sheep. It has its origin in the county of Gloucester. The wool is very long and of good quality, and although the quality of the mutton is not considered first rate, it fattens very rapidly, and has been called, with some degree of truth, the "poor man's sheep," as the mutton can be sold at a low price.

There are several other breeds of sheep which, for various reasons, have not been placed under experiment. It was, however, thought advisable to try a set of experiments upon one of the most celebrated cross breeds—namely, the cross between the South Down and Leicester. This cross, which is generally attained by placing a Leicester ram with a Sussex ewe, is supposed to combine the advantages of both breeds. The use of this cross is greatly on the increase at the present time in England. All the lambs are usually fattened, as it is found that the half-bred ewe will not produce a progeny of equal value with the first cross.

With these brief remarks I will now proceed to state the mode in which the experiments were conducted. Letters were written to breeders of eminence, (those being generally selected who had obtained prizes for their sheep,) requesting them to select 50 wether sheep, born the same year, and representing fairly the breed required for the purpose of experiment. No limit was set upon price. The sheep were sent, about the month of September, to the farm, and they were kept there upon ordinary food until the middle of November. At this period the sheep were about nine months old, having been lambed about the February preceding. The experiment was conducted in a long shed, capable of holding 150 sheep. The sheep stood upon rafters or small planks about 2½ inches in width, having a space about one inch between each to permit the excrements to fall through. Each sheep was weighed separately at the commencement of the experiment, and again at the end of every four weeks. At the end of five or six months, the sheep being fat, one-half of each lot was sent to the London market alive, and the other half were killed at home, and the carcasses sent to the London market. By this method the live and dead weight of the several breeds were known, and many important particulars ascertained. The food of the sheep was oilcake, clover hay, and Swedish turnips. The first two foods were given in limited quantities, being one pound daily of each to the large breeds, and a proportionate quantity to the small breed. The Swedish turnips were cut by a machine and weighed; the sheep were permitted to eat as many as they pleased, the residue being weighed off daily. The relative size of the different breeds may be known by the following table:

TABLE I.—GIVING AVERAGE WEIGHT OF SHEEP AT BEGINNING OF EXPERIMENT.

	lbs.	ozs.
Cotswold,	119	13
Hampshire,	113	7
Leicester,	101	
Half-breed wethers,	95	
do. ewes,	91	
Sussex,	83	

The following tables give the average amount of food consumed by each sheep weekly, and the amount consumed by each 100 pounds live weight:

TABLE II—SHOWING AVERAGE AMOUNT OF FOOD CONSUMED BY EACH SHEEP WEEKLY.

	Oileake.		Hay.		Turnips.	
	lbs.	oz.	lbs.	oz.	lbs.	oz.
Cotswold,	8	1	6	14	113	4
Hampshire,	8		7		106	10
Leicester,	5	14	5	9½	83	12
Half-breed wethers,	5	14	5	9½	82	14½
do. ewes,	5	9½	5	4¾	78	
Sussex,	6	3	5	14	79	1

TABLE III—SHOWING AVERAGE AMOUNT OF FOOD CONSUMED BY 100 LBS. LIVE WEIGHT.

	Oileake.		Hay.		Turnips.	
	lbs.	oz.	lbs.	oz.	lbs.	oz.
Cotswold,	5	4¼	4	9¼	74	4
Hampshire,	5	6	4	12¾	71	7
Leicester,	4	12	4	10	70	
Half-breed wethers,	5		4	12	70	8
do. ewes,	5	3	4	12	70	
Sussex,	5	6	5	2	68	14

The second table is obtained by taking the average weight of the animals of each breed, and the actual food they consumed, and saying, If a sheep of any given weight consumes so much food, how much will be consumed by one hundred pounds? We learn from these tables, that, although sheep of different weights consume different proportions of food, yet that equal weights of sheep of all the different breeds consume *equal weights* of food; or, in other words, two Sussex sheep, weighing each 90 pounds, will consume the same amount of food as one Cotswold sheep, weighing 180 pounds. It will be remembered that, although the dry food was limited, the sheep were permitted to consume all the turnips they required; we may assume therefore, that they ceased to eat when the demands of the system were satisfied.

TABLE IV—SHOWING AMOUNT OF DRY FOOD CONSUMED BY EACH SHEEP WEEKLY.

Cotswold,	15.12
Hampshire,	14.09
Leicester,	14.12
Cross-breed wethers,	15.03
do. ewes,	15.03
Sussex,	14.09

By removing the water, the figures are brought still nearer together; and although there is a general impression among agriculturists that large sheep eat proportionally less than small sheep, it is evident that *equal weights of sheep consume equal amounts of food*.

We now proceed to the second and most important point connected with this investigation—namely, the *increase of weight obtained by the consumption of food*.

It may be considered a fact in agriculture, that the food consumed by any fattening animal is worth more than the increase of meat obtained by such food will sell for. It is not, perhaps, easy to prove this when sheep are fed upon grass and other foods having no money value in a market, but applied to any foods having a distinct money value, it will be found to be strictly correct. The profit of the feeder is derived partly from the meat and partly from the manure made by the animal. In order to determine which breed of sheep will be the most profitable to fatten, we have to determine how much food is consumed to produce a given increase, and the probable value of such increase.

TABLE V—GIVING THE AMOUNT OF FOOD CONSUMED TO PRODUCE 100 LBS. INCREASE, LIVE WEIGHT, OF EACH BREED.

	Oileake.		Hay.		Turnips.	
	lbs.	oz.	lbs.	oz.	lbs.	oz.
Cotswold,	259	12	219	1	3608	
Hampshire,	294		259	12	3941	
Leicester,	262	8	251		3759	
Half-breed wethers,	264		251		3725	
do. ewes,	263		250		3666	
Sussex,	314	4	304	8	4086	

It will be seen that, although every breed of sheep consumes an equal amount of food for equal weight, yet that they possess very different powers of converting a given amount of food into meat. The Cotswold sheep have consumed the smallest amount of food to produce 100 pounds of increase, and the Sussex the most: the difference is very considerable—54 lbs. oileake, 85 lbs. of hay, 478 lbs. of Swedes. Unless, then, the meat of the Sussex sheep commanded a price considerably higher than any other breed, it could not be a profitable breed to fatten. In the London market a Sussex

sheep will sell for one cent per pound more than a Cotswold, or any other long-wooled sheep. In the manufacturing districts of England, where the same difference in price does not exist, the Sussex sheep is not much fed. The comparative selling price of these breeds of sheep in the London market is as follows, taking the highest first: Sussex, Hampshire, Half-breed, Leicester, Cotswold; and it will be seen by reference to the last table, that the consumption of food to produce 100 pounds of increase is exactly in the inverse order of the selling price of the meat. The selection of any particular breed of sheep ought to have reference to the markets in the neighborhood of the farmer.

The following table gives the live and dead weight of the various breeds. The figures are obtained by killing 20 sheep of each breed—namely, 5 of those that have increased the most, 5 that have increased the least, and 10 of an average increase. The live weight is the weight of the sheep before they were fattened, and taken twenty-four hours before they were killed; and the dead or carcass weight was taken when the sheep were quite cold.

TABLE VI—SHOWING THE PROPORTION OF COLD CARCASS TO EACH 100 LBS. LIVE WEIGHT OF DIFFERENT BREEDS OF SHEEP, AND ALSO THE PROPORTION OF LOOSE FAT.

	Proportion of Carcass (cold) in 100 lbs. gross live weight.		Loose Fat in each 100 lbs. live weight.	
	<i>Lbs.</i>	<i>oz.</i>	<i>Lbs.</i>	<i>oz.</i>
Cotswold,	58	11	5	4
Hampshire,	56	12	7	
Leicester,	54	8	5	
Half-breed wethers,	55	4	5	11
do. ewes,	55		6	2
Sussex,	57		7	1

It will be seen that some considerable difference exists between the proportion of live and dead weights of the different breeds of sheep. This difference must, I think, be attributed more to a difference in the degree of fatness in the animals themselves, than to any peculiar distinction between the breeds. From a great number of sheep which have been slaughtered at Rothamsted, beginning with perfectly lean sheep and extending to sheep in an extreme state of fatness, it may be taken as correct to assume that the proportion of carcass to every 100 pounds live weight varies from 50 to 60 or even 63 per cent., according to the degree of fatness; the greater portion of sheep killed averaging, in this country, 54 or 55 per cent. The Leicester and Half-breed sheep were killed, I think, rather too soon, and, as far as I could judge, were not so fat as the other breeds. This point is of no especial importance to these experiments, which are to determine the absolute amount of increase obtained by the consumption of a given weight of food. The question of profit, although of the first importance to the farmer, cannot here be discussed, in more than very general terms, on account of my ignorance of the prices of cattle food, and meat in the United States. I have said that it might be considered a rule that no animal paid for his food. In all these experiments the increased value of the animal has been, as nearly as possible, sufficient to pay for the hay and oilcake consumed, leaving the turnips and attendance to be paid for by the increased value of the manure. Take the Cotswold breed, which produced more increase upon the food consumed than any other breed: to produce 100 lbs. increase they consumed 260 lbs. oilcake, 219 lbs. hay, 3608 lbs. turnips. Oilcake is worth \$2 per cwt.; hay, \$1. Cost of hay and oilcake, \$6.32. 100 lbs. of increase give 58 lbs. 11 oz. of dead weight, which, at 12 cents per lb., is \$7.04; leaving 72 cents above the cost of the purchased food. The same rule applied to the Sussex sheep, give \$7.92 as the price of the purchased food, and \$7.98 as the value of 57 lbs. of mutton at 14 cents. Here the increased amount of food consumed by the Sussex sheep is paid for by the difference of the selling price of the mutton—the Cotswold making 12 cents per lb. and the Sussex 14 cents.

To determine accurately the composition of the manure obtained from animals, is one of the most difficult subjects which a chemist can undertake; and although very extensive experiments have been carried on here for the purpose of investigating the subject, they are not yet in a satisfactory state; I shall, however, give an opinion respecting the value of the manure obtained by feeding sheep on oilcake and hay. The principle involved in feeding can be stated in a few words. Foods consist of certain compounds of carbon, such as oil, sugar, starch, wood, pectin, containing no nitrogen; certain compounds of carbon containing nitrogen; and a few salts. Leaving out the water, which amounts to as much as 92 per cent. in White Turnips, and about 12 to 15 in straw and other dry foods, the nitrogen in various foods ranges from 2 to 5 per cent.; in the grain crops 2 per cent. is about the average; in leguminous crops—peas, beans, lentils—it varies between 4 and 5 per cent.; in oilcake about 5. The salts or mineral matter varies from 2 to 7 per cent. In 1000

lbs. of dry food the compounds containing carbon and no nitrogen, commonly called non-nitrogenous substances, will vary from 640 to 850 lbs.; nitrogenous compounds from 130 to 300 lbs., yielding 20 to 50 lbs. of nitrogen, and mineral matter from 20 to 70 lbs. A certain portion of these substances are used by the animal to increase his own weight. In sheep and oxen, perhaps, every 8 or 10 lbs. of dry food consumed will give 1 lb. increase live weight; pigs, which receive food of a better quality, will increase 1 lb. for every 4 to 5 lbs. consumed. A considerable proportion of the food is converted into carbonic acid, and exhaled by the breath of the animal. Of 1000 lbs. of any food which enters into the mouth of the animal, not more than 200 is to be found in the excrements; these consist of the undigested parts of the food, woody fibres, salts of ammonia, and the mineral matter not taken up by the animal.

Experiments conducted upon this farm for the purpose of ascertaining how much nitrogen is converted into the flesh of the animal, prove that 100 lbs. increase live weight does not contain more than 2 to 3 lbs. The nitrogen, which is taken by the animal to make the increase, amounting from 17 up to 47 lbs, is converted, in its passage through the animal, into ammonia, every 14 lbs. forming 17 of ammonia, this ammonia being again employed in producing fresh vegetable matter; and here we obtain a glimpse of one of those beautiful laws by which the purity of the air is preserved. It has been calculated that at the present time above 7,000,000 tons of oxygen gas are converted into carbonic acid gas daily by the population, the animals, and the various processes of combustion. As all these processes have been increasing daily since man was created, the atmosphere would become more deteriorated, unless some compensation existed. Philosophers have shown us that it is the office of vegetation to restore the balance, that plants possess the wonderful property of separating carbon from its combination with oxygen gas, and restoring the latter in its pure state to the atmosphere, and they point to the great tracts of forest land in various parts of the world as the great sources of oxygen gas. To a thoughtful person it must, however, occur, that if the forests are the great sources from which oxygen gas is derived, two processes are going on at the same time, both of which tend to one result. The destruction of forests naturally and inevitably follows the increase of man and animals upon the earth; while, therefore, every day is adding to the amount of carbonic acid thrown into the atmosphere, the forests, which are supposed to be the great sources of oxygen gas, are becoming less and less in extent. The quantity of carbon fixed by vegetation on an acre of forest land has been ascertained by various chemists, and as they agree pretty well in the estimation, we may conclude that it will not be far from the truth to fix it at 1200 to 1500 lbs.

Experiments conducted upon this farm upon the growth of wheat for ten successive years, show that from 2500 to 3000 lbs. of carbon can be produced upon an acre by the supply of mineral salts and ammonia, substances which contain not a particle of carbon in their composition. However contradictory it may appear at first sight to suppose that the forest trees towering towards the sky, and exposing an immeasurable surface of leaves to catch every passing breath of air, should extract less carbon, and purify less air than the humble wheat plant, yet such is undoubtedly the case, and we must acknowledge the infinite wisdom of the Almighty who in the cereal crops not only provides food for man, but that man must, in producing that food, at the same time purify the air which he is hourly deteriorating. In the United States the same natural laws must produce the same effects as they have in Great Britain. Forests will disappear, and, as the population increases, land will become more valuable, and as a necessary sequence it will be better cultivated—instead of 14 or 16 bushels per acre, double that produce will be obtained, and consequently the plants on the same space of ground will purify a larger quantity of air. The greater portion of the carbon consumed by animals is either converted into carbonic acid by respiration, or into food for man, who also converts it into carbonic acid; the residue, consisting principally of salts of ammonia and mineral matter, are restored to the soil, and by their influence enable the plants to decompose fresh portions of carbonic acid.

When animals are fed upon food that has been purchased, and consequently is not grown upon the farm, a certain increased fertility may be expected in the succeeding crops; a certain sum may therefore be deducted from the cost of food and charged as manure. It is precisely similar to purchasing a certain quantity of guano, or any other fertilizer. Provided the elements of fertility are restored, it is immaterial whether they are supplied by the excrements of animals, or by salts manufactured artificially.

One of the great objects of chemical agriculture should be to furnish the farmer with tables of

equivalents, to enable him to decide at any given period in what manner he can obtain the elements he requires, at the lowest price, whether by purchasing artificial food, or by direct manures. J. B. LAWES.—*Rothamsted, Herts, England.*

TABLE VII—GIVING A SUMMARY OF SOME OF THE MOST IMPORTANT RESULTS OBTAINED IN FEEDING SHEEP.

Description of breed of Sheep.	Average am't of food consumed per head weekly.			Average amount of food consumed by each 100 lbs live weight weekly.			Average increase pr head weekly.	Average increase pr 100 lbs. live weight weekly.	Average weight of wool per head.	Average weight of wool per 100 lbs. live weight.
	Oilcake.	Hay.	Turnips.	Oilcake.	Hay.	Turnips.				
	<i>lbs. oz.</i>	<i>lbs. oz.</i>	<i>lbs. oz.</i>	<i>lbs. oz.</i>	<i>lbs. oz.</i>	<i>lbs. oz.</i>				
Cotswold.....	8 1	6 14	113 4	5 4 $\frac{1}{4}$	4 9 $\frac{1}{2}$	74 4	3 2 $\frac{1}{2}$	2 2	9 4 $\frac{1}{2}$	5 7
Hampshire.....	8	7	106 10	5 6	4 12 $\frac{3}{4}$	71 7	2 12	1 14	6 4	3 12
Leicester.....	5 14	5 9 $\frac{1}{2}$	83 12	4 12	4 8 $\frac{1}{2}$	67 12	2 1	1 10 $\frac{1}{2}$	8 2 $\frac{1}{2}$	6
Half-bred wethers	5 14	5 9 $\frac{1}{2}$	82 14 $\frac{1}{2}$	5 1 $\frac{1}{2}$	4 12 $\frac{1}{2}$	70 12 $\frac{1}{2}$	1 14	1 9 $\frac{1}{2}$	6 6 $\frac{1}{2}$	4 12
do. ewes, ..	5 9 $\frac{1}{2}$	5 4 $\frac{3}{4}$	78	4 7 $\frac{1}{2}$	4 11 $\frac{1}{2}$	69 5 $\frac{1}{2}$	1 13 $\frac{1}{2}$	1 9 $\frac{1}{2}$	7 3 $\frac{1}{2}$	5 12
Sussex.....	6 3	5 14	79 1	5 6	5 2	68 14	2 1 $\frac{1}{2}$	1 10 $\frac{1}{2}$	5 10	4 9

CURE FOR GLANDERS.—I have lately discovered a remedy to cure the glanders in a horse; I thought it might be useful to others, and accordingly I send you the information: Some time in May last a man drove up and fastened his horses by mine, and came into the store; afterwards we both went out, and I saw that one of his horses was sick. He said his horse had the glanders, and that he thought would have died last night, it was so sick. I was offended because he had tied his horses so near mine with a contagious disease, and said no more to him. Some days after this, the matter being somewhat forgotten, I was passing near my horse; he appeared to be sick; I turned and went up to him, and, sure enough, he was sick! his throat swollen to a terrible degree, so he could hardly raise or lower his head more than an inch or two. Something must be done, for I could not part with him any way at present. I tried one thing and another, but all to no purpose. Now for a study. What will do the thing? Glanders; what are the glanders? Why, it is diseased glands; the little vessels that bring the saliva to the mouth and throat are diseased—stopped up, and must be opened. What will do it? Tobacco will vomit, and may open them. I took a half pound of fine cut tobacco and poured two quarts of warm water on it, and let it soak a few minutes, and washed his throat and so on up to his ears, and down his throat to his legs, and between his fore legs. It made him direful sick, and would have vomited if it had been possible for a horse to vomit. In three hours I bathed him again, and the next morning again. The final effect was, my horse could put his head to the ground after second time bathing, and after the third time could feed as well as ever, and is well, and has done better ever since. WILLIAM McSHEPARD.—*North Sheffield, Ashtabula county, Ohio.*

INDIAN CORN.—The *American Polytechnic Journal* gives some extracts from a recent German work on the culture of maize in Germany, which have much interested us. After a history of the culture of maize in Europe, and a description of eight varieties cultivated, it treats on the place of Indian corn in rotation of crops:

“After clover, tobacco, beans, hemp, summer barley, Indian corn is always found to succeed well. In the vicinity of Gratz, in Styria, the rotation of crop is, 1. Indian corn; 2. Summer barley with clover; 3. Clover; 4. Winter wheat or rye. In the wheat stubble, buckwheat. Others again have rotations of six exchanges; 1. Indian corn manured; 2. Barley or oats with clover; 3. Clover; 4. Wheat, stubble turnips with a light manuring; 5. Beans or peas; 6. Rye, and Buckwheat in the stubble.

In the vicinity of Innspruck, in Tyrol, maize has been raised for thirty-six years in succession from the same field with continual success.

This is rather contrary to the ingenious theories of the excrements of plants and the necessity of rotation of crops.

A Professor, D. Bohm, raised wheat for thirty years in the same field, and he had every year a fine crop. To manure often and to manure well is the key to this secret.

Von Ludersdorf recommends potatoes as the best preparatory crop for maize.

Experiments have proved that the human excrements (Tafich) are the most effectual for maize.

Taffeh is the Chinese term for that kind of manure, and Burger recommended this word forty years ago to the agriculturists as a substitute for the disgusting name we give it generally.

Woolen rags have also been used with great advantage to manure Indian corn with, but since the old rags are again worked up into new cloth they became too costly to use them for that purpose.

In Italy, Franche Comte, Burgundy, in some parts of Hungary and Styria, the maize is sown broadcast. It is either plowed or harrowed in.

In Germany it is planted in rows with the hand or with the drill machines.

Ludersdorf planted Indian corn in rows sixteen inches apart and the plants in the rows six inches. When the plant formed the tassel he had every other plant removed, and gained about 42½ cwt. green fodder per Prussian acre. Dense planting seemed in the beginning not to influence the yield on corn, all the remaining plants had well-formed and fine large ears. Perhaps this mode of planting would present some advantages, especially in dry spells.

Burger made experiments as to the depth at which maize should be planted, and he found that maize planted one inch deep sprouted in 8½ days; kernels planted 4½ inches deep, in 13½ days. All those which had been planted much deeper did not come up at all.

I consider the greatest fault of the German mode of cultivating corn, that they plant too many other agricultural plants between it.

The most common and most advantageous plant raised between the rows of corn is the dwarf bean. In Alsace, Styria, they are very extensively cultivated with maize; the hoeing and cultivating are done by hand.

Burger invented a corn-drill, which drops between every two maize seed three or four beans.

In Karinthia the beans are planted separately; in the maize field between every 16th or 20th row of maize they use two rows for beans. This method has the advantage of allowing the air more circulation among the corn and accelerates its ripening, the beans are sooner gathered, and the vacant spaces can be plowed and the corn transferred to the plowed rows, in order to give access to the plow to prepare the ground for wheat.

Pumpkins (*Cucurbita pepo*) are much raised among Indian corn in Styria, Hungary, and Italy. In Karinthia the pumpkins are raised in the same way as beans; after nine to eleven rows of maize a row of pumpkins is planted. In some places they plant hemp and tobacco between the maize; in Wurtemberg and Baden the farmers plant beets, cabbage, and the like. Peas are also very advantageous among maize intended for fodder.

In Wurtemberg, maize is sown with stubble turnips; it is cut for fodder before the stubble turnips arrive at their full growth; it is still better to plant the maize in rows between the turnips; the turnips succeed very well, because the maize protects the delicate turnip-plants in their first stage of growth.

In Styria the farmers remove all side or root shoots, and all the plants which produce no ear cut out. In Styria, Crain, and Karinthia, the stamens, after their object is secured, are cut off; this is done when the grain has reached a certain degree of firmness. In Tyrol this procedure has been entirely abandoned, because it was found that it was injurious to the crop, and it caused besides, much labor for cutting and collecting the tops.

In Alsace some farmers are against topping; others say that in wet seasons it hastens ripening, and they continue to top.

Ludersdorf remarks that maize can support more heat and drouth than other plants; he says, "this property must be ascribed to the structure of the plant, the leaves surround the stem like a sheath, and project from the stem in an acute angle, the dew and rain glide along the furrowed surface of the leaves and accumulate around the stem; in dry spells the dew collects there and assists the plant to support a long period of drouth." And he mentions as a very striking proof, that in the year 1847, when the first trials with Indian corn were made near Berlin, (Prussia) maize was planted upon a high situation among a large field of peas. The drouth destroyed the peas entirely, but the maize grew luxuriantly. It yielded a large quantity of green fodder, for which it was planted.

To prevent, in the spring, the night frosts which injure the young maize, the Tyrolians, on the slightest indication of cold, make fires in the maize field and raise smoke, which has always proved a good preventive. In the spring of the year 1851, I was in Styria and saw such fires, the smoke being like a heavy canopy over the valley, and it seemed to prevent the cold air from the mountain penetrating it.

In Germany maize suffers only from the brand; the ear swells up and the husks turn a silvery gray; in the beginning the interior of the diseased ear is filled with watery excretion, which turns by degrees into a black powder.

The late time of blossoming of the genuine American Indian corn makes it particularly adapted to green fodder, and it is in every respect preferable to the European or acclimated American maize. The former grows very tall before the blossoms develop themselves, and the stem is at the time of cutting still very tender.

Maize has the excellent property that the cattle never suffer from over-eating. It is said that it causes dysentery, which is however, prevented by cutting the stems in pieces, say six, eight, or ten inches long, and soaking them in water a few hours before they are fed out; the water mixed

with the juice of the maize stems is much liked by the cattle. The milch cows improve by it in their milking qualities.

In Styria green maize is always fed with dry fodder; the cattle will seem to have a desire for hay and straw whilst they are fed with green maize. Experiments have shown that cows loose much in their milking qualities when fed entirely with green maize, but when hay is added they regain it soon again.

The American maize has been found not so favorable to the production of milk as the native maize.

Maize does not feed much better than old clover and lucerne.

In Karinthia the horses are fed with maize which is soaked in salt water; its nourishing quality is considered to that of oats as 2 : 1."

EXPERIMENT WITH GUANO, PURE AND MIXED, ON WHEAT.—A correspondent of the *New York Agricultor*, dating Accoma C. H., Va., June 18, 1853, says :

"Last fall, when sowing my wheat, I laid off four contiguous parcels, of one-sixth acre each, to which I applied the following substance, viz :

- No. 1. Guano alone, 25 lbs.
- No. 2. Guano 25 lbs., and Plaster 6 lbs.
- No. 3. Guano 25 lbs., and one peck charcoal in half the quantity of guano by measure.
- No. 4. Guano 25 lbs., moistened with strong lime.

otherwise they were treated precisely alike. The substances were mixed the day before application.

"I have observed them closely, and the results are as follows : Until this spring, I could perceive no difference; then I found No. 1 and No 3 taking the lead of the others, and they have continued to do so till the present, when my wheat is nearly ready for the scythe. If any difference exists between No. 1 and No. 3, I think No. 1 is rather taller and ranker, while No 3 has rather longer heads.

"My object in these experiments was to ascertain whether the effects of guano are enhanced by admixture with "fixers" of ammonia. I was, on chemical principles, an advocate for adding plaster or charcoal; but these experiments seem to indicate no improvement in the case of one of the substances, and a deterioration in that of the other, as compared with guano alone. This guano and plaster question has been a bone of contention among chemists and agriculturists. Only one experiment, however, I do not consider conclusive, and next fall I intend to institute others."

It must not be supposed that because the so-called "fixers of ammonia" did no good, that these experiments militate against the ammoniacal theory. The fact is, as we have often stated, that gypsum, when mixed with guano, instead of fixing the ammonia which it contains, has a tendency to set it free, whereby it is lost. For wheat we prefer to sow guano alone, in the fall, dragging it in with the seed. Any of our correspondents who have used guano, would oblige us by sending the results.—H.

"TEN BUSHELS TO THE ACRE."—In occasional excursions through parts of our own and the adjoining counties, we have made it a point to inquire concerning the yield of wheat, and the answer has almost invariably been, that "the farmers generally get about ten or twelve bushels to the acre." We speak now of wheat-growing districts where every farmer sows broad fields, year after year. With careless farming and poor land, this miserable yield might excite little surprise. But we have received the same report from farmers whose lands were once rich, and were evidently intended by Nature to be always rich, and well adapted for wheat.

Is not this proof of an unskillfulness such as ADAM might have exhibited the first time he turned up the earth and began to "earn his bread by the sweat of his brow," after being expelled from Paradise? We can tell these farmers that, although they believe they understand all the mysteries of their venerable profession, while a city editor is utterly ignorant of them, we know they could very easily average twenty bushels per acre. Do not suppose, gentlemen, that we are about to preach "book-farming" to you, albeit you may stand in great need of such instruction. We do not mean that you should study agricultural chemistry, or import guano, or expend as much labor upon your wheat-fields as if they were flower gardens; but we mean that you should merely practice those simple rudiments which your great ancestor, before referred to, was no doubt perfectly master of, five years after his unwilling exit from Eden. Merely resting your lands, alternating crops, plowing as if you were not afraid of hurting the grub-worms, paying common attention to your seed, and other little matters that add nothing to your labor, are all that would be required. You may answer that you do attend to all these things. We do not believe it. It is a slander upon Mother Earth, who is not so poor in Western Pennsylvania as many people suppose.

It is time that this rude scratching of a miserable pittance from the ground should be brought

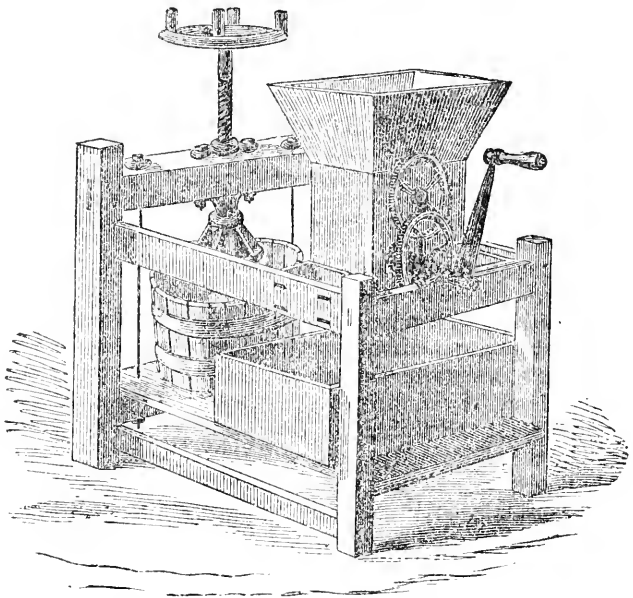
to an end. To pass over a farm beautifully situated, where the vegetation—of Nature's planting—is most luxuriant, betokening a noble soil, and after having admired it most enthusiastically, to be coolly told by the owner that wheat is his principal crop, and that he raises "ten bushels per acre," makes one feel indignant. Fifty years ago, the farmers of Western Pennsylvania got ten bushels of wheat per acre, from the fields they had succeeded in wearing out, and to-day their descendants, with reverent imitation get ten bushels also. But fifty years ago there were no steamboats, no railroads, no magnetic telegraphs, no leviathan clippers scouring the seas at a speed that would astonish even that wicked Dutch skipper who commands the "Phantom Ship," no daguerreotypes, no friction matches; in fact the world was a baby then, and is a giant now. And yet there are farmers sticking to the ten bushels to the acre.

Although we have pointed out a palpable evil, it does not necessarily follow that we should suggest a remedy. We refer this branch of business to the members of our Agricultural Society. They will no doubt be in a state of intense excitement, as the time approaches for holding the State Fair at this place, and will be ready for decisive action in whatever way it may be needed. Would it not be a good idea for them to send out a committee through our own county—and perhaps the adjoining ones—to examine into the general system of farming, and find out particularly, by what hocus poeus the ground is perverted from yielding more than ten bushels of wheat per acre. They might then contrive a plan to inform every individual farmer that there is a better way, and offer to insure him against loss, if he will make a few timid experiments in the track followed by those bold fellows in other parts of the country, who are not afraid to take forty bushels of wheat from an acre.

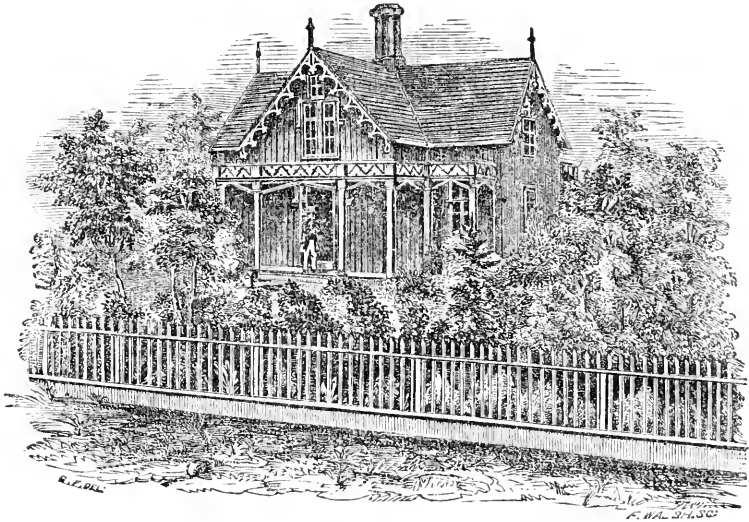
It is probably proper to add, that this serious ten bushel charge is not brought against every locality around us, nor against every farmer, in the districts where it applies most directly. With this explanation, we are prepared to prove that we have drawn no exaggerated picture.—*Pittsburg Journal*.

HICKOK'S IMPROVED PORTABLE CIDER MILL.—The accompanying figure represents a complete and effective machine, being contained in one frame $2\frac{1}{2}$ by 3 feet, and 4 feet

high, the whole weighing 300 lbs. This mill, when attended by two men, and properly worked according to directions, will make 6 to 12 barrels of cider a day. The peculiar arrangement of the cylinders is such that no description of apple will clog it up, but it will at all times work free and fast—qualities that are indispensable. The press is provided with a heavy wrought-iron screw, cut on an engine lathe; and the pressing box or tub is so arranged that as soon the pressing is accomplished, it can be opened in an instant,



the pomace taken out, and closed again as quickly, and another charge put under the screw. No straw or bag is needed, and the cider comes out fast and clear. Any boy 14 years of age can press as readily as a man. While it possesses all the advantages of the old style mill, it has none of its objections. One quart or one barrel of cider can be made any time it suits the owner to use it, and he can work up the apples off of each tree to suit his convenience. The mill is worked either by hand or horse power, and goes very easily. See advertisement in this number.



DESIGN FOR A FARM HOUSE.

I SEND you a plan and description of my first farm house. It was built five years ago this summer, for ABRAHAM THAYER, of Somerset, Niagara county, N. Y. It has been examined by a great many persons, and pronounced very convenient. It is built in the cottage style, for which the ground plan was designed. It possesses the external irregular shape necessary for the pointed gable, without exposing that heavy roof which is so common in the country, wherever they are made steep or square on oblong houses; and it is chiefly for this reason that I send this for publication. Something of the kind seems to be demanded, and impressed upon the mind of the farming public.

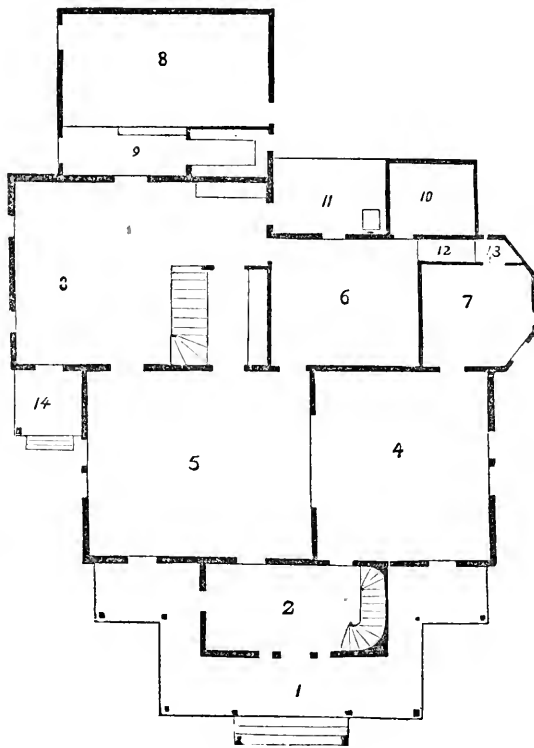
A Gothic house differs essentially in all its parts from one in any of the other orders of architecture, and can not be engrafted on a foundation adapted to them. Its foundation must be laid in the earth, and long, straight sides must be avoided, as very broad ends should be. For instance, a house is required 25 by 32 feet,—that is about the common size,—and a steep roof is wanted, say a half pitch, which would give a roof, $12\frac{1}{2}$ feet high; and with the projection of the eaves, would make the rafters about 20 feet long. This would seem to weigh down on the sides of the house so heavy that it would be painful for the eye to rest upon; and yet such houses are being built and called Gothic! Oh! shade of DOWNING, is this cottage architecture? The arrangement of the windows, too, is very important, and no pleasing effect can be produced with the common factory sash in such houses. If they are beautiful at all, it is the beauty of outline, rather than in detail, of costly work, which of course must be subordinate to the general plan.

But to my plan. I will describe it, not claiming perfection of course. The parlor and dining-room may be considered the main part of the house, 16 by 33 feet on the ground, and 16 feet high. The front hall is 9 by 15 feet, and 16 high. The nursery and bed-room are only 9 feet high. The end of the bed-room forms a bay-window, which in external appearance is very pleasing. The kitchen is 11 feet high, (it should have been 16). You will observe that each room is square, and the parlor and dining-room 33 feet long, yet the longest horizontal part of the roof exposed is 9 feet.

In the internal arrangement, the dining or living-room should be first considered. It is 16 by 17 feet, and is connected with the parlor by sliding doors, making, as before

said, a room 16 by 33 feet, as occasion may require. The nursery, kitchen, buttery, and front hall, each opens to this room, as will be seen by reference to the ground plan. The kitchen is very convenient for doing house work; from it we go to the cellar, to the wood-house, into the buttery, nursery, and back chambers; and both kinds of water are obtained at the door—rain water in the sink and well water at the end of the stoop. There is what should never be omitted in a dwelling house—a good bathing-room.

This house is built in the most substantial manner. The outside is covered with inch boards matched, and the joints battened with 3-inch strips $1\frac{1}{2}$ inches in thickness. The glass of the double windows is 8 by 16 inches, two wide in each sash. The cost of the whole building will not vary much from \$1500; but that would depend upon the finish. The only difference in the cost of such a house and a plain one equally well finished, is in the work, the material being about the same. The end that I claim to have accomplished is the production of a neat, compact, convenient, farm dwelling. WM. MORGAN.



GROUND PLAN.

EXPLANATION.—1, Veranda. 2, Front Hall. 3, Living-room. 4, Parlor. 5, Kitchen. 6, Nursery. 7, Parlor Bed-room. 8, Wood-house. 9, Platform. 10, Bathing-room. 11, Stoop. 12, 13, Press. 14, Veranda.

THE WHEAT FLY, OR "WEEVIL."—Considerable interest has been felt, and still exists in Western New York, to learn something more of the nature and probable increase or decrease of the wheat fly, or "weevil," whose ravages have extended with greater or less severity over several of our best wheat growing counties. The perfect insect is a small fly, about the size of a gnat, which it resembles. Unlike the Hessian fly, it produces but one generation in a year, and deposits its eggs, not on the leaves of the wheat as the Hessian fly does, but under the glumes (chaff), which invest the germs of seed as they begin to grow. The eggs, or nits, of the fly hatch in a few days (from five to seven), and give forth a brood of small orange-colored larvae, or worms. Like the young of all animals, these consume nutritious food freely, to enable them to increase in weight and substance. The infant seeds of the wheat plant are the natural and best food of the young growing wheat flies. Arrived at maturity, the larva, or worm, either falls from the ear of wheat to the ground, or, as Dr. FRENCH suggests and believes, it avails itself of a wet, cloudy day, or of a heavy dew at night, when the stem of the plant is moist, and crawls down to the earth, into which it penetrates an inch or two, and changes into a pupa, or chrysalis.

Horticultural Department.

CONDUCTED BY P. BARRY.

CURLED LEAF IN THE PEACH.

THIS disease, if so we may call it, has been, for four or five years past, assuming a more and more serious aspect, so that cultivators around us here in Western N. Y., begin to say that if it goes on as it threatens to do, and no remedy be discovered, we shall be compelled to abandon peach culture entirely. This would certainly be a great calamity, and it becomes every one who wishes to escape it, to investigate carefully the nature of the disease, with a view to the discovery of the real cause. We have been looking anxiously for some new light on the subject among the journals of the day, and find the following in a recent number of the *Country Gentleman*.

"The curl in the leaf of the peach, which is generally supposed to have had a very unfavorable influence on the young crop, has given rise to much speculation as to its immediate cause, and cold weather, aphides, fungus, or mildew, and diseased sap, have been variously assigned as reasons. The cold weather-theory will not always apply, as the disease sometimes appears after a continued succession of warm days, and the first opening of the young leaves shows the symptoms when they have never been exposed to a cool night. Again, the disease has often made its appearance when no aphides could at any time be detected with the most powerful achromatic glass; and newly opening leaves, exposed only a few hours to the fresh air, and on which no insect had ever set foot, have shown incipient but unmistakable indications. The explanation by "diseased sap," is too general and indefinite—the fungus theory has more appearance of plausibility, but needs investigation and proof—and if correct, the fungus must be of *internal* growth, as the smooth and shining epidermis of the leaf is quite unbroken when the curl first appears in the cellular tissue.

But whatever may be the cause, the best remedy, so far as discovered, is vigorous growth. We have observed trees standing in the corner of a hog yard, where they were copiously supplied with manure, and as a consequence making a rapid growth, covered with deep green foliage, with scarcely a vestige of the curl; and a row of peach trees which had been very freely shortened in the past winter, by cutting off branches in some cases an inch in diameter, have sent out strong new shoots, almost wholly free from the disease, and the trees are well loaded with young fruit."

Now our opinion, formed several years ago, and strengthened by later experience, is that the curl is produced by changes of temperature too great for the delicate constitution of the peach. It is a tree that vegetates early, and being usually and from necessity planted in a light soil, its earliness is hastened and the sap gets into active circulation, and young leaves are put forth long before the weather in our northern climate becomes steadily warm. We all know how common it is to have warm genial spring weather about the opening of the buds, when a sudden change comes and we have probably a week or two of cold, rainy weather, with slight frosts probably, with cold dry winds. This at once arrests the development of the young shoots and leaves; the sap becomes stagnant and diseased; the bark is ruptured and gum oozes out all over the younger parts; the leaves, whether in an embryo condition rolled up in the bud, or half or wholly expanded, become swollen and diseased; then mildew attacks them, as it is always ready to reign upon sickly or feeble vegetation, and with this aphides and other insects: hence the opinions that mildew or insects were the cause of the disease.

1849, we think, was the first year that this disease appeared in Western N. Y., in a serious form. That spring was cold and changable. 1850 was similar and the curl was worse than before, and so has continued since. One strong argument, at least so we regard, in favor of this view, is the fact that if we have fine weather at the opening of the peach buds, we have very little curl, and that immediately after a change to cold the curl appears, and its severity is always in proportion to the intensity and

continuance of the cold. Then again as soon as the weather becomes warm and steady, the diseased leaves drop and new healthy leaves appear, and the disease is no more seen that season, not a symptom of it. Besides some varieties are much less affected by it than others. We have a very hardy French variety, *Peche de Vignes*, that scarcely ever shows a curl in the worst seasons. We have a short row of six trees, that have come almost hourly under our observation; the varieties are the *Snow*, *Old Mixon Free*, *La Grande*, *Crawfords Early*, *Haines Early*, and *Cooledges Favorite*. These were all planted at one time, of the same age, and in the same soil, and have been treated exactly alike, but the *Crawfords Early* and *Cooledges Favorite* have suffered so much less than the others from the curl that the trees are nearly twice as large, and both have now a good crop of fruit on, while the others have few or none. In going through an extensive orchard we might find many instances of this kind.

In addition to this, we find that trees in sheltered gardens suffer less than those exposed; and under glass there is no such thing as curl. Are not all these facts sufficient to warrant the opinion we have expressed.

The article we have quoted, says "the disease sometimes occurs after a succession of warm days." We admit this, but it has never appeared to our knowledge after warm days without the intervention of cold nights. Has any one seen it appear in warm weather, say in June, July, or subsequent months?

It says too, that "the first opening of the young leaves show the symptoms when they have never been exposed even to a cold night." We grant this, but as we have said, the sudden and violent check given to the tree affects every part, and the leaves even while rolled up in the bud. Neither can we agree with the opinion that "vigorous growth is the best remedy," for we have seen some of the most vigorous growing trees suffer most seriously. We regard *well ripened wood* as more important than vigorous growth, but we would combine these if we could. Were not the trees quoted as examples benefitted by some kind of protection? To avoid in some degree the effects of the malady we can now only suggest the selection of *hardy* varieties and planting in situations somewhat protected from the cold west and north-west winds. Will peach growers who have had an opportunity for extensive observation give us the benefit of their experience on this subject? If we have drawn erroneous conclusions from our own observations we shall be thankful to any one who will set us right.

STRAWBERRIES.

THE practice of planting strawberries in August is a very good one when *well* done, but very hazardous when performed with as little care as one would take in April. Every season we have to listen to hundreds of complaints concerning the loss of summer and autumn plantations of strawberries. The plants, in most cases, are feeble, the dry weather not allowing them to become well rooted. The ground is dry, and although the plants may have been set after a shower, the heat, sun, and dry air, soon leaves the ground as dry as ever, and what can the plants do but die? We must suggest to those who desire to make a strawberry bed in August or September, to see in the first place that the ground is thoroughly wet. If a rain does not happen to come at the right time, and in sufficient quantity, then apply the watering-pot or engine, and drench it completely, until the water has gone down even to the subsoil. The plants may then be set. But when they are in the ground, even thus prepared for them, all is not over. If a brilliant sun shines out upon them in its full force the day after they are planted, the chances are ten to one against their living. In such a case, a slight shade should

be afforded for a few days. Evergreen boughs, or boards set on their edge and meeting at the top, forming a roof over the rows of plants, are easily applied.

If such a course as this is followed, strawberry plants may be set in any month of summer, and in any sort of weather. Nothing can be a greater waste of time than the very common method of planting in a soil as dry as ashes, and then dribbling a little water on every day. People say, "I can not see why it is my plants die; I water them every day." They do not understand that this every day sprinkling amounts to nothing more than to hasten the death of the plants. *One good thorough soaking* of the ground *before* the plants are set, will generally sustain them till re-rooted, and is worth a thousand sprinklings afterwards.

We intended, at this time, merely to touch upon this single point. As to varieties, preparation of soil, mode of planting, &c., we must refer to past numbers of the *Farmer*. We must say this much, however, that the soil should be trenched eighteen inches to two feet deep, and be enriched with well rotted compost or manures. Then the plants must be set at sufficient distance apart to admit of clean and good culture until the fruit is fit to be gathered.

We see quite enough of planting in common fields, and allowing the plants to run at random, and cover the whole ground. Rather than adopt such a course, it is much better to resolve never to plant a strawberry. Just at the moment when abundant food and *moisture* is indispensable, the thin surface of the ground is parched, and the fruit withers on its stalk, instead of coming to full and perfect maturity. The strawberry does not require an expensive or difficult management, but a *constant* care the year round, without which it is a most unprofitable object of cultivation.

THE PALMER WORM.

Throughout a large portion of the New England States, and in parts of New York, orchards have suffered severely from the ravages of a strange looking caterpillar, that few people had ever seen before. We were glad to find the following history and accounts of its transformations, in the *Cambridge (Mass.) Chronicle* of July 21, written by Professor Harris.

"During the month of June, a small worm, or naked caterpillar, has been observed on apple trees, in large numbers, throughout the greater part of New England, and in the valley of the Hudson in New York. By some persons it was thought to be a new comer; and by others was mistaken for a second generation of the canker worm, which disappeared about the time that these smaller insects began their ravages. This, however, is by no means the first visitation of the insect in such unwelcome and destructive profusion. As long ago as the year 1791, it prevailed through many parts of New England, during the month of June, and at that time received the name of the *Palmer worm*. Some accounts of its ravages in orchards and even among forest trees, at that date may be found, under the head of *insects*, in the second edition of Dr. Dane's "New England Farmer and Geographical Dictionary."

Communications concerning this insect, several of them accompanied by specimens, have been sent to me from Bradford, Andover, and Westford, Mass.; from New Boston, and Keene, New Hampshire; from New Haven and Salisbury, Conn.; and from Providence, R. I. Apple, cherry and plum trees in my own garden, also afforded me a few of the same insects, which were first observed there about the tenth of June. Within the past three weeks, numerous accounts of this supposed new or hitherto unnoticed depredator have been published in all our agricultural newspapers. In some places orchards have suffered from these insects in the same way and to as great an extent as from the ravages of canker worms; and in some cases, not only the leaves, but the young fruit has been destroyed by them.

These worms, or caterpillars, grow to the length of about half an inch. Though varying somewhat in hue, they are mostly of a pale yellowish green color, with two blackish lines along the top of the back, and a brownish head. Under a magnifier, a few short hairs can be seen on the body, arising singly from little black points, arranged in threes on each side of every ring; and there are usually two, more or less conspicuous, semicircular, blackish spots on the top of the first ring.

They have sixteen feet; the first three pairs being jointed, and ending with a point or claw, the others fleshy tubercles without proper joints. They are very impatient of being touched, and on being taken into the hand, move with great agility, and by jerks, both forwards and backwards. When the trees are shaken, the insects spin down, and hang suspended by threads. Probably most of them leave the trees in the same way, when their course is finished. In some places, it was observed that they all took their departure during heavy showers, towards the end of June. My official engagements, at that time, prevented my observing their progress abroad.

All the specimens sent to me, that remained alive, together with a few from my trees, were put into a wide-mouthed bottle, and were supplied with leaves. About the 28th of June, some of these worms began to cover themselves with a transparent web, formed of a few delicate silken threads. One of them was transformed to a chrysalis within its web on the 5th of July, and became a winged moth on the 9th; having remained in the chrysalis state only four days. Others were more tardy in their transformations; and one still remains a chrysalis. More than half of the whole were unable to take this form, having perished in the worm state from the attacks of an internal parasite, a minute grub, which after preying on the vitals of its victim, left the body and spun itself a little oval whitish cocoon or pod, from which it emerged soon afterwards as a tiny four-winged ichneumon fly.

"The chrysalis of the palmer worm is only one-quarter of an inch long. It is of a pale brown color, and differs from that of the common bud-worm in not having any transverse rows of teeth around the body. The moth is of an ashen grey color above, whitish and lustrous like satin beneath. The fore wings are very narrow, and are sprinkled with a few black dots, three of which, near the middle, are larger than the rest. The hind wings are also narrow, blackish, and surrounded by very broad fringes. The antennæ are bristle-formed. The palpi, or feelers, project horizontally from the head, in the form of a brush-like snout, and from the middle of the upper side of each of them arises the curved and pointed terminal joint, like a little spur. The tongue is spirally rolled, and when extended measures about half the length of the antennæ. This little moth rests with the fore part of the body slightly elevated, the narrow wings horizontally incumbent upon the body, and the antennæ turned backwards and lying straight upon the wings. The insect may now be seen on the wing in the evening, soon after sunset; and it may also be found, in considerable numbers, among the grass, at a somewhat earlier hour.

"A scientific name and character, with the classification of this moth, remain to be given. It belongs to a group or tribe called TINEADE, and to the genus *Rhinosia* of Treitsche, or *Chatochilus* of Stephens. Most of the insects belonging to the above named tribe are of small size, and have diminutive specific names ending in *ella*. As this insect frequents the orchard (in Latin *pometum*), it may be called *Rhinosia pometella*, the little Rhinosia, or the little Snout-moth, of the orchard. From other species of the same genus it may be distinguished by the following characters: Fore wings ash-gray, sprinkled with blackish dots, three of which, larger than the rest, are placed triangularly near the middle; a dusky transverse band near the tips, and a curved row of seven black dots at the origin of the terminal fringe. Hind wings dusky, with a leaden luster, black veins, and very long black fringes. Body and legs beneath, yellowish-white, with the luster of satin. Length, from the forehead to the ends of the closed wings, five-sixteenths of an inch. Expansion of the wings, five-eighths of an inch.

"Some hope may be entertained that the little parasites, alluded to in the foregoing account, may tend greatly to check the future undue increase of the palmer worms. Should a second generation of the latter appear during the present summer, or should we have another visitation of them next year, or at any future time, some means for arresting their depredations may become necessary. Showering the trees with soap-suds, or a solution of whale-oil-soap, or with lime-water, dusting ashes or air-slaked lime on the leaves, when wet with dew or rain, or casting dry sand upon the trees, may be found serviceable."

I AM much pleased with your article on "Raising Fruits from Seed," and I think it will have a tendency to awaken an interest in that direction. In the fall of 1849 I planted as soon as the seeds were perfect, and taken fresh from the fruit, Grapes, Currants, Raspberries, Apples, Peaches, Pears, Cherries, and Plums, and every variety came up in due season, and have done far better than I could have expected. My Currants and Raspberries are very nice varieties; one bush of Raspberries are later than common. One of my seedling Grapes has fruit on this season; so far they look very fine. It is a seedling from the *Catawba*, and the grapes are now larger than on the original. If the fruit proves as good as I anticipate, I will send you a layer from it, if desired.
C. W.—*Lake Grove, N. Y.*

Editor's Table.

We would call particular attention to the interesting and valuable communication by J. B. LAWES, Esq., on the fattening qualities of various breeds of sheep. As many of our readers are aware, Mr. LAWES is an English land owner, possessing a fine estate in Hertfordshire, some three hundred acres of which he devotes to experimental purposes. For the last ten years, assisted by Dr. J. H. GILBERT, and other able chemists, he has been systematically experimenting on most of the important problems connected with agricultural chemistry, at an expense of some fifteen thousand dollars per annum.

The results obtained have already greatly extended the boundary of our inductive knowledge respecting the rationale of the rotation of crops, fattening animals, the effect of climate, artificial manures, the fall of rain, &c., on the production of grain and root crops, as also their effect on the elaboration, maturity, composition of plants.

The care, skill, and minute accuracy with which these experiments are executed, we have had personal opportunity of witnessing. Every thing these gentlemen publish may be relied upon with the greatest confidence. None of the results which form the basis of new views, or which militate against established theory, are depended on till they have been tested in many various ways with a like result. For instance: we recollect when Dr. GILBERT was determining the percentage of nitrogen in many samples of wheat grown under different manurial treatment, he found one sample that had been manured by superphosphate of lime to contain three per cent. of nitrogen in dry matter, or about double that manured with ammoniacal salts. In all cases duplicate analysis were made, which agreed within a tenth of one per cent. But in this case Dr. G. could not satisfy himself of the correctness of the result short of five several analyses, all of which agreed. Dr. GILBERT's doubts are worthy of more confidence than many men's certainties.

Mr. LAWES has an immense accumulation of experimental results not yet published. His investigations expand so much, as he proceeds, that he can not keep pace with them, and he has therefore but little time for writing.

Our limited space compelled us to leave out a valuable portion of Mr. LAWES article, referring principally to the relative economy of purchasing

artificial manures, or fattening cattle and sheep with oilcake and other purchased food. We will give Mr. L.'s views on this subject in a future number.

NATIONAL UNIVERSITIES.—Dr. T. ROMEYN BECK, long distinguished for his learning and scientific attainments, has given to the public some valuable suggestions on the importance of founding Universities of a higher order than any of the existing colleges in the United States, for the more perfect education of studious men, rather than for the instruction of youth. The four years spent by the latter in colleges only prepares them to become in the future, scholars, and masters of arts and science, for the pursuit of which our present institutions do not furnish them any adequate facilities. Our medical and law schools are mere specialities, and quite limited in their studies and objects. Institutions of a much broader basis, embracing every department of the natural sciences, and their application to all the industrial arts of society, are greatly needed. Dr. BECK enumerates many professorships that ought to be established in an American University; and being himself the author of a work on Medical Jurisprudence, which had the honor of being adopted as a text book at some of the best European Universities, his remarks on this topic have peculiar force:

"We require the appointment, under public authority, of a *Professor of Medical Jurisprudence or Forensic Medicine*. It is not possible to do full justice to this subject in Medical Colleges. We teach there, what is known. We want a person or persons who shall ascertain, if possible, the unknown. And great as have been the discoveries of late years, in this science, still the cunning of the murderer has frequently outrun them. Why should not men duly qualified, be appointed to such an office, who by their researches would be far in advance of those who by secret, and in some cases almost unknown means, prevent detection in the commission of crime. There is a person now living*—the certainty of whose knowledge on the power of poisons is such, that he is not only called to examine cases in every part of France, but not long since was summoned to Belgium, in one which, at the time, attracted the attention of all Europe. I hold that there should be two or three persons of this character appointed and paid by the government to perform this important duty.

"It is impossible for our public institutions to support professorships in these various and accumulating sciences and branches of sciences. You require the aid of the government, or what is still better, private individuals must come forward, foster and support them.

"Addressing myself to an audience, partly composed of members of the Legislature, I submit with great deference, that there are certain subjects, which most particularly claim their care and endowment.

"For example, a *Professor of Statistics* might be appointed with great advantage to the community. His duties would be laborious, but how much time and money

*Dr. ORFILA. The next mail from abroad brought the news of his death.

might be saved, were he to compare, analyze and determine what has been accomplished as to Prisons, Hospitals, Asylums, and indeed the whole range of our corrective and beneficial institutions. How much useful information is even now gained by examining the returns of the Census and of Annual Bills of Mortality. I can only glance at this subject, nor can I do more, with another and which may be styled a Professorship of *Comparative Law and Legislation*. Reform is on foot, even under absolute governments. One State is borrowing from another. Great efforts are making to simplify and condense the laws under which we live."

The above paragraphs indicate the manner in which the subject is handled by the Secretary of the Regents of the University of the State of New York. Human elevation is retarded, laws are complicated, crimes and frauds are fostered, and popular ignorance perpetuated, because our highest and our lowest educational advantages are equally contracted, and sadly defective. Our object in bringing this subject so frequently before the readers of the *Farmer*, is to influence, in some small degree, public opinion. In pointing out how easy it is for any agricultural chemist of moderate skill to impose on the farming community any *nostrum* as an improved artificial manure, as we have endeavored in a preceding number, our purpose was to show the necessity of a more enlarged and thorough education of agriculturists, not to interfere with the manufacturers and venders of the superphosphate of lime, or of any manure whatever. With us, principles are every thing—men little or nothing. Men are the creatures of a day, while sound principles and wise public institutions, may last through indefinite ages. To the latter are due our best thoughts, our best efforts; and the great and the good of the land are contemplating the ways and means to establish throughout its length and breadth, a more efficient system of common school and university education. Unless this is done, as Dr. Beck truly suggests, it will be impossible either to detect frauds innumerable, or punish crime. It is even now exceedingly difficult to purchase any pure, unadulterated medicines, as any good physician knows. To expose impositions of all kinds we regard as the high and sacred duty of every citizen; and to qualify all honest men to do so effectively, science must be placed within their reach.

SPIERS' & SURENNE'S PRONOUNCING DICTIONARY OF THE FRENCH AND ENGLISH LANGUAGES. D. APPLETON & Co., 200 Broadway, New York.

SPIERS' Dictionary is a thoroughly new and original work, elaborated from the latest and most approved sources in English and French, and not a mere reproduction or revision of any preceding French or English Dictionary. A work of the critical and comprehensive character in which the learning and professional attain-

ments of many of the ablest men in France and England are united, has long been needed to facilitate the study of either language by such as wished to have access to the literature, arts, and sciences developed in both. With the French and English dictionaries before in use, the American or English student of chemistry, anatomy, surgery, agricultural and horticultural sciences, who wished to consult French authors on these and kindred professional subjects, found the old works of BOYER and CRAMBAUD and the compilations therefrom, nearly worthless, so rapid has been the progress of the arts and sciences within the last fifty years. Whether in modern literature, military or civil engineering, commercial and mercantile pursuits, in manufactures, industrial and the fine arts, or in the various departments of the natural sciences, this Dictionary, improved as it has been by the American editor, Mr. QUACKENBOS, is beyond comparison the best extant. Mr. Q. has enlarged the work, and appended to every word the accurate and justly celebrated pronunciation of Surenne's Pronouncing Dictionary. He has given, under their respective terms, all the important synonymes of of the French language, translated from Guizot and other reliable sources.

It is needless to urge the great value of the ability to read books written on rural arts and sciences in the French language; for the fact is generally understood that France, with her long established agricultural and horticultural schools and colleges, is in advance of all other nations. In medical science, civil and military engineering, French text books ought to be studied by every American interested in these departments of knowledge; and we are happy to know that not only the French, but the German and Spanish languages are receiving far more attention in our colleges and academies than ever before. For this auspicious improvement the public is much indebted to MESSRS. APPLETON & Co. for their admirable German and Spanish, as well as French Dictionaries, in connection with the English language.

LANGSTROTH ON THE HIVE AND THE HONEY-BEE; A Bee-keeper's Manual. By Rev. L. L. LANGSTROTH. HOPKINS, BRIDGMAN & Co., Northampton, Mass.

We have received through Mr. DARROW, bookseller, of this city, a book of about 400 pages with the above title. We have not yet had time to examine it carefully, but a slight examination has impressed us with the idea that it is a work of careful research, and of great value to the bee-keeper.

MINER'S DOMESTIC POULTRY BOOK.

We have received from the publisher, GEO. W. FISHER, of this city, MINER'S New Poultry Book. Mr. MINER has allowed the poultry raisers to tell their own story, and of the mass of articles furnished for this work, most of them are really valuable, showing a disposition on the part of the writers to treat the subject candidly and fairly; other articles show their authors ridiculously ignorant of the subject of which they write. On the whole, it is a book that every one who has the least touch of the "chicken fever" should read, as it is the only one on the subject up to the times. We have no doubt the publisher will reap a rich harvest. For price, &c., see our advertising columns.

SPEECHES IN CONGRESS BY J. R. GIDDINGS.

Published by JEWETT & Co.: Boston. For sale by DEWEY.

THE NEW YORK CATTLE MARKET.—At a meeting of the Farmer's Club, one of the subjects of discussion was "The Benefit of Railroads to Farmers;" and in this connection one of the members made some interesting statements respecting the sources from which the New York market is supplied. He said:

We have heeves in our market that started from the prairies within the week. They are delivered here from the North Western prairies at an expense of \$10 to \$12 per head, and yet the men who produce these cattle are the last to see the benefit derived from railroads. It would be rare to find a hundred head of cattle in New York, New Jersey, Massachusetts, and Vermont markets at one time, but for the droves that come from the West.

Were it not for the railroads they could not be brought here. In winter they can not drive them because of the expense and difficulty, wearing out the cattle from fatigue. By the railroad they can come from Chicago, and be delivered from the cars in this city in good condition, and always within the week. It would take from fifty to ninety days to bring the cattle from the western prairie of Ohio, Kentucky, Illinois, or Arkansas on foot. A week ago the speaker saw a curiosity at our cattle market. It was a drove of cattle from the Cherokee Nation, west of Arkansas. These cattle were raised by the Indians, and marked with their hieroglyphics. They were bought by an Illinois drover, and pastured upon the grand prairies of the West one summer, and fed through the winter upon the abundance of corn that grows in Southern Illinois. They were this spring started upon their travels eastward, and were finally butchered in New York.

It would have been almost impossible to have brought these cattle down here on foot, as ten miles a day is an ordinary journey, and even had they arrived here, they would have been in such a condition as to be almost unsalable. It was his opinion, that but for the railroads, New York would be in a state of starvation so as far as meat is concerned.

STANDARD WEIGHTS OF GRAIN.—The standard weights of the following grains are regulated by law in the State of New York, as follows, to which we append the common weight:

Standard of weight.	Com. weight.
Of Wheat,.....60 lbs.	55 to 65 lbs.
Of Rye,.....56 ..	46 to 56 ..
Of Barley,.....48 ..	44 to 56 ..
Of Oats,.....32 ..	28 to 44 ..
Of Indian Corn,.....56 ..	50 to 62 ..

FARMER PREMIUMS FOR 1853.—Below we give the award of premiums for the present year:

PREMIUMS TO INDIVIDUALS.

- 1st. For the greatest number of subscribers sent by one individual, \$30 in agricultural books, JOSEPH GILLESPIE, Carbondale, Pa.
- 2d. EMORY LUCE, Kingsville, Ohio, \$20.
3. JASON L. SANFORD, San Francisco, Cal., \$10.

COUNTY PREMIUMS.

- 1st. To the county in which the greatest number of copies of the *Farmer* is taken, an Agricultural Library worth \$40, ERIE COUNTY, PENN.
- 2d. Library worth \$25, CAYUGA COUNTY, N. Y.
- 2d. Out of the State, \$25 to ASHTABULA COUNTY, Ohio.

Selections of books can be made by those entitled to them, or the choice left to us. Those entitled to premiums will please order.

LEWIS F. ALLEN'S SALE OF SHORT HORN AND DEVON CATTLE.—We call the attention of our readers to Mr. ALLEN'S sale of stock at Grand Island, six miles below Buffalo, on the 7th day of September next.

A Good Cow.—J. P. HART, McLean, Tompkins county, N. Y., writes us that the past season he had a cow that produced in nine months 351 lbs. of butter, besides what was consumed by a family of three, and "goers and comers." The sour milk, with a very little provender, fatted a spring pig that weighed, when dressed in November, 315 lbs.

STATE FAIRS FOR 1853.

New York, at Saratoga,.....	Sept. 20, 21, 22, 23
Michigan, at Detroit,.....	Sept. 27, 29, 30
Vermont,.....	Sept. 13, 14, 15
Pennsylvania, at Pittsburg,.....	Sept. 27, 28, 29
Kentucky, at Lexington,.....	Sept. 13 to 16
New Hampshire,.....	Oct. 5, 6, 7
Maryland,.....	Oct. 25, 26, 27, 28
Illinois, at Springfield,.....	Oct. 11, 12, 13, 14
Indiana, at Lafayette,.....	Oct. 12, 13, 14
Wisconsin, at Watertown,.....	Oct. 4 to 7
Virginia, at Richmond,.....	Nov. 1, 2, 3, 4
Lower Canada Board of Agriculture, Annual Exhibition,.....	Sept. 26, to 27
Upper Canada,.....	Oct. 5 to 7
Southern Central Agricultural Society, Augusta, Ga.,.....	Oct. 17 to 20

Inquiries and Answers.

WHEAT SOILS IN MICHIGAN.—The critical investigation of the longest cultivated fields in the wheat districts of Michigan would reveal a state of things not very dissimilar to that disclosed in the following:

About a year since, Dr. J. H. SALISBURY, of New York, furnished me an analysis of the soil of a portion of my farm, which produced me that season a crop of wheat, yielding about sixteen bushels per acre. This land, by an

imprudent course of cropping for several successive years, had become a good deal impoverished. The analysis showed, as I was fully apprized before, a deficiency of vegetable matter, as well as of several important mineral elements of the wheat crop, especially phosphoric acid, of which there was only 0.02 per cent; there was also a lack of potash, but a pretty fair supply of lime, about two per cent.

Now, what course would you recommend as the most economical for increasing the quantity of phosphoric acid? I am now preparing the ground for a crop of winter wheat, in order to seed down to clover, the clover sown last year having been almost entirely destroyed in consequence of the severe protracted drouth. Would it pay to purchase bone shavings, or meal, in New York, adding the cost of transportation here, to sow with the wheat this fall? If so, what quantity per acre would suffice the purposes of the present crop of wheat? We have no bone mills in this State, and sulphuric acid can not be purchased short of New York at a reasonable price. WM. R. SCHUYLER.—*Marshall, Calhoun county, Mich.*

The above letter opens up a question of more importance to the people of this country than any other which is likely to engage their attention in the nineteenth century. How can farmers in Michigan and other states, constantly remove phosphoric acid and potash in crops, and by the stirring, washing and leaching of the soil, and not impoverish the land? At present prices of bone dust, potash, guano and superphosphate of lime in New York, it will not pay to transport either to Marshall, Michigan, for agricultural purposes. We have a farm to rejuvenate which lies within a mile of tide water where vessels come on the Potomac, and find it cheaper to make manure on a poor soil than to purchase it in a city two miles distant. It may be different in Marshall, or Calhoun county, where our correspondent resides. Our system is to sell nothing but *air* from the farm, in the shape of butter, fat pigs, and the like, while phosphoric acid and alkalis are drawn mainly from the subsoil, but partly from purchased wood ashes. For the present, wheat culture should be given up, except for home consumption, to those who are willing to impoverish their fields. Nightsoil, if properly saved in all cities and villages, would go far to supply the fertilizers needed to grow wheat.

If Mr. S. can sell fat hogs at \$4, per 100 lbs., net weight, he may buy corn at forty cents a bushel, and obtain all the manure the corn will make as a profit for his trouble of feeding it. The gain in meat will pay for the corn. Instead of buying corn, we are raising it almost expressly to make manure. If we sell only the butter and fat meat which may be extracted from corn plants, the manure derived from the crop will possess nearly all the ammonia, and other mineral elements which the stems, leaves and seeds of maize contained. On ordinary land well tilled, one can make a fair crop with wood ashes and a little guano; and with corn he can make

rich manure. In Michigan, clover may answer better than corn, although we doubt it.

To aid the soil in bringing a good crop of clover, try 100 bushels of ashes as an experiment, if you can buy them at a moderate price in Marshall. Pick up all the bones you can find, and boil them in strong lye until they fall to a powder, and then mix the lye and bones with an old dry compost, or dry loam, and scatter it evenly over your wheat fallow, or field, as a top-dressing. Turnips are a valuable crop for making manure; and with a little pains they may be grown at a very cheap rate. In the present half civilized condition of society, when the inhabitants of cities prefer pestilence to cleanliness, and are unwilling to feed the land that feeds them, the farmer must rely mainly on his own home resources for the raw material of crops. Not until the soil is vastly more impoverished than it now is, will the American people begin to study agriculture as a profession.

(J. H. WALLACE, Casey, Ill.) We have none of the African wheat at present, but shall procure a small quantity after harvest, and shall then be happy to send you some.

INFORMATION WANTED.—Last season my father had a meadow of twenty acres of timothy, which had been seeded three years, and yielded a good crop of hay each year, until last year, it came up thick in the spring, and grew finely until six or eight inches high, and then all died. This year he has a lot of sixteen acres affected in the same way, only not so bad. Can any of your correspondents give any information concerning the cause? The ground is very full of wire worms, but we hardly think that the cause. We have a fine growing crop of corn on the twenty acre lot this year. A. M.—*Seneca Falls, N. Y.*

HORTICULTURAL.

I take this opportunity of to ask your advice in regard to cultivating the Pear upon Quince stocks.

1. Is it profitable?
2. How many would you allow to an acre?
3. What might be the production of an acre properly managed? THOS. M. GRAHAM.—*Shepherdstown, Belmont county, Ohio.*

(1.) It may be made profitable by planting the most suitable varieties on deep and rich soil, and giving them careful judicious cultivation. The profits upon dwarf pears, like the profits on other branches of culture, depend upon their management.

(2.) Ten feet apart, each way, is a good distance, and this gives some four hundred on the acre.

(2.) They begin to bear at four years old, and the crop then and for a few years after will be light, although enough to pay expenses. At about eight years old they may bear a bushel, and in a few years more—double that. By taking into account the value of pears in your market, you may form some idea of the value of

each tree. If four hundred trees should average a bushel, and each bushel be worth \$2, this gives \$800 per acre. The fruit is generally very fine on dwarf trees, and is easily and cheaply gathered.

Will you be kind enough to inform me as to the best time in the year for trimming nursery trees (your own opinion) through the *Genesee Farmer*? H. R. WHEELER—*Freeport, Stephenson county, Ill.*

Nursery pruning in general should be performed in winter, or towards spring, when the coldest weather is over. Summer pruning should be nothing more than pinching or shortening misplaced or over-luxuriant shoots, to preserve the symmetry and proportion of the tree. Small wounds made during summer heal very quickly, but to deprive a tree of a considerable portion of its leaves in the growing season, checks the growth, and often produces debility.

Will you please to give us some hints on the destruction of a worm which has infested our Rose bushes, making them appear as though a fire had run over them. Wm. COSZENS.—*Union Springs.*

It is the Rose slug. The most effectual application know is HAGENSTON'S mixture of whale oil soap, and water, in the proportion of two pounds of the soap to fifteen gallons of water. See HARRIS' Treatise on Insects for a full account of this insect.

I send you a couple of apples, a specimen of a seedling tree, which stands in the corner of my place. The tree has never received any special attention, but is a great grower and good bearer. These apples I hung up in a bag in my cellar when I took them from the tree, and have done nothing to them since. A. J. CAYWOOD.—*Medina, Ulster county, N. Y.*

The variety seems to be a good keeper, but the specimens were in a decaying state before we received them, and therefore we can not say thing of their quality.

ADVERTISEMENTS, to secure insertion in the *Farmer*, must be received as early as the 10th of the previous month, and be of such a character as to be of interest to farmers; we publish no other. Terms—\$2 for every hundred words each insertion, *paid in advance.*

Improved Fowls for Sale.

HAVING kept for several years the very best fowls to be procured, and having the past season added to my stock some exceedingly beautiful specimens, I have now a great number of the young pairs, certainly as good as can be found in the country, which I will sell at a much lower price than that charged by fowl-dealers. I will sell the following varieties at five dollars per pair:

White Shanghai, Black Shanghai, Buff Shanghai, and Cockin China, and Bantam Postra, and Speckled Shanghais (a very beautiful bird), at ten dollars per pair.

These fowls will be ready for delivery by the first of September, and I will coop them carefully, with food, water, &c., and send by railroad or express, as desired, without charge, and warrant every fowl sent to be pure and fine. Orders are solicited. Wm. VICK.

Rochester, N. Y., August 1, 1853.

Suffolk and Essex Piggs,
PURE breed, for sale by EBEN WIGHT,
August 1, 1853.—3t. Dedham, Mass.

Hickok's Patent Improved Cider Mill and Press.
WE have been appointed sole agents for the sale of this mill and press in the city of New York. This is the most approved mill now in use. Catalogues with description and drawing will be forwarded by addressing us post-paid. Price \$40. LONGETT & GRUFFING.
August 1, 1853.—2t. 25 Cliff street, New York.

Mansfield's Clover Seed Hulling and Cleaning MACHINE was awarded at the Ohio State Fairs, 1850, 1851, and 1852, the first premiums, diplomas, and silver medals. Warranted to hull and clean from 20 to 40 bushels per day, or from 2 to 5 bushels per hour. Cash price of machine \$95. Manufactured and sold by M. H. MANSFIELD.
August 1, 1853.—*1 Ashland, Ohio.

Hickok's Patent Portable Cider Mill, USED in various portions of the Union, (and conceded on all hands to be the best cider mill made,) took the following premiums in 1852:

Silver Medal at the fair of the American Institute, N. Y.
Premium at the fair of the Franklin Institute, Philadelphia.

First Premium at State fair at Utica, at the Columbia and Rensselaer county fairs, and a *Diploma* at the Westchester fair.

The price of the mill is \$40, free of freight or insurance. Manufactured by W. O. HICKOK, Harrisburg, Pa. Sold by HUGGINS & CALKINS, Castile Wyoming county. C. E. YOUNG, 159 State street, Buffalo.

Provy & Chew, Geneva, N. Y.
See page 247 this Journal. [aug.—3t.]

WORMS! WORMS!

A GREAT many learned treatises have been written, explaining the origin of, and classifying the worms generated in the human system. Scarcely any topic of medical science has elicited more acute observation and profound research; and yet physicians are very much divided in opinion on the subject. It must be admitted, however, that, after all, a mode of expelling these worms, and purifying the body from their presence, is of more value than the wisest disquisitions as to the origin. The expelling agent has at length been found—Dr. McLane's Vermifuge is the much sought after specific, and has already succeeded all other worm medicines, its efficacy being universally acknowledged by medical practitioners.

Purchasers will please be careful to ask for Dr. McLane's Celebrated Vermifuge, and take none else. All other Vermifuges, in comparison are worthless. Dr. McLane's genuine Vermifuge, also his Celebrated Liver Pills, can now be had at all respectable Drug Stores in the United States and Canada.

Important to Farmers, Agricultural Societies, &c.

Sale of thorough-bred Devon Cattle, Leicester Sheep, Draught Stallions, Dairy Cows, &c., at Cottesmore Farm, Coburg, C. E., the residence of Mr. JOHN MASSON.

I WILL sell at auction on Wednesday, 31st August—
1 thorough-bred Devon Bull, "Billy."
2 do do Cows, "Beauty" and "Daisy," with their calves at their feet, bull and heifer.
2 Heifers three years old, "Belle" and "Young Beauty."
1 do two do "Lady Elgin," with her bull calf at feet.

2 one year old Heifers, "Princess" and "Ing Lady."
2 Bull Calves, ten months old.
1 Heifer Calf, nine months old.

Pedigrees will be given of the above on the day of sale; and a reference to the Provincial prize list for the last seven years will furnish ample evidence of their quality.

Also, the well known draught stallions "CLYDE BRITON" and "CORING CHAMPION," winners of high premiums, and proved the best stock-getters which have ever traveled this country, together with the entire stock of Horses, Cattle, Sheep, Pigs, Pitt's Eight Horse Thresher, Cultivators, Wagons, Harnesses, &c., &c., being a clear dispensible sale.

TERMS—Twelve months for all sums above £2 10s., without interest, on furnishing approved endorsed notes. The sale will commence at 10 o'clock A. M. precisely. E. C. HULL, Auct. JOHN MASSON.

Cottesmore Farm, Coburg, August 1, 1853.—1t.

Decidedly the Best and Cheapest Poultry Book in the Union.

**NOW READY,
MINER'S DOMESTIC POULTRY BOOK.**

ORDERS received for over Two Thousand copies of this book in advance of its publication, which is unprecedented in the sale of any work ever issued on this subject.

This is an entirely new work, and one of the most valuable books for *practical uses* that has ever been published. In preparing it, the main object was to study the *actual wants* of the Fowl-breeder, more than their fancy notions, besides containing full directions for breeding, raising, and keeping the several kinds that come under consideration: when and how originated; a large number of cuts from life, of some of the best breeds in the country; prices at which they are selling in the market; together with such other matter as was thought necessary. The varieties at present are so great, that a book published five years ago is now behind the age. This work contains a vast amount of new and useful matter, and in the number of its illustrations, great amount of practical matter, and its fine typographical execution, is ahead of any other work on Poultry ever published. The book contains over

ONE HUNDRED AND THIRTY-FIVE PORTRAITS of the most perfect specimens of newly imported and native breeds of fowls, and other cuts which have cost from \$700 to \$800—being double the number found in any similar book, while the price is only one-half as much. The names of all the new and imported breeds are given, so that any person being at all interested in them, can here find their full description, origin, &c., &c. Recollect

ONLY FIFTY CENTS

for the most complete book on Poultry ever published.

Dr. J. C. Bennett, of Fort des Moines, Iowa, formerly of Great Falls, N. H., author of "A Poultry Book," and one of the most extensive breeders of Poultry in this country, to whom the proof sheets were sent, writes:

"No book ever published will compare with yours, as to *splendid and life-like engravings*, and will unquestionably be the best book published on the subject, and will sell in preference to any other work. *It will receive my untiring energy for its sale all over the United States*, and I have no doubt 50,000 copies will be sold the first year."

As it is expected this work will have a very extensive sale, it will be an object for book dealers, peddlers, agents, and others, to make early application.

The book is handsomely printed, on good paper, 12 mo. size, containing 256 pages, and sold at the low price of 50 cents paper, and 75 cents in full cloth binding. Those wanting books sent to their address will send in their orders early.

Books sent by mail to any part of the Union on receipt of the following:

For one copy, in paper, 50 cts. Cloth, 75 cts.

For two copies, do. \$1.00, do. \$1.25

For three copies, do. 1.25, do. 2.00

For four copies, do. 1.50, do. 2.50

Postage pre-paid on receipt of nine cents for paper, and two cents for cloth.

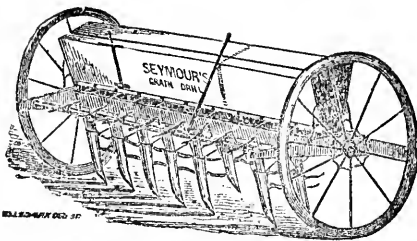
Books sold to peddlers, agents, and others, at reduced prices. Address, post-paid, Geo. W. FISHER, Bookseller and Publisher.

Rochester, N. Y., August 1, 1853.

DISEASES OF THE LIVER.

WHEN the celebrated Dr. Rush declared that drunkenness was a disease, he enunciated a truth which the experience and observation of medical men is every day confirming. The many apparently insane excesses of those who indulge in the use of spirituous liquors, may be thus accounted for. The true cause of conduct, which is taken for intonation, is very frequently a diseased state of the Liver. No organ in the human system, when deranged, produces a more frightful catalogue of diseases. And if, instead of applying remedies to the manifestations of disease, as is too often the case, physicians would prescribe with a view to the original cause, fewer deaths would result from diseases induced by a deranged state of the Liver. Three-fourths of the diseases enumerated under the head of consumption, have their seat in a diseased Liver. (See Dr. Gunn's great works.)

Purchasers will be careful to ask for Dr. M'Lane's *Celebrated Liver Pills*, and take none else. There are other Pills, purporting to be Liver Pills, now before the public. Dr. M'Lane's Liver Pills, also his Celebrated Vermifuge, can now be had at all respectable Drug Stores in the United States and Canada.



Seymour's Patent Grain Drill.

THIS is emphatically the Premium Drill of our country, having taken the first premium at every fair of the New York Agricultural Society, since its first introduction, in 1849, including the highest prize and diploma, at the great trial of Agricultural Implements, made by the Society, at Geneva, in July, 1852.

The following are among the advantages this Drill possesses over other Grain Drills, namely:—It sows all grain and seeds, from peas and corn to grass seed, as well as any other Drill sows wheat, not failing thus to perform in sowing even beet or carrot seed; and it is difficult to clog it with any of the trash and foul stuff commonly found in grain, such as straw, chaff, stems of tare or other weeds, or even the heads of Canada thistles, too frequently found in the grain. It will also sow any grain soaked and rolled in lime, plaster, ashes, and all dry fertilizers which are fine enough to pass through the machine.

Whatever it will sow in drills it will just as readily sow broadcast by removing the drill tubes, which is very easily done. It is remarkably simple in its construction, and very durable. It is easily understood and kept in order by common laborers, or repaired by common mechanics, such as are at hand in nearly every neighborhood or town.

The price is but little in advance of any other approved grain drill, and quite below that charged for many which are far less adapted to the wants of the farmer or planter than this—and, in view of its utility, simplicity, convenience, and durability, it is believed to be by far the cheapest drill in the world. This drill is made small enough to be drawn by hand for garden purposes, when ordered.

All communications in relation to machines, or the right to manufacture, promptly attended to.

C. H. SEYMOUR, Manufacturer.

P. SEYMOUR, Patentee.

East Bloomfield, Ontario Co., N. Y., August, 1853.

REFERENCES.

HARLOW MUNSON, President Ontario Agricultural Society, East Bloomfield.

E. M. BRADLEY, Secretary Ontario Agricultural Society, East Bloomfield.

JOHN DELAFIELD, President New York State Agricultural College.

B. P. JOHNSON, Secretary New York State Agricultural Society, Albany.

The above machine can be had of E. B. HALLOCK, 24 Exchange street, Rochester, N. Y.

Garden and Field Seeds,

FROM the new establishment of VANZANDT & BOWDISH, No. 114 State street, Rochester, N. Y., can be purchased of the merchants generally throughout the country, in papers or packages, on reasonable terms. Also, at the Agricultural Warehouse of E. D. HALLOCK, No. 24 Exchange street, Rochester, N. Y.

The Seeds from this establishment can be relied on as being of the best quality. They are mostly imported, or grown for us by the *Eastern Shakers*, and are warranted good and true. Full directions for cultivation printed on each paper and package.

VANZANDT & BOWDISH.

Rochester, May 1, 1853.

Spring Chickens,

HATCHED in March last, of the following breeds: Braham Pootras, Buff, Black, and Grey Shanghaes, Royal Cochon China, Malays, and Great Javas.

I have a fine lot of the above for sale at reasonable prices, which I will warrant pure and as fine as any in America. Address J. W. PLATT,

Box 123 post office, Rhinebeck, N. Y.
August 1, 1853.—1t

THE HORTICULTURIST,

And Journal of Rural Art and Rural Taste.

EDITED BY P. BARRY, AUTHOR OF THE "FRUIT GARDEN."

THE *Horticulturist*, as its name implies, is devoted to Horticulture and its kindred arts Rural Architecture and Landscape Gardening, and will keep its readers advised of every thing new on the subject, either in Europe or America. It is a Monthly Journal of forty-eight pages, beautifully printed on the finest paper and elegantly illustrated. In addition to numerous wood engravings, each number contains a full page engraving on stone, of some new, rare, and valuable fruit or flower, and is one of the most beautiful as well as the most useful Monthly Journals published in the world. We subjoin a few notices by the press, showing the estimation in which the work is held by our editorial brethren:

We are glad the work has fallen into such excellent hands.—*Louisville Journal*.

We feel that we are doing our readers a real service when we urge them to subscribe for this invaluable monthly.—*Weekly Democratic Press, Chicago*.

We congratulate the public on having so valuable a periodical as the *Horticulturist* within their reach.—*New York Day Book*.

Its contents are spirited and various, the selections judicious, the illustrations elaborate.—*New York Daily Times*.

A standard work of authority upon all subjects discussed or explained in it.—*Ficksburg Whig*.

There is no work in this country of greater value to the cultivator of fruits.—*Inquirer, Portland, Me.*

It is well got up; its articles able, various, and appropriate.—*Geneva Courier*.

Every man who has land enough for a garden should possess this work.—*Weedsport Advertiser*.

The plates alone are worth the year's subscription. The letter press is of a highly instructive character, and embraces a variety of topics. None who have a taste for the beautiful in nature should be without such a valuable publication.—*Hamilton (C. E.) Spectator*.

There is substantial profit as well as pleasure in cultivating taste in buildings, yards, gardens, &c., and the subscription price would be capital well invested by those who will attend to the contents of the *Horticulturist*.—*Daily Courier, Zanesville, Ohio*.

Any remarks of our own we fear would add nothing in comparison with the value of such a well conducted work. The plan of coloring the plates is decidedly beautiful, and no person interested in horticultural pursuits should be without it. It seems a wonder to us that horticulturists do not look more to their own interests, than to allow their monthly papers to be received without this indispensable accompaniment. The circulation ought to reach half a million. Although the number issued is already extensive, yet it should be increased, from the fact that it is a work of great merit.—*Port Byron (N. Y.) Gazette*.

This periodical is got up in excellent style, and well sustains its former reputation under its present management.—*Middlebury (Vt.) Register*.

We are quite satisfied with the work, and are inclined to believe that to the mass of readers, the work will be even more acceptable than it was under the charge of the accomplished Downing. We recommend the work cordially to the patronage of our friends and the public.—*Massachusetts Spy*.

Its contents embrace a variety of subjects, treated upon in the most scientific manner. The illustrations are numerous and well executed. We know of no other work of the kind on this continent that can compare with the *Horticulturist*.—*Daily Spectator, Hamilton*.

This magazine has lost nothing by falling into the hands of its present proprietor, Mr. VICK, of Rochester; for he maintains its neat typographical experience, while the new editor, Mr. BARRY brings to its editorial management abilities of a high order.—*Gazette, Keeseville, N. Y.*

The *Horticulturist* is almost invaluable to the fruit grower, and to the gardener, and it ought to be in the hands of every one. The new editor, Mr. BARRY, proves his eminent fitness for the post so lately filled by the lamented DOWNING.—*Watch Tower, Adrian, Mich.*

This publication embraces a wide field, and has something instructive for every reader. Its artistical embellishments and mechanical execution are of the highest order; for this we give credit to the publisher. Its editorials are practical, scientific, varied, and instructive. Its correspondence embraces some of the ablest horticultural writers in the Union.—*Register and Examiner, West Chester, Pa.*

This useful monthly, instead of losing interest as many feared it would in consequence of the death of its lamented proprietor and editor, Mr. DOWNING, continues to fully maintain its reputation. In fact the present editor and publisher appear to be using their best endeavors to raise it higher in public estimation than before. It is an eminently practical work, and therefore well fulfills its promises. No one who has anything to do with gardens, trees, shrubs, plants, or flowers, should fail to be among its readers.—*News and Advertiser, Middletown, Conn.*

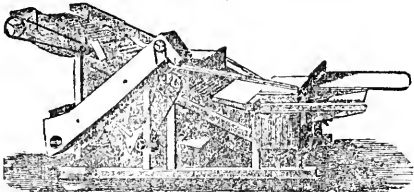
TERMS—\$2 per year, in advance. The volume commenced on the 1st of January last, and we can supply back numbers from that time. Those who prefer can commence with the (half year) July number.

COLORING PLATES.—Still further to add to the value of the work, and meet the improving taste and increasing wants of the horticultural community, an edition is published with COLORED PLATES, each number containing a full page engraving of some new, rare, and valuable fruit or flower, correctly colored from nature by the best living artists in this line. This is a new and important feature, in this country. Price \$4 a year, in advance.

Address

JAMES VICK, JR., PUBLISHER, Rochester, N. Y.

AGRICULTURAL IMPLEMENT MANUFACTORY—
CORNER OF CAROLINE & THIRD STREET.
BUFFALO, N. Y.



Pitts' Patent Separator—Improved Double Pinion Horse Power—Pitts' Corn & Cob Mills, &c.

I HEREBY give notice that since the extension of the patent right on my Machine for Threshing and Cleaning Grain, I have removed to Buffalo, N. Y., where I have permanently located, and erected a large establishment for the future manufacture of the above Machines.

The Separator has been enlarged, improved, and rendered more permanent and durable in all its parts, while the Horse Power for strength, ease, durability and cheapness of repair is not surpassed by any in the United States. This Power is warranted to stand the full strength of eight horses—also to give as much effective or useful power when driven by one or two horses as any other Horse Power, whether constructed on the endless chain or lever principle. It was put on trial at the great exhibition of Horse Powers and Threshing Machines at Geneva, July last, 1852, where it received the New York State Agricultural Society's First Premium "for the best Horse Power for general purposes." The Separator, at the same trial, also received the Society's First Premium.

My Machines will thresh and clean from three to five hundred bushels of wheat per day, and other grain in proportion.

Two hundred of the above Machines are for sale at the Agricultural Works of the subscriber in this city, all warranted to be a better article than can be purchased at any other shop, and if they do not prove on trial to be so, I will take them off the hands of the purchasers at the price they may pay me for them.

I further notify all persons who are purchasing Horse Powers and Separators to be used in California or Oregon, that I will hold them accountable for any infringements of the rights secured to me by letters patent in the above Machines, as I am manufacturing a Horse Power and Separator expressly designed for that section.

All orders for the above Machines hereafter addressed to JOHN A. PITTS, Buffalo, N. Y., will receive prompt attention.

May, 1853—4f.

JOHN A. PITTS,
Buffalo, N. Y.

French Zinc Paint.

THIS new and beautiful article of Paint is now offered to the trade and public, ground in prepared linseed oil, for the first time in this country. It has been used successfully in France for the last five years, where it has superseded white Lead as a paint.

The French Zinc when properly prepared and used, makes the most brilliant and durable white in use, and is entirely free from all poisonous qualities.

The French Zinc is not more expensive than white lead, and is prepared in such a manner that it requires no further preparation for use, than to thin it with Turpentine or raw Oil to the consistency of white lead paint.

The French Zinc is very much whiter, and has a better body, than the New Jersey Zinc.

The French Zinc is offered dry, and prepared as above, in quantities to suit purchasers, at the Manufacturer's Depot, No. 17 Buffalo st., Rochester, N. Y.

July, 1852,

M. F. REYNOLDS.

Fertilizers.

Peruvian Guano, \$45 per ton.

Superphosphate of Lime, 2½ cts. per lb.

Bone Sawings, or Meal, \$2.50 per brl.

Turnings and Crushed, \$2.25 "

Pulverized Charcoal, \$1.00 "

Potash Scrapings, 3½ to 4 cts. per lb.

Plaster, ground, \$1.12½ to 1.25 per bbl.

Sulphuric Acid, 2½ to 2½ cts. per lb.

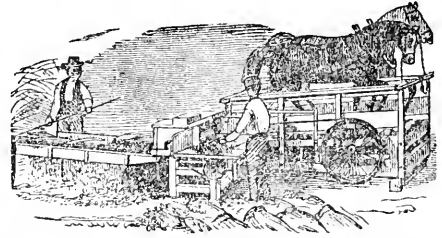
For sale at the State Agricultural Warehouse.

LONGFET & GRIFFING.

June 1, 1853—4f.

No. 25 Cliff street, New York.

HALLOCK'S Ag'l Warehouse and Seed Store.
No. 24, Exchange street, Rochester, N. Y.



[Emery's Patent Premium Railroad Horse Power, Threshing Machine and Separator.]

THE subscriber, late from the establishment of Emery & Co., manufacturers at Albany, where he has been engaged for the past six years, has been appointed their SOLE AGENT in Rochester and Western New York, for the sale of Emery's celebrated Railroad Horse Powers and Threshing Machines; Circular and Cross-cut Saw Mills, Feed Mills, Corn-stock and Hay-Cutters, &c.

adapted to the Power, and now offers them at manufacturer's prices, with the transportation added, and subject to the warrantee, as follows: "To work to the satisfaction of purchasers as represented in circulars and catalogues, or to be returned within three months, and full purchase money to be refunded." The attention of farmers is solicited, and a careful investigation into the construction of this Power and its comparative merits, as well as price requested, before purchasing elsewhere. He is also agent for their

COMBINED REAPER AND MOWER,

and keeps constantly on hand Plows, Hay-Cutters, Corn Shellers, Seed Planters, &c., &c., comprising a complete and extensive stock of Agricultural and Horticultural Implements generally, together with a full assortment of Field and Garden Seeds, of the best Imported and Shaker growth.

He is also agent for the sale of Seymour's Grain Drills and Broadcast Sowers, Wheel Cultivators, Gang Plows, Clover Hullers, Cider Mills, Clover Gatherers, Horse Rakes, Seythes and Snaths, Hand Rakes, Grind Stones, &c.

He will be prepared to furnish dealers with Drum and Taylor's well known Seythes; also Manure, Straw, and Hay Forks, Snaths, Rifles, and other haying tools at manufacturer's prices, wholesale and retail.

Particular attention is called to a New Plow, which is believed to be the best cast iron Plow ever offered, and which is warranted to do better work, with less expense of team, than any other Plow heretofore sold in Rochester—while the price is less than any other equally well finished.

The "uniform one-price cash system" will be adopted, with prices as low as the cost of articles, and just compensation for labor and time, will allow.

Farmers and others are invited to call and examine the stock of Machines and Implements, and are assured that no effort shall be wanting to meet promptly the wants of a discriminating public.

Circulars and Catalogues furnished gratis on application personally or by mail. E. D. HALLOCK,
June 1, 1853—4f No. 24, Exchange street, Rochester.

Extra Improved Superphosphate of Lime for Sale.

THE subscriber, at additional expense, has recently made important improvements in the manufacture of this well tested and valuable manure, and is now prepared to furnish an article assuredly equal, if not superior, to any in the market, at the lowest cash prices.

Put in bags of 50, 100, and 150 lbs. each, and branded "No. 1 Superphosphate of Lime." Manufactured and sold by

Wm. PATTERSON,

Division Street Wharf, Newark, N. J.

AGENTS:

HASKELL, MERRICK & BULL, 10 Gould-st., N. Y.

H. EMERY, Esq., Agricultural Warehouse, Albany.

PURTYER & FULLER, Halfwell Maine.

E. GREEN, Esq., Easton, Penn.

S. CHASE, Esq., Middletown, Conn.

July, 1853—4f.

PRINCE & CO.'S IMPROVED PATENT MELODEON.

GEO. A. PRINCE & Co., MANUFACTURERS, 200 MAIN ST., BUFFALO, N. Y.
WHOLESALE DEPOT, - - - - - 87 FULTON STREET, NEW YORK.

For the convenience of MUSIC DEALERS in all parts of the United States, we have made an arrangement with the following firms, who will supply the TRADE at our regular Factory prices:
GEO. P. REED & CO., 17 Tremont Row, Boston, Mass. COLBURN & FIELD, 154 Main St., Cincinnati, O.
BALMER & WEBER, 58 Fourth St., St. Louis, Mo.

General Agent for New York City,
WTR. HALL & SON, - - - No. 239 Broadway, opposite the Park.

The subscribers take this method of calling the attention of the public to a new Musical Instrument, as yet but little known to the musical world, viz: Prince and Co.'s Improved Patent Melodeon.

It is now about five years since these instruments were first offered for sale, and during that time the increased demand for them has been unparalleled. One hundred and fifty workmen are constantly employed in the manufacture and finishing from 75 to 80 instruments per week, and as yet they have not been able to supply the demand promptly.

For the benefit of those residing at a distance, and consequently unable to inspect the Melodeon before purchasing, we will endeavor to give a short description of the instrument.

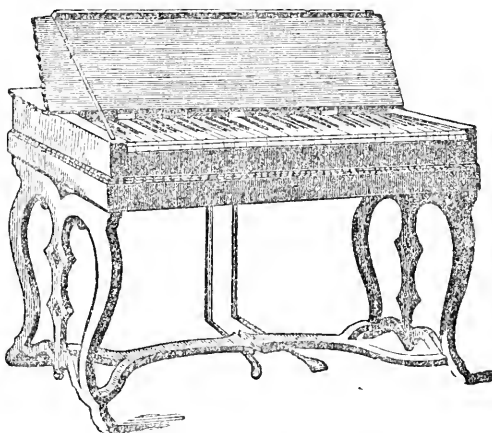
The cases are made of Rosewood, and are as handsomely finished as any piano forte. The keyboard is precisely the same as the piano or organ, and the tone (which is very beautiful) closely resembles that of the Flute Stop of the Organ—the notes speak the instant the keys are touched, and will admit of the performance of as rapid passages as the Piano. The Pedal on the left is intended for a swell, and with which the most beautiful effects can be produced. The Pedal on the right supplies the wind, and works so easily that a child can manage it without any exertion. The Bellows, (which is something entirely new, and for which a Patent was granted in December, 1846) is a reversed or exhaustion Bellows, and it is this, in a measure, which produces the peculiar tone. The instrument can be immediately made portable without detaching any part, the bellows folding into the body of the instrument, and the legs folding under and springing to their places, leaves the whole in a compact form. Each instrument has a packing case secured by lock and key.

The volume of tone is equal to that of a small organ, and by means of the swell may be increased or diminished at the pleasure of the performer; it is sufficiently loud for small churches, and is well calculated for a parlor instrument. Hundreds have examined them, and all have been loud in their praise; and the best evidence of their merit is their rapid sale. But it is a new instrument—a new invention, and is yet but little known in the musical world, and it is for this reason that we call to it the attention of all lovers of Music, believing that there are thousands who would lose no time in securing one, were they aware of the existence of such an instrument, and the low price at which it could be obtained.

The following letter from Lowell Mason, Boston, to G. P. Reed, we are permitted to use:

Mr. GEO. P. REED, No. 17 Tremont Row, Boston, Mass.
Dear Sir—At your request I have examined one of the Melodeons manufactured by Messrs. Geo. A. Prince & Co., of Buffalo. I think the instrument in all respects equal, and

in some respects superior, to any others of similar kind which I have seen, and in particular with respect to quality of tone and promptness of touch, or action of the reeds, by which quick passages may be performed with certain and distinct articulation of tones. An instrument of this kind is the best substitute for an Organ in Church Music with which I am acquainted. LOWELL MASON.
Boston, Mass., Sept. 26, 1849.



Five Octave—Portable. Price, \$75.

PRICES.

FOUR OCTAVE MELODEON, extending from C to C,.....	\$45 00
FOUR AND A HALF OCTAVE MELODEON, extending from C to F,.....	65 00
FIVE OCTAVE MELODEON, extending from F to F,.....	75 00
LARGE FIVE OCTAVE MELODEON—Piano style,.....	100 00
LARGE FIVE OCTAVE MELODEON—Piano style with two sets of reeds, tuned in octaves,....	150 00

Just published, "PRINCE'S COMPLETE INSTRUCTOR FOR THE IMPROVED MELODEON;" which is added favorite Airs, Voluntaries, and Chants, arranged expressly for this Instrument. Price 75 Cents.

CAUTION.—In consequence of the great success which has attended the introduction of Prince & Co.'s Melodeons, numerous imitators have sprung up in different parts of the country—offering instruments under the same name, and in outward appearance resembling them. We would therefore caution the public to be on their guard, and examine those made by Prince & Co. before purchasing. Many improvements applied *are exclusively your own*, and being the original manufacturers, our experience has enabled us to produce Instruments which a discerning public have unanimously pronounced superior to any thing of the kind hitherto manufactured. Many of the most eminent Musicians of the cities of New York and Boston have voluntarily given testimonials as to the high character of our Instruments, which can be seen on application.

All orders from a distance will be promptly attended to, and a written guaranty of their durability will be given if required.

GEO. A. PRINCE & CO.

THE WATER CURR JOURNAL.—A New Volume.—Now is the time to subscribe.—Published monthly, in a beautiful quarto. Illustrated with engravings, exhibiting the Structure, Anatomy, and Physiology of the Human Body, with familiar instructions to learners. It is emphatically a Journal of Health, designed to be a complete Family Guide in all diseases.

TERMS.—Only One Dollar a Year, in Advance. Address, post-paid, FOWLERS AND WELLS, Clinton Hall, No. 131 Nassau Street, New York.

“The Water Cure Journal holds a high rank in the science of health, always ready, straightforward and plain spoken, it unfolds the laws of our physical nature without any pretensions to the technicalities of science, but in a form as attractive and refreshing as the sparkling element of which it treats.”—*New York Tribune*.

THE ILLUSTRATED AMERICAN PNEUMOLOGICAL JOURNAL —Devoted to Perenology, Mechanism, Education, Agriculture, the Natural Sciences, and General Intelligence, profusely illustrated with Engravings. Every family, and especially all young men and women, should have a copy. Published monthly at One Dollar a year. All letters should be post-paid, and directed to FOWLERS AND WELLS, Clinton Hall, No. 131 Nassau-st., New York.

Young men about launching forth upon the activities of life, and anxious to start right, and understand their course, will find this JOURNAL a friend and monitor, to encourage them in virtue, shield them from vice, and to prepare them for usefulness and success in life. The various occupations will be discussed in the light of Pneumology and Physiology, so that every one may know in what pursuit he would be most likely to succeed.—PUBLISHERS, July, 1852—4t.

AGRICULTURAL.

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- Cole's American Veterinarian: A Treatise on the Diseases of Domestic Animals.* By S. W. COLE. In one volume, 18 mo., with plates, sheep. Price,..... 50
- Cole's American Fruit Book.* By S. W. COLE, author of the American Veterinarian. In one volume, 18 mo., numerous plates, full sheep. Price,..... 50
- This is undoubtedly one of the most valuable works on the subject ever published in this country. 15,000 copies published.
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- The only work on this subject ever published in America. It is highly recommended by Prof. Stillman, and other scientific gentlemen.
- The American Fowl Breeder.* Price,..... 25
- Published by JOHN P. JEWETT & CO., Nos. 17 and 19 Cornhill, Boston.
- For sale by all booksellers. [5-4t]

Superphosphate of Lime,

IN BAGS and Barrels, made by C. B. DE BURG, with full directions for use,—warranted a pure and genuine article— for sale by GEO. DAVENPORT, No. 5 Commercial, corner of Chatham street, Boston, Agent for the manufacturer.

Also, for sale, Ground Bone, Bone Dust, Burnt Bone, Guano, and Grass Seeds, of reliable quality. [4-1t]

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Great Auction Sale of Trees.

WM. R. PRINCE & CO., Flushing, L. I., propose making an auction sale of the entire stock of their Nurseries, about the 1st October next, and will advertise fully hereafter. August, 1853.

Atkins' Self-raking Reaper.

THIS machine is now offered to the public, and warranted to be a good self-raking reaper. It is also believed to be a good mower, but not yet having been sufficiently tested in grass (though it soon will be), is not warranted to be equal to a machine made mainly or wholly to mow.

The raking apparatus is of novel and very simple construction, and not liable to derangement, and every farmer who has seen it in the harvest field, says it performs the raking better than a man can possibly do it.

Price of machines at Chicago, \$175, of which \$75 must be paid on giving the order, \$50 upon successful trial, and \$50 in note payable 1st December.

The machines are most thoroughly built and warranted.

For Descriptive circulars, with cuts, sent to post-paid applications, J. S. WRIGHT.

"Prairie Farmer" Warehouse, Chicago, July, 1853.—3t

The Practical and Scientific Farmer's own Paper

THE GENESEE FARMER,

A MONTHLY JOURNAL OF

AGRICULTURE AND HORTICULTURE,

ILLUSTRATED WITH NUMEROUS ENGRAVINGS OF

Farm Buildings, Domestic Animals, Implements, &c.

VOLUME XIV, FOR 1853.

DANIEL LEE, JAMES VICK, JR., & JOSEPH HARRIS, EDITORS.

P. BARRY, Conductor of Horticultural Department.

Fifty Cents a Year, in Advance.

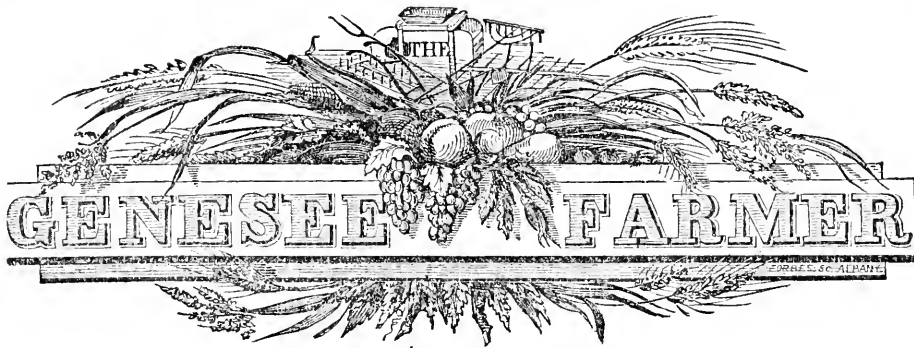
Five Copies for \$2— Eight Copies for \$3, and any larger number at the same rate.

All subscriptions to commence with the year, and the entire volume supplied to all subscribers.

POST-MASTERS, FARMERS, and all friends of improvement, are respectfully solicited to obtain and forward subscriptions.

Subscription money, if properly enclosed, may be sent (post-paid or free) at the risk of the Publisher. Address to DANIEL LEE,

November, 1852. Rochester, N. Y.



Vol. XIV.

ROCHESTER, N. Y., SEPTEMBER, 1853.

No. IX.

AGRICULTURAL SOCIETIES—THEIR USES AND ABUSES.

AGRICULTURAL SOCIETIES, of which there are some three hundred in the United States, may now be reckoned among the fixed institutions of the country. Being in infancy, and the offspring of popular feeling, it would be strange indeed if they were not sometimes perverted from their legitimate use to advance the interests of the few at the expense of the many. Nor is it an easy matter to prevent designing men from taking a leading part in associations for the promotion of agriculture, in order to give public premiums, publications, and exhibitions, such direction as will aid them in selling at a large profit their neat stock, pigs, sheep, poultry, or patented implements of husbandry. Abuses grow up as naturally and luxuriantly in all popular bodies, as weeds in a rich garden; and the extirpation of the latter is not more useful in horticulture, than the correction of the former in all agricultural societies. Their officers and members should guard against either commending or advertising, through the medium of their published proceedings, unworthy objects. It is easy to injure the public, and the character of the association. In State societies, an impartial observer may often discover a few gentlemen of wealth, who are engaged in rearing Short-Horns or other stock to sell at high prices, becoming year after year Presidents, or ruling members of executive committees, and State boards, not to develop new truths in husbandry, or advance agricultural knowledge, but to perpetuate the power and profits of an ambitious clique. Such characters, by their monopolies, prevent the true friends of the farming interest from encouraging the systematic study of rural economy, and the growth of a wise and valuable agricultural literature. Literature and science can never be incorporated with American agriculture, until agricultural societies think less of idle shows and private speculations, and more of illustrating the true principles of tillage and husbandry. This is the legitimate object of all organizations, composed mainly of practical farmers. A thorough knowledge of principles will most benefit them in their noble calling; and their annual agricultural exhibitions might be exceedingly instructive by demonstrating the most important truths in rural affairs. Do our cattle shows now demonstrate any such truths? We think not. It is rare indeed that a new fact of any value is brought to light at a well attended county fair, or State exhibition.

Inventors and manufacturers of new machines reap some advantage in bringing their wares before the crowd; but it would not diminish their gains if provision were made by a proper use of part of the funds of the society to teach its members something more than they before knew of agricultural entomology, and other kindred sciences. Insects, like wheat flies, weevils, and moths, are annually destroying crops to the amount of millions, without the least public effort being made to lessen the evil. Does it argue well for our general intelligence that no agricultural society in this most prosperous

republic has ever appropriated a dollar to foster the study of Insects? A distinguished and ingenious artist not long since explained to us a contrivance of his own invention for the wholesale destruction of those destructive pests which damage our gardens, orchards, and field crops so often, and so ruinously. With a little assistance from an agricultural or horticultural society, he might render the country an invaluable service.

No provision is made in these associations to meet the pressing wants of men of deep study and small funds—who labor to benefit the professional cultivation of the earth.

Who can tell how much of the substance of the soil is consumed in the ordinary production of a bushel of wheat, or a bushel of corn? This important information may be obtained by any agricultural society that really desires to enlarge the boundaries of our knowledge of the elements of fertility in cultivated land. In the growth of a plant on an arated surface, the earth parts with some of its mold and minerals. What per cent. of these is lost, which never enters cultivated plants at all? Would it not be a wise use of the funds of an agricultural society to investigate the facts as to what the soil loses by tillage when cultivated as for a crop of wheat or corn, by the decomposition of its mold and the washing of its salts? How much of the mold is dissipated in the atmosphere as is the substance of a compost heap by frequent turning? If no effort is to be made to increase our knowledge of the philosophy of agriculture, why expend time and money in attending shows and supporting agricultural societies? Idle hands and addled heads may seek trifling amusements; enlightened, thoughtful men, ask for more of solid instruction, and less of humbug and personal favoritism. They may readily obtain a reform in the management of State and county societies, where reform is needed, by calling attention to existing abuses, and insisting that the association shall do as much to increase as to diffuse knowledge. Our societies now diffuse very little information among the masses, for the simple reason that they really have nothing new and useful to communicate. Men must learn before they can teach; and we beg to learn when agricultural learning is to be kindly taken by the hand and helped forward by the associated farmers of the United States? From 1817 to 1853 we have been in the way of attending agricultural meetings and shows, and we can not see that a fat ox, sheep, or hog, is any better now than those exhibited in our boyhood. Thirty-six years ago young farmers desired to know how much grass was necessarily consumed to form a pound of good cheese, or one of butter. This information is as desirable now as it was then. Agricultural societies have done nothing to elucidate the relation that vegetable food bears to animal products. Are the ruling spirits in all agricultural bodies fully resolved to make no progress, and to set their faces as flint against the critical study of wool-growing, stock-breeding, and dairy-husbandry? A good cow separates from her blood a pound, or pint, of milk every thirty minutes, for days and weeks together. This rapid conversion of grass into blood, and blood into milk, has never attracted the attention of an agricultural society in this nation, which probably contains more cows than any other. Why not offer premiums for cows that will produce the most butter and cheese from a given quantity of food? Researches of this kind might show that our native dairy stock surpasses any recently imported high priced animals for the economical production of milk. Give all an equal chance, and let truth and demonstrated superiority prevail. Nearly all experiments are sadly defective, and lead to no conclusive results. Our proverbial impatience jumps at conclusions, which, being erroneous, mislead just as far as they are trusted. Ignorant men deceive not only themselves, but hundreds of others. The exact relation that grass, hay, roots, and grain, bear to milk, butter, and cheese, to beef, pork, wool, and mutton, might be ascertained and known to every one of the five millions of farmers in the United States, if agricultural societies would take the matter in hand. Experiments alone are needed.

ON FEEDING HORSES, AND PREVENTING GLANDERS AND FARCY.

A DISTINGUISHED veterinary surgeon, Professor DUN, of the Edinburgh Veterinary College, calls attention to the following errors in the dieting of farm horses, which are not less common in this country than in Scotland.

1st. Much too long an interval is allowed to intervene between the times of feeding. Horses are frequently worked six hours consecutively, during which time they receive no food whatever. This practice has been found by experience to be prejudicial to their health, inducing debility and predisposing to diseases of the digestive system. The natural habits and digestive organs of the horse alike prove that he is not designed for long fasts; as the smallness of his stomach indicates the necessity of supplying it with comparatively small quantities of aliment at short intervals. When at liberty, he eats during twenty out of the twenty-four hours. This natural habit may be modified, but pains should be taken not to run into the opposite extreme. A horse or mule when at work through the day on the farm, should have some nutritious food every five hours at the outside, if the purpose is not to impair his constitutional powers. When a plow team is taken up early in the morning, and expected to work till noon before regular feeding, it is the present practice of the best Scotch farmers to give each horse a lunch of a pound or more of oat-meal or bean-meal cake between nine and ten o'clock. Some prefer to mix oat and bean or pea-meal, which is wet with water and "fired" or baked; the cooking enables the digestive organs to render the nutritive elements at once available for the support of the exactions of labor. Dr. DUN is acquainted with several farmers "who give these cakes whenever the work is severe and the hours long, and all of them agree that their horses are now in much better heart and condition, and less frequently attacked by indigestion and cholice, than they were when subjected to protracted abstinence, and without any intermediate meal."

2d. Food may be improper on account of over quantity, excess of nutritiveness, or bad quality. By taking too large a quantity of food into the stomach at once, the immediate bad consequences may be wind cholice, inflammation of the bowels and the surrounding membranes, a founder; and occasionally, the swelling of food eaten dry causes a rupture of the stomach or intestines. An animal scantily fed from day to day, sometimes gets loose and finds access to a bag or bin of grain, and being hungry, gorges himself almost to suffocation; or a bad servant may feed to excess, and out of all reason. We have frequently wondered why grain or water taken into the stomach of a horse should so immediately affect his feet, producing the inflammation called *laminitis*—an inflamed state of the extreme vascular membrane or lamina of the hoof. Let us see if we can get at the philosophy of a common founder. A translation of a positive disease from one part of the system to another, by what doctors call *metastasis*, is common enough; but a horse may be foundered where there is no positive disorder in the digestive organs, and only an unnatural irritation from the presence of water or food improperly taken into the stomach. The exercise and heating to which he has been subjected on the highway or elsewhere, have brought the vascular and tender parts within the hoof into a condition approximating inflammation, before either water or food is swallowed. The antecedent hard service of the feet is a material fact in the case; for without previous driving, and too often hard driving, an acute founder is seldom seen. A sudden shock is inflicted on the nervous system in the stomach, which is sound, and its force shatters first, not the sound stomach, but the heated, enfeebled, and partially inflamed feet, which are connected with the stomach by abundant nerves. If the feet of a horse be covered with water this revulsion from the stomach to the lamina of the hoofs seldom occurs to an injurious degree. This brief explanation indicates the propriety of bleeding, and letting a recently foundered horse stand in a stream of water to cool his feet. Give him rest and physic. Proper feeding implies the use of neither too much nor too little grain,

and a due proportion of hay, corn blades, shucks, straw, pea-vines, or other forage, which had better be cut before it is consumed. If this forage is sound, bright, and was harvested at the right time, less grain will suffice to keep horses in a good condition. Where one has neither hay, nor blades, nor straw, much care should be had lest highly nutritive food, like corn, produce eruptions on the skin, enlargement of the liver, yellow water, and other maladies. If no other bulky forage can be had, horses should have browse with their grain to aid in distending the stomach and intestines; for bulk is an important element in healthy digestion.

Glanders and *farcy* have a common origin, the vitiated state of the blood, and are regarded as only different stages of a progressive disorder. As induced by insufficient or bad food, *farcy* usually appears first; and may continue for some time before any symptoms of *glanders* present themselves. *Farcy* is characterized as an unhealthy inflammation of the absorbent vessels and glands, which become swollen from the deposition of lymph, and soon ulcerate and discharge matter of a morbid and varying character. The poison from *farcy*-buds is carried in the blood to all parts of the body, and under favorable circumstances, rapidly produces itself. Tubercles are formed in all the lymphatic glands and in the substance of the lungs. Ulcerations appear on the mucous membrane of the nostrils, which is attacked on account of its high vascularity. Those parts first undergo disintegration which require for their healthy existence the largest amount of blood. Between the first symptoms of *farcy* and *glanders*, and the fatal termination of the disease, a very variable time intervenes, according to the strength or feebleness of the constitution, and the virulence of the malady. Whatever impairs the general health, or in any way vitiates the integrity of the system, may be regarded as a cause of *glanders*. It follows colds, influenzas, strangles, diabetes, and perhaps all other debilitating affections incident to bad shelters, over-work, and insufficient food. Like all other diseases that mark the premature loss of vital power, *farcy* and *glanders* are much easier prevented than cured. When from any cause the glands, mucous or serous membranes of an animal become inflamed, while its general health and constitution are yet unimpaired, the purulent or aqueous secretions that may ensue, as in colds or common distempers, are of a healthy nature, and they serve to work off the inflammatory action, which results in a speedy and perfect recovery. To maintain the stamina of life in full vigor in all animals of any value, is an object of great importance; for the principle applies to persons as well as to beasts and birds. Proper care and protection, avoiding all extremes and unnecessary exposures, and feeding regularly, that the system may never be surfeited by an excess of nutrient matter in the digestive and assimilative organs, and never weakened by a deficiency of the same, are the cardinal points in animal physiology to be kept constantly in view. All infected animals should be removed from those still undiseased, lest the exhalations from the former, and perhaps direct contact, communicate the distemper to the latter. In systems pre-disposed to any malady, it requires the least possible poison, acting as leaven, to excite a morbid action in organs previously in an apparently sound condition. Under skilful treatment, *glandered* horses sometimes live and perform labor for a number of years. This, however, only proves what every close observer must have witnessed, that had the same care been taken of health before it was partially sacrificed, that was exhibited afterwards, no injury of the kind would have occurred. When medical men shall come to understand their noble mission, and the people comprehend their true interests, the *prevention* of maladies, not their *cure*, will be the grand purpose of what is now the Healing Art. Physicians ought to be better paid for the patient study and wisdom that prevents sickness, with its pains, loss of time, and other incidental expenses and misfortunes, than for the less skill of treating diseases according to the prescribed rules and theories of the profession.

HISTORICAL MEMORANDA.

NUMBER ONE.

THE time is not remote when the agricultural history of this country will command quite as much attention as its political or military history; and it is the duty of such as possess evidence not known to the public, showing the progress of agriculture, the difficulties encountered, or surmounted, to contribute the same as a part of the rural literature of the age. History will concern itself with facts and principles, and with little beyond.

It has suited the purposes of the *New York Tribune*, *Albany Evening Journal*, *Rochester Democrat*, and other journals that sympathise with them at the North, as well as several ultra sectional papers at the South, to attack the proprietor of the *Genesee Farmer*, and represent him as the active partizan of the late Administration, and the particular favorite of Mr. FILLMORE. Similar charges are substantially preferred by the *Boston Journal of Agriculture* of May last, in the following words:

"Our Caleb Quotem, who is at once an M. D., editor of two agricultural papers, publisher of one or two political sheets, and *political stump-speaker*, Agricultural Clerk in the Patent Office, and seed-raiser in general to the same."

Allowing the above statement to be all true, which it is not, it would appear that this "M. D." is an industrious man, which is more than can be said of some of his assailants. As to the assertion that we raised seeds for the Patent Office, it is wholly untrue. We were never employed to grow seeds of any kind for government, and never was paid a dollar for such service. "Mr. SOULE, chairman of the committee on Agriculture in the Senate, introduced, by *unanimous* consent, a joint resolution to provide for the production of seeds required for distribution at the Patent Office. The resolution appropriated one thousand dollars to produce such improved seeds of grain, grass, and vegetables, as may be wanted at the Patent Office; the same to be expended under the direction of DANIEL LEE, Clerk of the Agricultural department of said office."

So soon as this resolution appeared in the proceedings of the Senate, it was appended to a note from the Secretary of the Interior, of which the following is a copy:

"MARCH, 27, '52.
"SIR: I beg leave to ask whether the above resolution was submitted at your instance.

"Very respectfully, your obedient servant,

"DR. DANIEL LEE.

"ALEX. H. H. STUART."

The letter of Mr. STUART received the following reply:

AGRICULTURAL ROOMS, PATENT OFFICE, March 29, '52.

SIR: I have the honor to acknowledge the receipt of your note of the 28th inst., in which you ask if a resolution therein mentioned, and offered by Mr. SOULE in the Senate, "was submitted at my instance." I answer, that it was not. I have the honor to be,

Very respectfully, your obedient servant,

Hon. ALEX. H. H. STUART, Sec'y of the Interior.

DANIEL LEE.

Had the Secretary been friendly to the Agricultural Clerk, or had the latter been a partizan of the President, as has been a thousand times falsely asserted, a member of the Cabinet would not have opposed the resolution of the chairman of the Agricultural committee, and attempted to hold a subordinate clerk in the Patent Office responsible for the official action of a United States Senator. As a personal favor to the Agricultural Clerk, Mr. SOULE did not press his resolution to its final passage, which he introduced at his own instance, because two-thirds of the seeds distributed he knew to be dead and worthless.

The fact was known to many Senators and members of the House, that we did every thing in our power to prevent the sending out, under the patronage of the government, so many very common and valueless seeds; but we were constantly over-ruled by one whose character is drawn to life by Dr. STANSBURY in the following letter:

WASHINGTON, January, 7, 1853.

DEAR SIR:—I received your note of yesterday, making inquiries with regard to my knowledge of Mr. EWBANK's character and conduct while Commissioner of Patents. I regret the necessity which impels you to call upon your friends to sustain you in a controversy with such an antagonist; and as a matter of personal feeling, I should have greatly preferred remaining silent. But I have seen the unjust and unwarrantable attacks made upon you by Mr. EWBANK, in the *Tribune* and other papers; and I can not refuse to give you the benefit of my humble testimony in the establishment of the truth.

I feel sure that wherever you and Mr. EWBANK are both known, nothing he could say could have the slightest influence in injuring your reputation. You ask me what was Mr. EWBANK's character for truth in the office; and whether I know of any instances in which he was guilty of falsehood.

I am constrained to say that his character for truth was *bad*: I have frequently known him to be guilty of gross falsehood, both in his official and personal dealings. He was accustomed to give verbal orders, and afterwards, when their consequences showed them to have been injudicious, or bore hardly upon himself, to deny that he had given them, and throw the blame upon those by whom they were obeyed. In one case, I knew him to dictate to a gentleman *what he should remember*; and in another, to order a clerk to certify to an account (his son's) of which he knew nothing. I have also known him to direct work to be recounted, in order that more pay might be given for it (to his son), when it had already been liberally counted, according to the usage of the office. I have further known him to employ persons to do work for his reports under promise of payment, and when the work was done and used, to refuse payment, and deny having promised it.

With such a knowledge of Mr. EWBANK's conduct, I could not believe him even under oath, in any case in which his passions, or his interests were concerned. This opinion is strengthened by the fact that he is an avowed disbeliever in all those sanctions which are supposed to give peculiar solemnity and obligation to an oath.

You ask me what was Mr. EWBANK's treatment of his official subordinates? It was characterized at sometimes by a coarse and vulgar familiarity, and at others by a rude disregard of their feelings, almost brutal. It has never been my misfortune to meet a man in a high official position, who knew so little what belonged to it; or who was so entirely destitute of the appearance, bearing, and manners of a gentleman.

In conclusion, allow me to add that Mr. EWBANK, so far from being the political martyr he would have the public believe, has been defended, protected, and adhered to by his official superiors, with a perseverance as remarkable as it was unfortunate; and he was removed at last only when his mismanagement threatened the utter and irretrievable ruin of the Bureau over which he presided. In quitting it, I have yet to learn that he has left behind a friend, or carried away the respect of one of his official associates.

I remain, dear sir, very respectfully yours,

DR. DANIEL LEE.

CHAS. F. STANSBURY.

The author of the above letter has been some eight years in the Patent Office, is Secretary of the National Institute, and was the representative of the government at the great London exhibition, whose report has been printed by Congress.

We know of no good reason why the readers of the *Farmer* should not be informed of the character and conduct of their public servants at Washington, so far as the promotion of agriculture is concerned. We shall state only facts, and let others draw inferences. The charge that we have made, since our connection with the agricultural press, "political stump-speeches," is false. So far from the truth is it, that at the two last Presidential elections we refused to vote at all, although at the polls and entitled to vote. Nor have we ever smuggled in, as many do, a political bias in our agricultural writings. It is due to history that the causes which have prevented any success at the federal metropolis, by those who have toiled for the great farming interest, should be recorded. There has been, and still is, a great deal of corruption in Washington; and we can hardly render the country a better service than aid in its exposure, to secure a much needed reform at some future day.

In reference to the agricultural progress of the several States, we have private vouchers enough to fill a large volume, some of which we shall publish from time to time under the head of "Historical Memoranda." In a work entitled "The Future Wealth of America," by FRANCIS BONYNCE, on page 52 may be found the following:

"Taken from the three daily papers of Charleston, S. C.

"At a meeting of the Agricultural Society of South Carolina, held at their farm on Tuesday, 15th inst., (July, 1851), the enterprise of Mr. BONYNCE, late from India, to introduce tea-culture, as well as that of coffee, the date, mango, indigo, and other tropical plants, into the State, was brought to

the notice of the Society. Mr. BOYNGE being present, the Society came to the resolution that the enterprise is a laudable one, and calculated to advance the prosperity of the country. They highly approve of the views of Dr. LEE, of the Patent Office Department at Washington, as published in the *daily papers of our city recently*, and tendered to Mr. BOYNGE the use of their farm on which to commence his experiments. (Signed) JOS. O'HEAR, Secretary.

What the "views of Dr. LEE" were, of which the South Carolina State Society "highly approved," will appear at another time.

Under date of "Nashville, August 2d, 1851," MARK R. COCKRILL, Esq., writes to us as follows :

"DEAR SIR: Your esteemed favor of the 24th ult. is received, covering a communication on the subject of a National Agricultural Society. I have shown it to one of our editors, and it will appear next week in the *Banner*. The object at which you aim meets my decided approbation; but I regret to say that we have no State Society now founded to unite in aiding this national project."

To promote the organization of State and county societies where none existed, we have labored for years, with a view to unite the whole in one combined effort, and thereby elevate the profession of agriculture above all other professions, whose numbers and wealth are so much inferior. Why can not all cherish sufficient patriotism to embrace their whole country, and cordially co-operate for the advancement of a great and common interest ?

TEA-CULTURE—THE INTRODUCTION OF TROPICAL PLANTS INTO THE UNITED STATES—THE VITALITY OF SEEDS, &c.

ALTHOUGH the following letter was written more than three years ago, yet, if we mistake not, it contains facts and suggestions that will interest the reader :

GENTLEMEN: Believing that a judicious experiment to introduce the culture of tea-plants, and the manufacture of tea in the Southern States, will prove successful, I desire to make a few suggestions on the subject, as my name has appeared in the *Courier* in that connection.

The Horticultural and Botanical Societies of London, Paris, and Berlin, have had large experience in procuring both seeds and plants from all parts of the globe, and they have found, what few Americans seem to understand, that seeds sprouted, and thereby transformed into young plants, may be conveyed by sea in all latitudes with much greater safety than undeveloped germs, whose vital principle is destroyed by slight changes in the oil, starch, sugar, or protein substances contained in seeds. Without the presence of atmospheric air or moisture, the natural heat of a tropical climate will effect chemical changes in the organized elements in most seeds and buds, which prove fatal to their vitality. Young plants, not seeds, should be brought home.

So promising is tea-culture in the British possessions in Asia, that great efforts are now making to extend the business. The *London Gardeners' Chronicle*, received by the last steamer, announces "the most gratifying and important intelligence, brought by the Indian mail, that Mr. FORTUNE'S labors in procuring a supply of the finest tea-plants, and Chinese workmen had reached a successful issue." He brought to Calcutta, from the most celebrated tea districts, eight experienced manufacturers, the first that ever left their native country, together with a large assortment of implements, 17,000 *germinating* seeds, and 1,749 tea-plants. Government took so deep an interest in Mr. FORTUNE'S enterprise, that it furnished a steamer to convey him, his Chiuamen, plants, and implements up to the plantations of the Tea Company, which already produce about 200,000 chests.

Many Chinese are beginning to emigrate to California, and tea-plants might easily be procured at Shanghai, from which port there was shipped to the city of New York 8,423,692 pounds of tea from July 1, 1850, to February 1, 1851; and during the same seven months 17,038,125 pounds were exported to England. (See *Merchants' Magazine* for June, page 749.) Without troubling you with the detail of information gathered from various sources, I feel warranted in expressing the opinion that the time is not far remote when Southern enterprise and field hands will excel the Chinese as much in the simple operations of picking and curing tea leaves, and growing the trees, as they now do in growing, picking, and ginning cotton. In case an experiment is to be tried, a few skillful manufacturers from China should be procured as soon as a plantation affords any considerable quantity of green leaves. Steamers will soon make regular trips between Shanghai and San Francisco, and if one familiar with horticultural operations, or vegetable physiology, is employed to procure young plants, any desirable number may be obtained. In putting up two cases of camelias from the Botanic Garden of Calcutta, Mr. FORTUNE mixed tea seeds with moist earth in China, and when the ship arrived at Calcutta he took out 16,000 seeds which were sprouted and growing.

This republic is probably the only civilized nation in the world which has no national society, either botanical, horticultural, or agricultural, to promote the introduction from abroad of whatever is useful or ornamental in the vegetable kingdom; and yet it is not easy to find under one government so wide a range of climates equally favored by seasonable rains for the almost boundless production of the valued fruits of the earth. Because a good Providence has done so much for us, shall we ungratefully refuse to do any thing for ourselves? Instead of importing from year to year so many bushels of *dead seeds to throw away*, through the government agency, it should give one-half the money expended for agricultural purposes to an independent board or association, fairly representing the agricultural interests of the whole country, and let such association transact a strict professional business, in a common sense and scientific way. If the friends of rural science and improvement at the South will unite with those of the Middle, Northern, and Western States, I have reason to believe, from some correspondence on the subject, that such a society may be organized on a permanent basis. Life is wearing away, and is always uncertain, and whatever good we intend to do in our generation we had better be about it. Is it not plain to every reader that the agricultural interest of the United States needs nothing so much at this time as an intelligent working head? Neither talent, nor patriotism, nor money is lacking; nothing is really wanting but *organization* among the friends of agricultural improvement to achieve the most honorable and useful results. Science belongs to no party nor section; and hitherto it has done next to nothing for the owners and cultivators of American soil. Is this always to be our condition? For one I do not believe it. Knowledge is too valuable for that, and something effective will soon be done to turn the labor, the capital, and the intellect of this country to a better account. There are before me wheat and oat plants, grown expressly to test the natural inherent powers of different seeds to yield unlike crops when treated alike in fertility of land and tillage; and the result is a difference in product of sixty per cent. in the oats, and forty-six in the wheat. How few planters, farmers, or gardeners have ever measured the vital force of different seeds? Friends, vegetable and animal physiology should no longer remain a sealed book. Let us open it and read the first lesson.

Yours, respectfully,

DANIEL LEE.

Strange, is it not, that the young men of this country cannot be persuaded to study the vital force of seeds? Farmers often change their seed wheat, seed corn, and other seeds, to obtain more vigorous germs. Why, then, should not the natural laws which govern both the improvement and deterioration of agricultural seeds and plants, fruit and forest trees, command our best attention? To the popular mind, vegetable and animal physiology are indeed a sealed book. If the United States had an efficient national society to employ such a man as FORTUNE to introduce Tea-Culture, the country would soon possess another staple second only to that of cotton in its commercial advantages. But for some reason our three hundred agricultural societies fail to sympathize with each other. They remind one of the dark ages under the Heptarchy of England, when seven kings were armed to the teeth, ever ready, and ever expecting battle. It is the deplorable want of civilization that makes us expend a thousand dollars at militia trainings, and for military purposes, where we give one to increase our agricultural knowledge.

STUDY THE INSECTS THAT DAMAGE THE FARMER.

For some reason Agricultural Entomology is less studied and understood than almost any other branch of rural knowledge. This general neglect of an important science is doubtless one cause of the alarming increase of destructive insects in many parts of the country. Let the subject be fully and critically investigated, and the result will show that man unwittingly destroys thousands of birds which Providence intended to subsist on insects, and keep their larvæ from devouring the farmer's wheat and other grain, and the gardener's vegetables and fruits. If we study Nature's laws, we shall discover the important fact that no great class of animals, or plants, can be exterminated without inflicting severe and irreparable damage on the human family. Even insects perform important functions in the economy and exact balance of organic nature. Subsisting mostly on vegetable substances, they check the strong tendency, in many districts and countries, to the over-production of plants. If there were no insects and no birds, the existing relations between the animal and vegetable kingdoms could not endure a year.

The order of Nature would be broken up, and the growth of forests and grasses would extend out of all proportion, as compared with the graminivorous and carnivorous mammalia. The change might not arrest public attention at first, but soon the new order of things would indicate the usefulness and necessity of both insects and birds. These were created because *the plan* of the Creator would be incomplete without them.

If this feebly expressed view of created beings be sound, man can not nearly exterminate the birds of a country and not, in effect, augment indefinitely all the insects that prey upon his crops, and greatly annoy his domestic animals. We wish to lay the axe at the root of the tree, and show that natural laws demand the multiplication of the beautiful feathered tribes, whose music has a deeper meaning as the voice of the Invisible, than man with his murderous guns has yet dreamed of.

Suppose the State of New York had a thousand robins where it now has one; how many caterpillars, moths, worms, grubs, and other voracious insects would these birds consume? If public opinion were only enlightened on this subject, so as to protect all insectivorous birds, we should soon cease to complain of curculios, weevils, peach tree and apple tree borers, pea-bugs, and a hundred garden bugs, flies, snails, grasshoppers, locusts, cotton, and tobacco worms. We have had opportunities for studying most of these depredators, and regard the unnatural destruction of birds, or their expulsion from all so-called civilized communities, as the principal cause of the increase of insects. The reproductive powers of these is incredible to one who has paid no attention to entomology. There is not an animal nor a plant known to science upon which no insect subsists. The larvæ of mosquitoes consume myriads of infusoria that grow in stagnant water. The millions of "wigglers" that may be seen in reservoirs of rain water, grow and wax fat on something more substantial than air or pure water. By consuming the organized elements in which decay has already commenced, insects often purify water and the atmosphere. The young of a common flesh-fly adds 200 fold to its weight in 24 hours. This can only be done by the enormous consumption of very nutritious food. Imagine an ox that weighs 1000 lbs. adding 199,000 lbs. to his weight in a day, or a year!

If it were not for the fact that insects destroy one another, and thus keep down their numbers, they might, perhaps, entirely exterminate all other living things, and then die from starvation, leaving not a plant nor animal on the globe. Among all the 100,000 different plants, and 200,000 or 300,000 different animals, how wonderful that no family of either obtains the mastery, and rules supreme! Plants and animals maintain a perfect republic; the balance of power between them all is complete. Man, by his superior endowments, is able to disturb this comprehensive and delicate balance more than any other order of beings; and he can never fulfil his high destiny until he studies, comprehends, and obeys the laws of his Maker. To this standard our agricultural and horticultural knowledge and practice must rise before we have a right to expect complete success. Let us then study Nature and observe how nearly all the feathered tribes, with which we are familiar, hatch their young at that season of the year when insects and their larvæ most abound, when so many millions are daily consumed to feed the voracious broods of rapidly growing birds. In Maryland and Virginia, large flocks of turkeys are reared expressly to be driven through tobacco fields by children "to worm the crop." A turkey from the time it is large enough to eat a worm till it attains its full growth, will consume an incredible number of insects, and forcibly illustrates an important natural law. Barnyard fowls, doves, and pigeons may also be cultivated at a profit. Of all the works written on Poultry, we have never seen one that treated the subject in a truly scientific and philosophic spirit. When an adult turkey eats 100 ounces of dry corn, what will the excrements formed by this corn weigh after they are dried? Who has investigated this matter?

In their relations to agriculture, both ornithology and entomology are much less

understood than many suppose. The learned and scientific men who have cultivated these departments of natural history, have been unacquainted with agriculture, and their language is too classical and little known for their books to be much read by farmers. In future numbers of this journal we shall endeavor to describe in familiar terms the habits and transformations of those insects most injurious to agriculturists.

THE BREEDING, REARING, AND FATTENING OF SWINE.

THERE is abundant room for the exercise of skill and talent in the breeding, rearing, and fattening of swine. Of all nations, the United States have the greatest facilities for prosecuting this branch of husbandry in the most economical manner, by reason of the fact that Indian corn may be grown by American farmers on which to feed hogs, cheaper than in any other country. It is our superior natural advantages for keeping this class of animals that makes the swine of American husbandmen excel their sheep in numbers nearly ten millions. Tennessee has four times more hogs than sheep; and the business of producing pork, lard, and bacon for foreign consumption, extends much more rapidly than wool-growing, although a pretty high tariff has been brought to bear in favor of the latter.

Less attention is paid to the breeding of hogs, generally speaking, than to any other domestic animals. This neglect leads to their deterioration in many districts, particularly where pork or bacon is not a staple of agriculture. The remedy lies in keeping a smaller number, selecting both males and females with the greatest care as to form, quiet habits, tendency to take on flesh, and the females should be good nurses. Breeding in-and-in, or in too close relationship, is a common error with farmers who allow their hogs to run in large herds, and with little regard to males. Carelessness in the propagation of swine can not be too severely censured; for beyond all question it imposes a needless loss on the country of many millions of dollars every year.

One should breed large, or small, or medium sized hogs, according to the market, and the cheapness with which they can grow the food consumed by this kind of stock. As a general rule, hogs of medium size, well fattened, are most desirable, although instances are not rare where packers and hog buyers pay a premium for heavy porkers. They are said to cut up to a better advantage, and yield a larger cash return per 100 pounds. The intelligent farmer will readily learn what his market calls for, and meet it in the most economical way. Having wisely selected that breed which suits his circumstances best, he will not allow his sows to bring up more pigs than they can fairly supply with milk, unless he has the milk of cows to aid in pushing them forward in the first two months of their existence. Where hog-raising is prosecuted on an extensive scale, pigs are wholly dependent on their mothers for nutriment for some weeks when young; and then is the time when their constitutional powers and habits are mainly fixed for life. A pig once seriously stunted, is irreparably damaged; and we can not too earnestly insist on the policy of attempting to rear no more than one can feed well all their days. Cheap meat—that is, meat made at a small cost to the producer, is that which is the product of cheaply grown food, not that obtained from half starved pigs, shoats, and stock-hogs. It is all-important to the farmer who makes fat hogs his principal crop, that he understand the art of producing clover, peas, oats, and corn in the cheapest possible manner. Fresh clover fields are exceedingly valuable as ranges for large herds of swine; they may even be wintered on good clover hay, although corn, peas, oats and roots are cheaper winter feed. To produce meat at the minimum cost, whether pork, beef, or mutton, one must have rich land. The farmers of New York and New England can not compete successfully with those of the richest portions of

Ohio and Indiana in producing fat hogs, because they neglect to improve their lands with a view to have them equal to the best on the Scioto and Wabash rivers. To make millions of fat hogs on lean land as cheaply as it may be done on fat land, is an impossibility. But if the farmers in the Atlantic States will first fatten their land, it may be continued so as easily as any land at the West. One great advantage of pork-making is, the facilities it affords for the improvement of one's farm; for all the crops being consumed on the land, it regains not only the mineral elements of said crops drawn from the soil, but a considerable share of the organic elements taken from the atmosphere. It is impossible to rear and fatten hogs and not make a good deal of rich and valuable manure; but it is easy to allow manure to be dropped in the woods, or in low swampy grounds, where it is not needed, and where hogs are allowed to run. The art of rearing hogs at the greatest profit includes the husbanding of all the dung and urine produced by them in the best possible manner. In this way alone can one economically fatten his corn and clover fields as well as his hogs. Let them have both shelter and water in the lots where they feed, or are fed. While young they need a reasonable amount of exercise to develop muscle and bone, and for their health. In a state of nature in forests, swine take considerable exercise in searching for their daily food; and in this way they acquire great strength of limb and muscle, and remarkable constitutional powers of endurance. Many families of swine are injured by too high feeding when young; and this remark will apply to shoats, horn cattle, and some of the larger mutton sheep, as kept in England. Excessive fatness is so unnatural a condition as to amount to a positive disease; and if long continued from birth till death in a family, its constitutional powers will gradually fail, and the race become extinct.

There is a golden mean in this matter, which the stock-grower will do well to study and follow. If allowed to range in a good clover, pea, or oat field, growing hogs will take just the exercise that is best for them, and salt as well as water should be provided, adding a little sulphur and ashes. When put up to complete the fattening process, if one can not conveniently grind as well as cook the grain consumed, it should, at least, be boiled in large kettles. This is not an expensive operation, and cooking, by rendering the starch in corn or other feed soluble, like gum, materially increases the nutritive value of all grain and tubers fed to swine. This does not impair the quality of the manure, while it augments the yield of fat in the animal. Hogs should be kept reasonably warm, dry, and be regularly fed. As a matter of profit, care should be taken not to feed too long before selling or killing them. On the other hand, one may not feed long enough to attain the maximum profit. As in other departments of husbandry, experience and observation can alone make one skillful in the breeding, rearing, and fattening of swine.

THE CASTOR BEAN.—We find in the *Tropical Farmer*, published at Ocoola, Florida, the subjoined letter on the culture of the *Palma Christi*, or Castor Bean, and the mode of expressing the oil. It was written by a gentleman of Perry county, Ala., to his friend at Tampa Bay:

You wish to get information as to the manner of raising the Castor Bean, and the yield in seed and oil to the acre, and the kind of press used for extracting the oil. I will endeavor to answer your queries as you have put them down, though as far as I have been engaged in it, I have lost money owing altogether to the difficulty of raising the seed in this climate. I have found in two years past that the crop promised to do well until the middle of June, at which time a drouth set in which cut off the crop. I have not been able to raise more than five bushels of seed to the acre. If a man could be sure of twenty or twenty-five bushels to the acre, and was prepared to manufacture the oil, it would be a good business. From the statements you make about its growth in your county, I should think good land ought to bring twenty-five to thirty bushels per acre, (46 pounds of seed is considered a bushel of Castor Beans, though mine did not weigh but 33 to 39 pounds to the bushel); 46 pounds of seed ought to make two gallons of oil. I have cultivated two kinds, the large red and a green kind that pop out of the hull by laying them on a clean yard in the sun. I

have found here the green to be the best, though they require prompt attention in saving, or there is great loss in its popping out in the field. It must be cut as soon as the bottom part of the rice mill to clean it, but would give good time to gather. I do not know which would produce the most in your country. The seed, I think, is equally good for making oil. We have another kind of green that grows here—seed quite small and hard to hull. This I do not think would be profitable on account of the difficulty in hulling, though they are rich in oil. I plant in rows five feet apart, and about three feet apart in the row. With you, if the same stalk continues to bear from year to year, I think a greater distance ought to be given. My press is made nearly like the four-screwed press used in compressing cotton—the wheels being made stronger, it requiring much greater pressure to extract the oil than to compress the cotton. To build such a one as mine now, would cost about \$5000. I can press on mine in ten hours 100 gallons of oil.

They use at the north-west two kinds of press, one a simple screw, that works in a cast iron frame. This kind will cost about \$250, and will make about twenty-eight to thirty gallons of oil in nineteen hours, if well attended to. The other is a hydraulic press, that costs, perhaps, \$4000 or \$5000, and would make, perhaps, forty or fifty gallons of oil per day. The barrels should be made of good white oak, and if not well made will not hold the oil. The process of clarifying the oil is rather a difficult one, and requires, to do it well, both practice and good judgment, as it has to be managed very differently in its different stages. The person who boils it must know from its appearance how to vary its management, or the temperature of the fire in the least mismanagement, will color the oil, and make it unsaleable. If boiled in its first stage too fast, it turns of a red color; if boiled too slow it has the same effect, as it leaves the impurities that should be thrown on the top and skimmed off in the oil, and stains it—if heated too hot it burns and colors it.

I will endeavor to describe the process that I used: The oil from the press should be strained into the kettle (which should hold about sixty gallons) through a coarse bag, made of coarse grass skirting—putting to fifty gallons of oil about six gallons of water—bring it to boil by a slow fire—after it commences boiling, keep it just at that stage that the dirt and scum will rise freely, (skim this off and put it in a barrel or tub to be strained in the next boiling, as a considerable quantity of good oil will be taken off with it,) when the dirty scum has all ran off, and the oil begins to have a somewhat milky appearance, the fire must be a little slacked, but kept high enough to cause the white scum to run off freely, which must also be skimmed off to be put with the next boiling. The oil, if well managed at this stage, will soon get quite clear, and will require less fire, as the water evaporates from it—it must be continued to boil quite slow until all the water has evaporated, which may be known by cooling some of the oil in a phial, set in cold water—if the water is all out it will be quite clear in the phial when cold, but as long as the least milky appearance is left in it, the evaporation must be kept up. Great care must be taken at this stage to prevent burning the oil—only fire enough must be used to keep it simmering—it generally takes from ten to twelve hours to complete a boiling. After it is done it must be strained through a thick satinet bag, into something which will hold oil, and left to settle a few days before barreling it.

I had forgot to mention that I have used about half a pound of loaf sugar dissolved in water, to be put in before or about the time it commences to boil. This, I think, aids much in separating the impurities from the oil.

If you should conclude to engage in this business, and I can give you any further information, I will do so with pleasure. You wished to know if there would be any market for the seed in Mobile or New Orleans. I do not suppose there would be in Mobile, but think they might be sold in New Orleans, to be shipped to St. Louis, at which place they bring a good price, varying according to the price of oil. When oil sells at 75 cents per gallon, seed, I think, is worth about the same price per bushel; when oil is worth a dollar, the seed would be worth about \$1.20 or \$1.25. If oil should be worth \$1.50, seed would bring about \$1.75 in St. Louis. It would, however, be more profitable to make the oil, if you can raise the seed advantageously.

Yours respectfully,

R. W.

MANUFACTURE OF LIME.—The *Wisconsin* gives a description of some lime kilns, recently erected at Milwaukee by Mr. P. C. HALE:

“He has in operation one kiln, 16 by 20 feet in size, and 12 feet high, with an arched roof of brick, containing seven chimneys, and another kiln, nearly completed, much larger than the first, in which he can manufacture 600 barrels of lime per week, and is prepared to increase the number of kilns as fast as business demands. These kilns are so constructed that nearly an equal amount of heat is thrown upon each stone at the same time. In consequence of the arch no cold air reaches the top stones, and the whole contents of the kiln are equally burned, leaving no small stones half burned, as is inevitable in the old fashioned kilns. As it is neither burned too much nor too little, it is purer and stronger than other lime. The kilns are so constructed as to save about one-third of the wood, and one-half of the labor of other kilns, and are burned in fifty-four hours, no matter how large the kiln. It is only necessary to keep the fires properly tended with suitable fuel, to insure a burn with as much certainty and accuracy, as the baking of bread in ovens.”

THE LONDON DAIRIES.—The Yorkshire cow is the great favorite with the London dairyman, as she answers all the purposes of his trade, being a good milker, and when accident or old age renders it necessary to discard her, she is soon ready for the shambles. In Mr. Biggs' dairy, 31 Edgeware Road, London, there are about 400 cows constantly kept; of these, the greater proportion is composed of the Yorkshire breed, of various degrees of affinity between the old Holderness and Durham breeds. There are also some of his cows which are longer in the horn than those already mentioned, and which are no doubt more allied to the original Holderness, or perhaps have long-horn blood in them; while there are others whose horns and general appearance indicate their close alliance with the improved short-horn or Durham breed. Of these, the most valuable is the cross between the Holderness and Durham, as being good, both for the pail and the butcher; on the other hand, the Holderness and long-horns give the richest milk, run soon dry, and are more difficult to fatten, while the pure short-horn gives least milk, but makes most beef in a given time. With these properties to choose among, it is not difficult to decide which of these breeds is most profitable to the London dairyman, whose trade is to sell as much milk as he can, and only to fatten his cows for the butcher when necessity compels him.

A Yorkshire cow in a London dairy establishment is seldom calculated to give less than 20 quarts of milk daily, for the first four months after dropping her calf, and many of this breed have been known to give from 30 to 40 quarts of milk daily for a few weeks after calving. In Mr. Biggs' dairy, 20 quarts a day is the average quantity of a great proportion of his best cows, and many of them would continue in milk all the year round; but as this would be injurious to the animals, and would diminish the yield in the succeeding year, they are intentionally run dry about six weeks before the time of calving.

The whole quantity of milk produced in 12 months, by one of those Yorkshire cows, when fed as in the London dairies, can not be less than 4000 quarts or 1000 gallons. The retail price of new milk is 16d. per gallon, and when sold wholesale to the milkman, the price realized by the dairyman is not less than 1s. per gallon; so that from this data it appears that a cow, giving 1000 gallons per annum, produces 50l. worth of milk during that period. Of course, the feeding is very liberal, and from the high price of green food in the metropolis, is necessarily very expensive. The milking and feeding in Mr. Biggs' dairy is as follows:

- 4 A. M. milked. A good milker can milk 16 cows in 2½ hours.
 - 4 " 1 bushel basket of brewers' grains to every two cows.
 - 6 " 8 bushel of Swedes, or Mangold Wurzel to every two cows.
 - 7 " 1 truss of hay to every 12 cows.
 - 9 " Water; which is the only time they are allowed to drink during the 24 hours in winter, and each cow drinks about 24 quarts. In summer, water is given twice.
 - 11½ " 1 bushel of grain to two cows.
 - 1 P. M., Milked again.
 - 2 " 8 bushels of roots to two cows.
 - 3½ " 1 truss of hay to every eight cows.
- In summer the green food consists of clover, Italian rye grass, or Vetches.

The cows are milked twice a day, which occupies about 2½ hours each time. The cow-houses are cleaned out five times every day, and the gutters kept sweet by allowing water to flow through them. The cows are thoroughly cleaned and combed once a week.

From the foregoing data, the following calculation of the annual expense of house-feeding a London dairy cow may be deduced:

<i>Winter Food, from 1st October to 1st May (212 days.)</i>	
212 bushels of grains, at 6d.,	£5 6 0
13½ tons of Swedes and Mangold, with the tops, at 20s.,	13 5 0
1 ton of hay, at 90s.,	4 10 0
<i>Summer Food, from 1st May to 1st October (153 days.)</i>	
11½ tons of grass, clover, or Vetches, at 20s.,	11 10 0
75½ bushels of grains (or an equivalent), at 6d.,	3 16 6
Interest on capital, 16l., at 5 per cent.,	0 16 0
Hazardous insurance, or annual loss,	0 16 0
Attendance, milking, &c.,	1 5 0
Total expense,	£41 4 6
<i>Produce per Cow.</i>	
1000 gallons of milk, at 1s.,	£50 0 0
Calf,	1 0 0
Manure,	4 0 0
	£55 0 0
Deduct expense,	41 4 6
Profit,	£13 15 6

The daily expense is nearly 2s. 3d. per cow, and the daily yield of milk throughout the year nearly 2½ gallons; and no London dairyman will long keep a cow that does not give 2½ gallons per day. In the above calculation no charge has been made for rent of premises; but even although 1l. per cow be struck off for this item, the profit is still abundant.

In speaking thus highly of the Yorkshire, as in every way well adapted to the purposes of the

metropolitan dairyman, it must be admitted that she is neither so good for a cheese or butter dairy as some of the smaller breeds. In the former case, quantity of milk is the desideratum, while in the two latter it is quality or richness. Were the Yorkshire cow employed either for the production of cheese or butter, the refuse—whey, and butter milk, or skimmed milk—would be much greater than that yielded by milk of a richer quality; and, in consequence of this, the profits would be considerably diminished. In a milk dairy there is no refuse; and should the consumers in large towns complain of the inferior quality of the milk sold to them, they should remember that they can not enjoy the luxuries of the country and those of the town at one and the same time. The consumer is entitled to be served with the milk as it comes from the cow; but when he insists on having grass milk in the middle of winter, he has no reason to complain should his importunity force the milk-seller to adopt the harmless device of counterfeiting an article to please his customer's eye, by the infusion of a drop of burnt sugar, to give the milk the rich yellow appearance which it usually possesses when the cows are fed on grass.—*Mr. Haxton, in "How to Choose a Good Milk Cow."*

GUANO, SUPERPHOSPHATE OF LIME, AND CHAPPEL'S FERTILIZER FOR WHEAT.—Last fall I cut two acres of corn off to seed down wheat. Part of the land was a mellow loam, and part of it stony—the stone a gray sand stone. I measured it off into three pieces—two pieces half an acre each, the other one acre, in the middle, and drilled in the wheat with one of MOORE'S patent grain drills, the first week of October. On one-half an acre I sowed 150 pounds Peruvian guano before sowing; on the other I sowed 160 pounds of superphosphate of lime one week after the wheat came up; and on the one acre piece 600 pounds of CHAPPEL'S fertilizer before drilling the wheat in. The guano cost \$4.50, besides preparing it for use; the superphosphate \$4.80, and the fertilizer \$8.60. There was no manure of any other kind put on either piece. For want of barn room I did not cut and put each lot separate; I can not therefore state the yield as accurately as I would like. Last fall I could see very little difference in either piece, but in the spring the guanoed piece had a darker green appearance, and was thicker on the ground than either of the other pieces. When the wheat came out in head, the guano piece was about four inches taller than the others, and those who helped cut it, with myself, say that there is about one-third more to the ground than on either of the others; the wheat better filled, and a better yield of straw.

Last fall I plowed in 160 pounds guano on three-fourths of an acre of corn stalk ground, where I had corn two years in succession, the ground inclining to clay, and where the corn was the smallest in the field. On a half acre, rather better land, I plowed in six large ox cart loads of horse stable manure, kept under cover; the land was also manured in the spring for the second crop of corn. Between these two pieces I could see no difference in the wheat when cut, except that the manured was riper two or three days sooner, owing, I suppose, to the land being higher. The guano in both cases showed itself to the drill marks.

My conclusion is, that guano is cheaper than manure for wheat, as it costs less per acre. We have to pay \$1.50 for an ox cart load of manure in West Chester, and haul it three miles, which is worth half a dollar more. When I haul wood to West Chester, I haul manure as a back load, or I could not haul it for that price. I would prefer good barnyard manure to either of the other three, if I could make enough on the farm for each field. But the farm being out of order when I purchased, I can't make enough as yet, using, as I do, part of it for potatoes in the spring. I put some Patagonian guano and superphosphate of lime in the furrow for potatoes, along side of manure this spring, and when dug I may give you the results of the experiments.

The kind of wheat raised was the Mediterranean, drilled one bushel and three pecks per acre. *J. F. I., in Pennsylvania Farm Journal for August.*

WOOD GAS IN GERMANY.—Two years ago, DR. PETER KOFFER, in Munich, invented this kind of gas for light; but, in order to make it practicable by suitable apparatus, he invited to a share in his invention Mr. E. R. BREISACH, an eminent practical chemist in Augsburg, to whom the merit is due of having brought it to general use in many cities of Germany and Switzerland. Mr. BREISACH published a report in the *Augsburg Allgemeine Zeitung*, 20th May last, in which he says it is beyond cavil that wood gas can be supplied and used on the largest scale. The streets of Bayrouth (a large city in Bavaria), are lighted with that gas, and eye witnesses from all parts of the country, confirm unanimously that in brilliancy it is far superior to coal gas. The intensity of its light is solely ascribed to chemical purity. For my investigations here in Bayrouth, I have made use as well of BUNSEN'S Photometer as of ordinary wax light, as I did in former investigations at Augsburg with coal gas, and I found an average, as the result of fifteen experiments on different days, and at different hours of the day, that under a pressure of 6-7 millimetres, and with a breadth of flame of 21 lines, and a composition of gas of 5 feet per hour, 15 3-10 power of light is produced, while coal gas, under the same conditions, yields only 10-12 light power. For private consumers it may be agreeable to be informed that with flat burners, consuming 4 7-10 cubic feet per hour, they have a light power, of 14 7-10, and with 3 1-10 cubic feet, a light power of 8.

Should further experiments confirm the above statements, the use of wood gas will become general in this country, where wood so abundantly abounds.

WHEAT FLY, ERRONEOUSLY CALLED "WEEVIL."

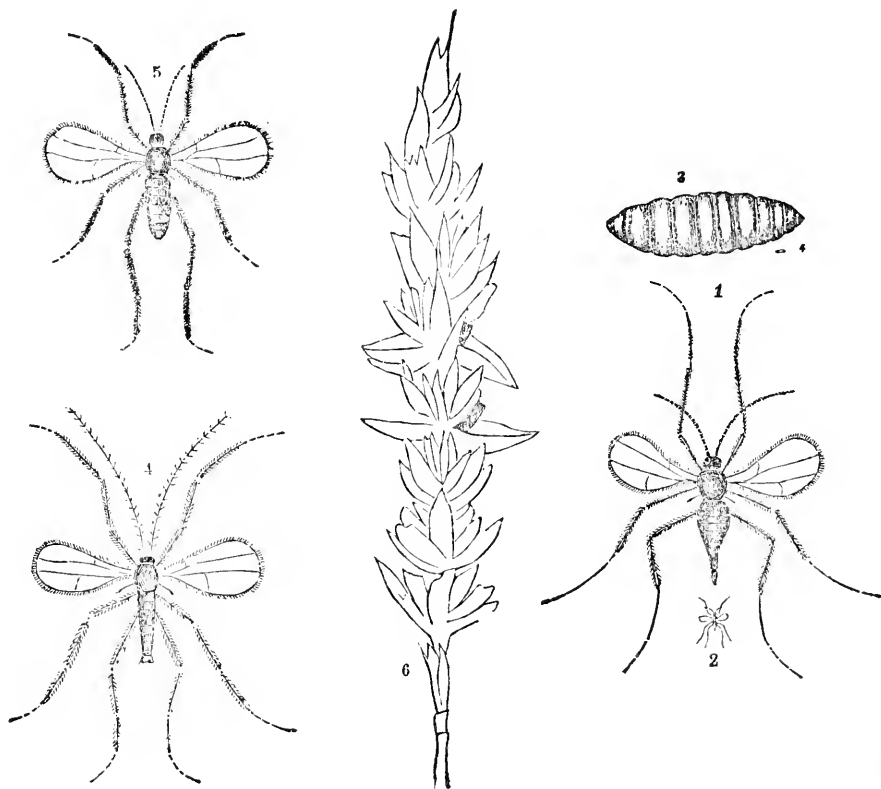
THE scientific name of this insect, according to LATREILLE, KOLLAR, CURTIS, and HARRIS, is *Cecidomyia tritici*. Like the Hessian fly (*Cecidomyia destructor*), the wheat fly or midge belongs to the order *Diptera*, LINNÆUS, (two-winged flies), and to the genus *Tripulidæ*, until it was divided by LATREILLE, there being one hundred and thirty species, by forming the new genus *Cecidomyia*, which includes a number of flies that deposit their eggs on the ears and leaves of wheat, and other cereal plants.

Figure 2 in the plate is intended to represent the insect at its natural size, but its body being only about a line in length (the 12th of an inch), the drawing is larger than the fly. Figure 1 represents the female much magnified, and figure 4 the male also magnified.

Farmers seeing numerous little orange-colored worms in the heads of wheat, have naturally believed them to be the offspring of a weevil, and hence they speak of the malady as "the worm" or "the weevil" in their grain. The proper name is "Wheat fly," whose habits are unlike those of the Hessian fly. The larvæ of the wheat fly undergo pupation in the ground; those of the Hessian fly in the sheaths which surround the stems of wheat at or near first and second joints above the earth, from which the perfect insect emerges. The wheat fly produces but one generation in a year; the Hessian fly produces two. The larvæ of the Hessian fly suck their support from the juices that flow in the stems of growing plants, while those of the wheat fly gnaw and eat the kernels of wheat. Hessian flies cause wheat to crinkle and fall down from the weakness of the straw near the ground; wheat flies cause the heads to ripen prematurely, and the glumes or chaff to open, giving yellow birds and others an opportunity to devour the worms on the grain. The female wheat fly is armed with a long retractile ovipositor, with which she penetrates the glumes and deposits her eggs, either on the young seeds or in the middle of the blossom, from which a seed is developed. The larvæ jump on being touched; they have no feet, are of a citron color, wrinkled or warty at the side edges; the head terminates in a point, and the posterior end is truncated. The pupa is slender, pointed at both ends, and of a reddish color. Figure 3 represents the pupa greatly magnified.

The Rev. WILLIAM KIRBY, of England, was the first to give a scientific description of this midge, and apply to it the term *tritici*, the genitive of *triticum* (wheat.) Dr. HARRIS and the lamented WILLIS GAYLORD were among the first to describe the wheat fly in this country. Mr. GAYLORD copied the drawings of it in a prize essay, published in the *Transactions of the New York State Agricultural Society* for 1843, from KOLLAR's work, as translated and illustrated by J. and M. LONDON, of London, in 1840.

Dr. FITCH, of Salem, in this State, has studied this insect for some years, and published in the *Quarterly Journal of Agriculture and Science*, and in the *Transactions of the New York State Agricultural Society* for 1845, the fullest account extant of its natural history. Mr. S. W. JEWETT says the wheat fly first appeared in Western Vermont in 1820; (*N. E. Farmer*, Vol. 19, p. 301;) but it was not until the years 1828 and 1829 that it became so abundant as to attract the attention of the public. In former years, when Maine was more of a wheat-growing State than it has been in the last decade, the *Maine Farmer* said: "A million dollars would not pay the damage it has done to the State of Maine alone." Dr. FITCH, who resides in Washington county, estimated the injury done to the wheat crops in that county in a few previous years at \$500,000. Indeed, the farmers in the Hudson river counties and along the Mohawk were induced to abandon wheat-culture mainly to avoid the ravages of the wheat fly. Ten years ago, according to Mr. GAYLORD, it first appeared in Onondaga county; it is now in the Valley of the Genesee; but with what results time alone can determine.



DESCRIPTION OF PLATE.—Fig. 1, Female Wheat Fly, magnified; 2, Natural size; 3, Pupa or chrysalis, magnified; 4, Male, magnified. Fig. 5, *C. tergata*; 6, Head of wheat, showing the Larvæ deposited on the kernels.

The only reliable preventive of damage from this insect hitherto found is, to abstain from wheat-culture in neighborhoods where it prevails to an injurious extent. Early seeding is generally recommended by those wheat-growers who have had to combat this enemy. It is exposed to the depredations of other insects which deposit their ova in the larvæ of the *Cecidomyia tritici*, and the parasites hatching, devour the maggots of the wheat fly.

Figure 5 represents another variety of *Cecidomyia*, called *C. tergata*, which differs but little in color from the insect already briefly described. There are other varieties of wheat flies with scientific distinctions, but they differ so little from the *Cecidomyia tritici* that the distinctions made are of no practical value to the farmer.

Insects injurious to the farmer are on the increase in this country, and we have often expressed our regret that agricultural entomology should receive so little attention from agricultural societies and naturalists. As the pupa of the wheat fly passes the winter but an inch or so under ground, it is possible that fall plowing will turn up these chrysalids, and expose them to be eaten by birds, moles, and other insectivorous animals. It is not likely that freezing will kill the pupa of any fly buried slightly in the earth. Birds and toads are the natural enemies of the young of all insects, and they should be kept—or at least not harmed—that they may multiply and destroy insect depredators. Insects multiply preternaturally because man exterminates their enemies, and thereby nullifies the balance of organic nature.

MAPES' IMPROVED SUPERPHOSPHATE OF LIME.

ONCE more we are under the necessity of referring to this article. It is not that we have any pecuniary interest in this matter, or that, as Mr. MAPES' asserts, we are sold to puff the superphosphate manufactured by a rival house. We are personally unacquainted with Mr. MAPES, Mr. DE BURG, Mr. PATTERSON, and all other manufacturers of superphosphate. Their commercial interests sink into insignificance when compared with the chemico-agricultural principles involved in this question—principles which, to our view, lie at the very foundation of a judicious rotation of crops, and of a rational system of agriculture. From the introduction of superphosphate of lime we anticipate great improvements in American agriculture. We have as high an opinion of the value of superphosphate as a fertilizer as has Mr. MAPES; and we have as earnestly advocated its extensive use. What we object to in Mr. MAPES is his extravagant praise of his own catch-penny "improvement" in his *Working Farmer*—his recommending it as the best and cheapest manure for *all* crops, and his absurdly ridiculous assertion that his "improved superphosphate of lime" can not be manufactured in England for one hundred dollars per ton, and that, to his certain knowledge, if it could be, it would immediately take precedence of all other manures.

Of the articles in which we have stated our reasons for the views we entertain on this subject Mr. MAPES has taken no notice. Opinions without reasons are of little consequence, but as we have previously given the reasons, we may be pardoned for again stating, as briefly as possible, our opinions on this subject.

As regards the value of superphosphate of lime, we know that for turnips and ruta bagas it is *the best manure in the world*, but to obtain its full effect it must be *drilled with the seed*. In consequence of this, the improvement of Mr. MAPES, which consists in the addition of Peruvian guano and sulphate of ammonia to the mixture, is a *decided injury*, as these substances are injurious to the germination of the seed when drilled with it. For clover, mangel wurzel, cabbages, carrots, celery, lettuce, and tomatoes, superphosphate is a good manure, though were both the same price we should prefer Peruvian guano. For wheat, barley, oats, potatoes, and, we believe, though we have no experiments of our own to sustain the opinion, that for corn and timothy superphosphate of lime, in ninety-nine cases out of one hundred, will be found of no essential value. These opinions are directly opposed to the teachings of that large class of agricultural chemists to which Mr. MAPES belongs, who think that the composition of the ashes of plants afford a true index of the relative proportion in which the elements of plants should exist in the manure applied to them. This is a very plausible deduction, but, unfortunately, like many other beautiful theories, experiments and the experience of practical men prove it to be unsound. For instance: the ash of wheat and of the cereal grains generally contains 50 per cent. phosphoric acid, while the ash of turnips and ruta bagas contains only 10 per cent. Yet an extensive series of carefully conducted experiments, as well as the universal experience and practice of English farmers, prove that phosphoric acid is of no direct benefit to wheat and to the cereals generally, while for turnips and ruta bagas it is the most essential element of a manure. Thousands of tons of superphosphate are annually used in England as a manure for turnips, while from personal observation we know that superphosphate is never used as a manure for wheat, and is not even recommended by the manufacturer as a manure for any of the cereals.

Again, this *improved* superphosphate of lime, according to Mr. MAPES' certain knowledge, can not be manufactured in England for less than \$100 per ton. This we have previously shown to be a very silly mistake, inasmuch as phosphate of lime, sulphuric acid, guano, and sulphate of ammonia, the ingredients which Mr. MAPES says he puts

in his manure, are cheaper in London than in New York; and further, we have said, and are able to prove, that if S. W. JOHNSON'S analysis of MAPES' improved superphosphate of lime can be relied upon, there is a superphosphate of lime made in London, in every respect as good as Mr. MAPES', and of which many thousand tons are annually sold at wholesale for \$28.22 per ton.

This brings us to another point. The analysis of "MAPES' improved superphosphate of lime" by S. W. JOHNSON, published in the *Country Gentleman* of March 3d, has been pronounced by Mr. MAPES erroneous; and he stated that the error lay so palpably on the face of it, that if no one else pointed it out he should feel obliged to do it himself. For the credit of science be it recorded, that there is at least one other chemist in the United States beside Mr. MAPES who has discovered the errors of Mr. JOHNSON'S analysis. This learned individual is Dr. ENDERLIN, of New York—according to Mr. MAPES one of the first chemists of the age, and a gentleman who, according to his own statements, has made many valuable discoveries in chemical science. We are rather surprised that such a great and learned man should be so much a sycophant as this reply to S. W. JOHNSON indicates.

Were Mr. JOHNSON at home we should, of course, not interfere in the controversy; but as that gentleman is now in Europe, it may not be out of place to examine briefly this attack on his scientific reputation.

The first great error Dr. ENDERLIN points out is, that Mr. JOHNSON calls the phosphate of lime found in bones, coprolithes, apatite, &c., &c., "neutral" phosphate instead of "basic" phosphate; he gives the true composition, but makes a mistake in the name. To correct this previous nominal error, the learned critic devotes two columns of closely printed matter. Now, Mr. JOHNSON was writing for practical agriculturists, and wished to make his meaning as intelligible as possible. He doubtless knew, as well as the profound Dr. E., that there were other compounds of phosphoric acid and lime; but he also knew that the only two compounds that concerned the agriculturist in relation to superphosphate were the bone earth phosphate of lime, and the superphosphate of lime; the one insoluble in water, the other quite soluble. Now, to convert the one into the other we add sulphuric acid, which takes away a portion of lime, producing a compound containing more phosphoric acid than the original phosphate. Mr. JOHNSON calls the first compound *neutral* phosphate, and the other the *acid* phosphate. Can Dr. E. give us two names that would convey a more distinct idea of the two compounds?

Another error is thus stated: "That no phosphoric acid is *set free* which could combine with the undecomposed phosphate (as Mr. JOHNSON thinks to be the case) is easily to be understood from the above exposition of the chemical process." The exposition is this: the phosphate of lime contains three atoms of lime united with one atom of phosphoric acid; the superphosphate of lime contains one atom of lime united with one atom of phosphoric acid. Now, when we add to phosphate of lime two atoms of sulphuric acid, two of the lime are taken away, and the remaining atom of lime is united with the atom of phosphoric acid. Admitting this exposition to be true, is not phosphoric acid *set free*, and does it not unite with the undecomposed phosphate, as Mr. JOHNSON supposed? We can understand the process in no other way. The phosphoric acid is *combined* with the *whole* of the lime; the two atoms of lime do not exist separately. When part of the lime is taken away the phosphoric acid united with it must, for ought we can see to the contrary, be *set free* prior to its combination with the remaining undecomposed phosphate whereby it forms the superphosphate of lime. This is the second great error of Mr. JOHNSON.

The third is still more egregious, and is thus stated: "That no *free sulphuric acid* can be present in such a manure when the named proportions of sulphuric acid and bone earth are employed, and the mixture is carefully and thoroughly stirred up and left at rest for a sufficient time, is perfectly evident. Nevertheless, Mr. JOHNSON found, against all chem-

ical possibility, in 'MAPES' improved,' 20.98 per cent. *free sulphuric acid*. * * When we find such an analysis we can not but have doubts respecting the ability and experience of the analyst." This, we presume, is the error which Mr. MAPES said lay so plainly on the face of the analysis. Let us examine it a little. It is true that phosphate of lime and sulphuric acid can not be brought into *direct chemical* contact without decomposition. For instance: were both in *solution* it would be "against all chemical possibility" to find free sulphuric acid and undecomposed phosphate of lime. But in a dry mixture, as when calcined bones and sulphuric acid are mixed together, this direct chemical contact does not necessarily take place, and consequently the sulphuric acid and phosphate of lime may exist in such a mixture without chemical action.

We recollect once trying to convert "half-inch bones" into superphosphate of lime. The bones were first moistened with the proper quantity of water, and then sulphuric acid, at intervals, added in sufficient quantity to more than convert the whole into superphosphate. The mixture was well and thoroughly stirred, and occasionally turned over for two months, yet *not half the bones were acted on by the sulphuric acid*—the outside of the bones merely were decomposed. Does any one suppose that in such a mixture it is "against all chemical possibility" for free sulphuric acid and undecomposed phosphate of lime to exist?

Again: When conducting some experiments on a large scale in the Rothamsted laboratory on the manufacture of superphosphate, we found that it was impossible to make a good manure unless the substance used was ground to an impalpable powder. Thus, animal charcoal, (we presume the article which Mr. MAPES uses in the manufacture of his manure,) we found could not be decomposed unless finely ground. We have used 100 lbs. of sulphuric acid to 100 lbs. of animal charcoal, and had still, "against all chemical possibility," after well stirring and allowing it to remain a sufficient length of time, a considerable quantity of undecomposed phosphate and *free sulphuric acid*.

About fifteen months ago we had sent us a sample of "MAPES' improved superphosphate of lime. Judging from appearances we thought that the article was manufactured from the unground animal charcoal, and that not more than half of it was acted on by sulphuric acid—a conclusion we afterwards found to be correct from an analysis by Dr. ANTISEL. We have no doubt this article contained free sulphuric acid, as it most certainly did undecomposed phosphate. Since then we have seen other samples of MAPES' "improved," and conclude that he now grinds his animal charcoal; at all events, it is now a much better manufactured article—yet still it is not only possible, but we think quite probable that it contains *free sulphuric acid* as well as undecomposed phosphate of lime. So much for the third error of Mr. JOHNSON.

The fourth mistake is thus set forth. Speaking of Mr. JOHNSON'S analysis, our critic says: "We in vain ask, Where are the constituents of guano, the oxalic, uric, hydrochloric acids, which in MAPES' are present in the form of water, oxalate of ammonia, chloride of ammonium, and oxalate of lime? Where is the potash, the urea capable of being converted into carbonate of ammonia? Where is the sulphate of ammonia, which is present in large quantities in the improved superphosphate?" A fine piece of rhetoric this, Dr. ENDERLIN! You are an adept at mystifying a subject, and at showing off your profound learning to your agricultural readers! We would ask, Is your oxalic acid, chlorine, the carbon and hydrogen of urea compounds, &c., of much agricultural value? We have been in the habit of considering them of little worth. Are we mistaken? We had supposed that if you knew the amount of ammonia or nitrogen a compound contained, you were in possession of all that was necessary to determine the amount and value of its urates, urea, oxalate, and other salts of ammonia. This Mr. JOHNSON has determined. He found that 'MAPES' improved' contained 15.80 per cent. of organic matter and salts of ammonia, and that this organic matter, &c., contains 2½ lbs. of ammonia; the other 13½ lbs. of organic matter contain your oxalic acid, carbon, hydro-

gen, &c., and is worth, we think, about as much as $13\frac{1}{2}$ lbs of dried peat. The potash you so anxiously inquire after Mr. JOHNSON did not find. Even admitting the manure to be made as Mr. MAPES states, we do not see how it could contain more than half a per cent. of potash.

Another charge brought against Mr. JOHNSON is, that he found 37 per cent. of sulphate of lime, and that, to let his readers know what it was, he called it "gypsum" or "plaster." It is admitted that this amount of plaster is present, but it is stated that it was not added, but is necessarily present—superphosphate can not be made without it. This is all true, and Mr. JOHNSON said nothing to the contrary. He found 37 per cent. of "plaster," and so wrote it down in his analysis. Does Mr. MAPES intend us to understand that his artificially made plaster is any better than we obtain from natural sources for \$2.50 per ton? This is the last error charged to Mr. JOHNSON.

We must again apologize to that gentleman for taking any notice of so ridiculous and contemptible an attack on his reputation as a chemist. The manner, however, in which the article is heralded and paraded by Mr. MAPES would lead agriculturists to think that this criticism was well founded, and that Mr. JOHNSON had made great chemical and analytical mistakes. On the contrary, his analysis is the only one that we have seen which shows the real value of the "improved superphosphate of lime"—it is the only one that gives us the percentage of soluble superphosphate of lime and of the ammonia. —J. H.

WASHINGTON'S WEALTH—THE MOUNT VERNON ESTATE.—The following extract is taken from an old book published by RUSSELL & WEST, Boston, in the year 1800, entitled "Washington's Political Legacies," and dedicated by the editors to Mrs. MARTHA WASHINGTON:

"General WASHINGTON was at one time probably one of the greatest land-holders in the United States. His annual receipt from his estates amounted, in 1776, to four thousand pounds sterling. His property, at the same period, was estimated to be worth one hundred and sixty thousand pounds sterling, which is a very large sum in federal money, and was considered a very great fortune at that early day in this country for any one man to possess.

"His estate at Mount Vernon alone was computed in 1787 to consist of nine thousand acres of land, of which enough was in cultivation to produce, in a single year, ten thousand bushels of corn, and seven thousand bushels of wheat. In a succeeding year he raised two hundred lambs, sowed twenty-seven bushels of flax seed, and planted seven hundred bushels of potatoes. He desisted, it is said, from planting tobacco, which was then extensively raised in Virginia, for the purpose of setting an example, by employing his extensive means in the introduction and fostering of such articles of domestic use and necessity as would ultimately tend to the best advantage of his country. His domestics, at the same time, were industriously employed in manufacturing woolen cloth and linen in such quantities to clothe his numerous household, which numbered nearly one thousand persons."

DIGGING WELLS IN QUICK SAND.—Thinking that it may be of importance to some of your readers, I will give some of my experience in digging wells in quick sand. My father was digging a well where the quick sand run in so bad that he was led to contrive some way to remedy the evil resulting from it. His plan is, (when you get down where the sand runs in so as to prevent working at advantage,) to make a platform to lay the wall on out of plank by pinning them together; place this on the bottom, and then lay a wall of good hard brick and water-lime. When you get above where there will be any danger of the sand caving in, you can go on and dig the well as deep as you please, and the wall will settle down as fast as you take out the sand under it. We have settled a well two feet after it had stood for years. I was led to send this from hearing of the difficulty they had in digging wells at Geneva. A FARMER'S SON.—Seneca Falls, N. Y.

Horticultural Department.

CONDUCTED BY P. BARRY.

NOTES ON ORCHARDS AND ORCHARD FRUITS.

THERE is, after all, nothing like experience. In rambling, the other day, over the orchards of a gentleman who has for many years been engaged in fruit-culture for market, we were very strongly impressed with the importance of making a judicious selection of varieties. Selecting fruits to be grown for market is a totally different affair from selecting for family use. In the orchards referred to we observed some six or eight trees of the *Early Joe* apple; they were large beautiful trees, that had been top-grafted some seven or eight years ago, and might bear at least five or six bushels each. Now, the *Early Joe* is a delicious and beautiful little apple, and worthy a place among choice summer apples for a family garden, but it is frequently spotted and knurly, and it has not size enough to please the public eye in the market. It is a waste of time to carry small fruits to market, however excellent they may be. When this gentleman grafted so many trees of the *Early Joe* it had just been brought fairly to notice, and every one who saw and tasted it admired its beauty and excellence; it was thought that it might take well in market, but experience has proved that a crop of fair fruit is uncertain, and that, at best, it can not compete with larger sorts, that would bear twice the quantity of fruit. These trees are now about being grafted over. The *Early Harvest* and *Red Astracan* are two early apples that must be profitable to grow, as both bear well, are large, fair, handsome, and excellent. In the same orchard referred to, the *Summer Queen* proves to be unprofitable; it bears good crops, but the fruit is generally imperfect, and it comes in when peaches are abundant, and apples not in great demand. The *Early Strawberry*, in the same orchard, rarely produces a good crop—the fruit blights and falls immediately after it sets; this, however must be owing to some local cause, as it generally does exceedingly well in this section. We know one orchardist who has a tree or two that yields him more annually than any other trees he has, and the dealer who annually buys them has informed us that he can sell it more readily, and have larger profits on it, than on any other variety of summer apple he can get. The *Sweet Bough* was another variety we saw prettily largely planted. This, the gentleman informed us, was a profitable variety—large, handsome, and always saleable, but he said it was less valuable to him on account of ripening at the moment when his peach crop usually required all his attention. We saw magnificent crops of *Northern Spy* and *Rhode Island Greening*, and these, with the *Baldwin*, were found the most profitable winter varieties in the orchard. *Talman's Sweeting*, we believe, was included; we saw fine crops of this. We must say further in regard to the *Northern Spy*, which has been said to be unprofitable on account of producing so large a proportion of imperfect fruit, that we have never seen a more uniform crop of smooth, beautiful fruit; they were, however, not more than half grown, and just beginning to show faint touches of red. This apple is remarkable for being later in putting forth its leaves, and blossoming and setting its fruit than any other variety grown here in this section, resembling, in this particular, the celebrated *Rawles' Janet*, of the south-west. This peculiar trait of late flowering enables the *Spy* to escape injury from cold winds and frosts, that not unfrequently prove fatal to other varieties, and, as the orchardist referred to remarked, is a very strong recommendation in its favor for all localities subject to cold and changeable spring weather.

In managing such trees as the *Northern Spy*, whose habit is vigorous, erect, and

dense, an important point is to keep the heads open to the sun and air; the trees in this orchard were quite open, the branches curved outward, and the fruits all exposed as much as they should be. The *Rhode Island Greening*, and all such trees, with a spreading, irregular habit, take care of themselves pretty much in this respect.

We observed that in many cases the trees leaned considerably to the north-east on account of the prevailing winds beating against them from the south-west, and in nearly every case, and especially with pear trees in this condition, some injury had been inflicted on the sunny side of the trunk, apparently having been done while the trees were yet young. It is very obvious that the trunk of a tree in such a position, one side exposed to the rays of the sun *all day* and at *all seasons*, must suffer. In winter it is frozen hard at night, and early next morning a strong sun pours down its melting rays upon it. This points to the necessity for staking, or otherwise securing trees in an *upright position*, and also to *keep the heads pretty near the ground*. A fine *Bartlett* pear tree loaded with fruit met our eye, and brought it on the carpet. "I find it impossible," said the orchardist, "to get good *Bartlett* trees without top-grafting others of large size. When I plant small trees, they bear themselves to death before they get to be of any considerable size." The fact is, the gentleman's soil is a very warm light sand, *entirely too light* for the pear, and the *Bartlett* in it being so precocious, and finding a stinted supply of food, bears heavily, and makes no growth. Following this up for a few years closes up the career, of course. The pear needs a *substantial* soil, and in such light soils as we have referred to, the trees to prosper at all for any considerable length of time must have frequent and liberal dressings of compost, and every season be pruned. With this treatment a good growth is secured, as well as a good crop of fruit.

Leaving the apples and pears we turned into the peach orchard. "Just as you came up," said the gentleman, "I was going into my *Crawford's Early* to beat off a portion of the crop." Certainly they needed it, but it should have been done a month ago. If one half of this great crop had been taken off then, the food they have since appropriated would have passed to the benefit of those left, and *now* they would have shown it. It is just when trees begin to grow slowly and feebly that they begin to bear *abundantly*, and thus comes on decrepitude. We touched upon this important point in a late number of the *Farmer*, and we are happy to know that it had some effect; there are thousands of cases, however, it did not reach. The *Early York* was a fair crop, and promises to be ripe about the last week in August; the *Yellow Alberge*, or *Barnard's*, was bearing well, and we were told that had it not been for this variety last season, the crop would have been a complete failure. These odds and ends of observation may possibly be the means of calling the attention of unexperienced persons to certain points that might be overlooked.

NEW FRUITS.—Among the new fruits that have attracted attention this season, *McAvoy's Superior* strawberry has been one of the most prominent. As far as we know, it has come up pretty well to expectation, except in one or two cases. It is a pistillate variety, large ovate, occasionally with a short neck. Color—a rich crimson scarlet, with pale colored yellowish seeds. Flesh—red, juicy, and fine flavored, but not equal to *Burr's New Pine*. The berries do not fill up quite plump at the point, which is a slight imperfection. It is an abundant bearer, and altogether a valuable fruit. At the exhibition of the Pennsylvania Horticultural Society, Mr. COPE produced specimens measuring *five and a half inches in circumference*. This is, at least, *one-third* larger than any we have seen.

Longworth's Prolific is pronounced by many the largest and best of hermaphrodite sorts. Our *Genesee* is the best of this class we have yet grown—a large conical-necked berry of a brilliant color, firm, and of good quality.

The *Monroe Scarlet*, a pistillate variety, is hardy and uncommonly productive. It has been proved in many parts of the country, and is every where well spoken of.

Walker's Hermaphrodite Scedling is a distinct, very dark conical fruit, of medium size, very prolific, and of good quality.

The *Moyamensing Pine* has not done so well with us as in New Jersey and Pennsylvania.

The *Bicton Pine* is a new English variety, hermaphrodite, bears moderately, large and handsome, white, with a tint of red in the sun. Quality—good, not high flavored.

CHERRIES.—The *Belle d'Orleans* is an early and a very beautiful white variety—ripens with the *Early Purple*, is larger and every way finer than *Bauman's May*, and as early.

The *Monstreuse de Mezel* is a very large, dark-mahogany colored fruit, of fair quality—probably the largest cherry we grow. Tree—an irregular, strong grower, and apparently hardy.

Gov. Wood continues unsurpassed for beauty and excellence. Size—medium, very productive, and tree hardy.

Delicate and *Mammoth* are said to be two new sorts of great merit among Dr. KIRTLAND'S seedlings.

HAVING given some attention to horticulture and its kindred subjects for a few years past, I am anxious to learn more of the habits and modes of destruction of those pests, which, under various names, mostly destroy our labors. If some more thorough and effectual method of extermination than has yet been devised shall not be discovered, the attempt to raise fruit or trees in this vicinity much longer will be almost futile. There is scarcely an apple tree in this region, so far as I have examined, that is not injured or destroyed by the borer, though every means that I have seen recommended have been tried. The fruit, also, shares the same fate—wormy and defective. The curculio, too, has been more busy, if possible, than ever; hardly a plum or apricot has been left, and cherries were all punctured and much injured.

I gave a thorough trial to every method that has been published for their destruction: tying cotton round the trees—jarring them—smoking them with sulphur, chips, feathers, old leather, &c.—dusting the trees for a long time with earth, ashes, &c.—but the rascals only seemed to work the faster, evidently regarding them all as “weak devices of the enemy.” They strongly reminded me of the old man who thought to drive the boy from his trees by throwing grass, sticks, &c., but could only bring him down with stones. Something more effectual must be done. Perhaps pigs and poultry would do the work after a while, but they are not admissible in small gardens, and only in separate enclosures.

The squash-borer is again making ravages in our vines, and have nearly destroyed them. E. LEFTINGWELL — Aurora, August 9, 1853.

Sad tidings these from Aurora, one of the most delightful places in all the Empire State, and one, too, in which horticulture is taking deep root and flourishing amazingly. Have *patience*, sir—we must all practice this virtue, for we have all difficulties to contend with, and it is well that we have, else our energies would grow rusty. Next season your crops may be spared by these pests, and you will be wondering where they are all gone.

Almost every season we are visited by thousands—yes, millions of aphides and Pear tree slugs, the destruction of which is expensive and tedious. This year we have none—nowhere can they be found—perhaps they have gone to Aurora. The curculio, too, has left us a more abundant crop of plums and apricots than usual; our trees are loaded to breaking. But the study of the habits of insects is most important to all who desire to be successful in gardening. Let us recommend to you the new edition of “*Harris's Treatise on Insects Injurious to Vegetation*.” It will furnish you much valuable information.

STRAWBERRY CULTURE.—A very intelligent correspondent of the *Pennsylvania Farm Journal* gives the results of his experience as follows :

"Strawberries being the earliest fruit to ripen, can have no competition in the market, and under ordinary treatment will yield large profits to the producer, though varying in magnitude according to the variety grown, the quality of the soil, and the cultivation they receive. The kind most generally cultivated as a market crop is *Hovey's Seedling*, with about one-tenth their number of large *Early Scarlet*, distributed throughout the plantation as fertilizers. The *McAvoy's Superior* is a more vigorous and hardy pistillate plant, and yielded a larger crop of large-sized berries than any other that came under my observation this year. The *Genesee* and *Cambridge* are hermaphrodite plants, and bore a full crop of large early fruit, ripening on the 28th of 5th month last, and many of the berries measured from 3 to 3½ inches in circumference. If they continue to be as productive as they were this season, they will be valuable fertilizers.

"Having a variety of soil in cultivation, I have grown strawberries on all kinds, from light blowing sand to stiff timothy bottom, and have learned to avoid either extreme, and now select a good loam of medium texture, tolerably high and undulating, so as freely to carry off the surface water, cover it with manure, which should be well incorporated with the soil; early in the spring mark the rows four feet apart, twelve to fifteen inches distant in them. Put one hermaphrodite to every ten of the pistillates, rejecting the male, or barren plants, which produce no fruit, but blossom and grow vigorously, and soon overrun and crowd out the more fruitful ones.

"The beds should be kept mellow and free from weeds the first season, the runners carefully distributed over the ground so as to form the beds with regularity; after which but little culture is needed. I use a subsoil plow, which mellows the alleys without throwing earth on the plants, the benefits of which are clearly shown, especially in a dry season, by the superior vigor and productiveness of the plants near the edge of the beds over those in the centre; the circumference extending from twelve to fifteen inches on either side, and the beds being three feet in width, allowing one foot for alleys, the plants nearly all receive nourishment from the moisture and atmospheric influence absorbed by the soil in the alleys thus deeply pulverized.

"In 1850 I planted six acres of *Hovey's Seedling* on the plan above described, in stiff clay land, one-half of which was low meadow ground, the other ascending to upland, from which were gathered and marked last year over 300 bushels of fruit; but in the latter part of summer the timothy and herd grass proved better adapted to the low ground by taking possession, and this year the strawberries there were abandoned, and the grass mown for hay, leaving three acres of upland in strawberries which were dressed, viz: the alleys loosened with a subsoil plow, and the stools of clover, weeds, &c., taken from the beds and placed in the alleys, which served the double purpose of retaining moisture and keeping the berries clean; the yield was 154 bushels of fruit, for which I received \$4 per bushel, and paid 64 cents for picking, and 50 cents (12½ per cent. commission) for selling. Twelve dollars per acre would be a full compensation for the little culture they received, making the account stand thus :

To interest on three acres of land, at \$100,	\$18.00
" culture,	36.00
" picking 154 bushels, at 64 cents,	98.56
" 12½ per cent. commission for selling,	77.00
	\$229.56
By 154 bushels, at \$4,	\$616.00
Expenses,	229.56
	\$386.44
Profit on three acres,	
Equal to \$128.81 per acre.	

"The first year the plants are set there are no returns, but the value of the plants at the close of succeeding years would be a full remuneration. Were I to draw an estimate from some of my specimen beds, a few rods in length, which are thoroughly cultivated, the results above stated would appear like a failure; but for large farmers, where land is plenty, and laborers scarce, the great question is not how much per cent. profit can be made on *one* acre, but by what mode can the most clear money be made on all the land they have to cultivate with the laborers at their command. Over 100 bushels of corn may be grown on an acre of ground. Yet more clear money can be made on twenty acres yielding 50 bushels each.

"One of my neighbors having but a few acres of land, devotes proper attention to something less than three acres of strawberries, keeping the ground well manured, mellow, and free from weeds; the expense of which he has not been able to furnish, but he informed me that he received over \$1100 dollars for the fruit this year. WILLIAM PARRY.—*Cinnaminson, N. J.*

Editor's Table.

ARTIFICIAL MANURES.—The editor of the *Working Farmer* appears to dislike our remarks in the July number on Artificial Manures. This probably arises from his not having read them attentively when he replied to our article. We called attention to his own ably written puff of his "improved superphosphate of lime," which he says "is now in such demand that the manufacturers can not supply *one-tenth of the quantity asked for*, notwithstanding their factory is capable of delivering ten tons or more per day." This manure is sold at fifty dollars a ton; and if there is a demand for ten times more than the manufacturers can make, then it reaches the large sum of five thousand dollars a day, thirty thousand a week, and a million and a half dollars in fifty weeks, or less than a year!

Prof. MAPES should be proud to have his editorial brethren invite the public to take note of so magnificent a business. He says: "The improved superphosphate of lime was introduced by *ourselves* but a little more than twelve months ago." Now, if there is any truth in the learned Professor, the demand exceeds a million and a half dollars' worth in a year! But what he appears most to dislike is our "plain statement of the abuses to which analytical chemistry is liable in its application to artificial manures, and rural affairs generally, without reference to Mr. MAPES." Mr. M. coolly appropriates to himself remarks applied expressly to "rural affairs generally, without reference to Mr. M." in particular, in illustration of the "abuses of analytical chemistry," and then he falsely says that we accuse him of "having made two qualities of manure, giving out small quantities of a better quality for experiments, and of publishing in a hundred papers the effects procured by these lesser quantities." We have never said that Mr. MAPES, or his manufacturers, had practised a fraud of the kind named; but we have stated, as was due to our numerous readers, how such an imposition was entirely practicable by any one having a moderate knowledge of the theory of agricultural chemistry. This statement was so plain, and the garment appeared to fit so well, that the Professor voluntarily put it on, and insists on his right to wear it. That being purely a matter of taste, we can have no dispute on the subject. Mr. M. says: "We are well aware that this article, as well as some others which have formerly appeared in the

Genesee Farmer, are not from the pen of the senior editor, Dr. LEE; for he informed us in Washington at the time of the meeting of the National Society, that the articles which had appeared in that journal in reference to ourselves were not written by himself, nor had his sanction, and that if he had been at home they would not have appeared." It is quite true that we told both Mr. MAPES and Mr. KING, editor of the *Boston Journal of Agriculture*, in Washington, in February, when the first annual meeting of the National Society was held, that we did not write the articles to which they had taken exceptions, and that we regretted their appearance, for we desired to be on good terms with all men, but especially with the conductors of agricultural papers. These editors, however, were not satisfied with this frank and truthful disclaimer, and took no pains to conceal from us the fact that they are dishonorable men. Thus regarding them, we have felt it our duty to put our readers on their guard against humbug and successful quackery in that quarter. The proprietor of the *Genesee Farmer*, (who wrote the article in the July number headed Artificial Manures,) has an unconquerable aversion to the mixing up of truth and falsehood in agricultural literature and science for any purpose, and especially for the mercenary one of speculation. Man really needs but little during the few years he stays on earth, and with industry and economy all his wants may be easily and honestly supplied.

THE GREATEST WHEAT-GROWING COUNTY IN THE UNION.—Monroe county, of which Rochester is the capital, returned, at the last census, 1,441,653 bushels of wheat, grown in the year 1849. In that year the six New England States produced 1,033,112 bushels, being 402,541 bushels less than the crop of a single small county in Western New York.

Livingston county, which joins Monroe on the south, returned 1,111,986 bushels, exceeding the crop of all New England by 72,874 bushels. The crops of Ontario and Niagara counties fall but little below a million bushels each. We shall, in our next, publish the agricultural statistics of each county in the State, and follow it with abstracts of those of Ohio and other States, as collected under State laws, and since the United States census was taken.

SUPPLY OF GUANO.—An immense deposit of guano has been discovered in the Indian Ocean, between Mauritius and Calcutta. It has been analyzed by Professor ANDERSON, of Glasgow, and is now in the hands of Professor WAX, of London, for analysis. Four kinds of it have been brought to England, two of which are of superior quality, resembling the guano of Saldanha Bay; the other two are comparatively inferior. Steps are being taken to make the guano available to British farmers.

POULTRY AND POULTRY HOUSES.—The finest lot of improved breeds of poultry, including nearly all new races and families, imported and kept pure, that we have any where seen, is the property of Dr. GROSS, East Liberty, near Pittsburgh. His poultry house and yard are well arranged; and such of our readers in Pennsylvania as shall attend its State Fair, to be held near East Liberty, the last of this month, will find a visit to Dr. G.'s establishment both interesting and instructive.

IMPORTED STOCK.—From an announcement in our advertising columns, it will be seen that a rare chance is offered breeders and farmers generally, for improving their herds. The Madison County Importing Company will sell their entire stock of imported animals, at London, September 27. We have not seen the animals, but we are assured they are of the first quality.

PREMIUM CORN CROPS.—Six different counties in Ohio awarded premiums on twenty-five acres of corn last year, whose average product was 127 bushels per acre. The largest yield was in Stark county, two acres producing 326 bushels, or 163 per acre. The annual crop of Ohio is about sixty million bushels.

CHLOROFORM FOR PROPULSION.—The Paris correspondent of the *Commercial Advertiser* says: "The vapor of chloroform as a motive power is to be applied upon an immense scale."

STATE FAIRS FOR 1853.

New York, at Saratoga,.....	Sept. 20, 21, 22, 23
Michigan, at Detroit,.....	Sept. 27, 29, 30
Vermont,.....	Sept. 13, 14, 15
Pennsylvania, at Pittsburg,.....	Sept. 27, 28, 29
Kentucky, at Lexington,.....	Sept. 13 to 16
Ohio, at Dayton,.....	Sept. 20, 21, 22, 23
New Hampshire,.....	Oct. 5, 6, 7
Maryland,.....	Oct. 25, 26, 27, 28
Illinois, at Springfield,.....	Oct. 11, 12, 13, 14
Indiana, at Lafayette,.....	Oct. 12, 13, 14
Wisconsin, at Watertown,.....	Oct. 4 to 7
Virginia, at Richmond,.....	Nov. 1, 2, 3, 4
Lower Canada Board of Agriculture, Annual Exhibition,.....	Sept. 26, to 27
Upper Canada,.....	Oct. 5 to 7
Southern Central Agricultural Society, Augusta, Ga.,.....	Oct. 17 to 20

ADVERTISEMENTS, to secure insertion in the *Farmer*, must be received as early as the 10th of the previous month, and be of such a character as to be of interest to farmers; we publish no other. Terms—\$2 for every hundred words each insertion, *paid in advance*.

Inquiries and Answers.

(JOHN McCLELLAND.) *Johnston's Agricultural Chemistry* would probably suit you. We can send it you, postage paid, for \$1.50.

(JESSE OSBORN, Paoli, Orange Co., Ind.) There is now no doubt of the fact that grain and grass can be cut with machinery, and that, too, as well, and we think better, and certainly cheaper, than by manual labor. If you are a very large farmer, we should think it best to have two machines, one for grain and the other for grass. There are, however, some excellent combined Reapers and Mowers, that answer well for both purposes. We cannot say which of the various machines now manufactured is *the best*. For a description of machines, price, &c, we would refer you to our advertising columns.

(WM. LAUGHLIN, Hookstown, Pa.) We are continually receiving complaints of the dishonest tricks of "Yankee sheep pedlars." As a general rule, it is not safe to purchase \$400 bucks from them. Did we desire such a buck, we would trade only with some well-known, honorable importer. Have sent some Australian wheat; would have sent more, had it not been that the postage is so high *when not prepaid*.

Will charred bones be of any profit on wheat, and would it answer the same purpose as ground bones? (1.) Are tiles as durable for pipes as wood or lead? Would the water keep as fresh as in wood pipes? (2.)

I should like to hear Mr. D. P. BROOKS' experience through the columns of your valuable paper, if he has adopted cement. D. S. UMBERHOFF.—*Shirleysburg, Pa.*

(1.) We have seen charred bones applied to wheat without the least benefit to the crop. Ground bones are much the best for wheat, inasmuch as they contain 5 per cent. of nitrogen, or ten times as much as ordinary farm-yard manure. Charred bones will be of little *immediate* benefit to any crop, unless first converted into superphosphate by the addition of one-third their weight of sulphuric acid.

(2.) We think good clay pipes would be more durable than wood, but should like to hear from those who have had more experience on this and the other inquiry.

I wish to know, if any information can be given, how to kill the Tangle weed. W. M. CARPENTER.—*Erie, Madison county, N. Y.*

River Bank Nursery,

OPPOSITE THE RACE COURSE, ON NORTH ST. PAUL STREET.
Office, 106 State Street, Rochester, N. Y.

THE attention of Nurserymen, Orchardists, and Fruit Growers, is requested to our very thrifty and healthy stock of Fruit Trees. We believe the stock is equal, in all respects, to any other in the market, and will be sold at as low prices. We intend to make this a reliable establishment, and we solicit patronage with a strong confidence that we shall be able to give satisfaction. We have for sale this fall—

30,000 Apples, 3 and 4 years old.
85,000 do 2 do
100,000 do 1 do
5,000 Cherries, 2 years from bud.
15,000 do 1 do
500 Pears on Quince, 4 years from bud (now bearing.)
8,000 do do 2 do
2,000 do do 1 do
2,000 Peaches, 2 years from bud.
4,000 do 1 do

The above comprise all the varieties of merit. We have also an assortment of Plums, Apricots, Nectarines, &c., &c. Raspberries, Gooseberries, and Currants, in great variety. We also offer to Nurserymen—

150,000 Apple Seedling, 1 year old.
50,000 do 2 do
50,000 Cherry Seedlings, 1 year old.

All orders will be promptly and carefully executed, and no pains will be spared to give satisfaction.

Geo. H. CHERRY & Co.

We particularly invite the attention of Western Nurserymen to our young stock. It is very thrifty, and can be removed with safety, as it has not been unnaturally forced, and will be sold at a reasonable price.

September 1, 1853.—2t.

Fruit and Ornamental Trees.

T. C. MAXWELL & BROS. would invite the attention of purchasers to the superior stock of Fruit and Ornamental Trees which they offer for sale this fall. Their Trees are of the most approved varieties, and unequalled in health, vigor, and beauty; and they feel confident that they can give entire satisfaction to all who may favor them with their orders, both in prices and quality. Purchasers are requested to call and examine.

60,000 Apple Trees, large and thrifty.
20,000 Pear do more than half Dwarfs, of the best kinds, and unequalled in size and beauty.
20,000 Cherry Trees, first quality, in every respect.
5,000 Peach do one year from bud.
2,000 Plum do mostly on Peach.
2,000 Apricot do one and two years—fine.
2,000 Quince do
6,000 Grape Vines, mostly Isabella.
3,000 Mountain Ash Trees, large and fine.
1,000 Horse Chestnut Trees large and fine.
3,000 Balsam Fir Trees, two to four years in nursery—fine.

80,000 Arbor Vite, for Hedges—8 to 30 inches.
Also, a general assortment of smaller Fruits, Shrubs, Roses, &c.

Trees carefully packed and promptly shipped.
Old Cash Nurseries, Geneva, N. Y., Sept. 1, 1853.—2t.

Great Auction Sale of Trees.

WM. R. PRINCE & CO., proprietors of the Linnean Botanic Garden and Nurseries, Flushing, now announce that they intend selling, at auction, their immense stock of Fruit and Ornamental Trees and Shrubbery, of all sizes, on or about the 1st of October next, the ground being wanted for building-lots. This is the best opportunity ever presented for new nurseries to obtain full supplies, and for older ones to fill up deficiencies.

Complete Catalogues, and further information, will be sent to all who wish to attend the sale.

September 1.—1t.

Superior Seed Wheat.

A LARGE assortment of the best varieties of Improved Seed Wheat, among which are the Golden Australian, China or Troy, White Flint, Hutchinson's Improved, Soule, and Mediterranean.

Seed Rye, of the best winter variety; also, a cheaper kind, suitable for the late fall and early spring pastures.

Field and Garden Seeds, of the various sorts.

R. L. ALLEN,

Sept. 1, 1853. 189 and 191 Water street, New York.

SAMUEL MOULSON,

AT THE OLD ROCHESTER NURSERY,

Office 36 Front Street, Rochester, N. Y.,

IS prepared to furnish inventories, to post-paid applicants, of the present very extensive stock of Nursery items, consisting in part of

120,000 Dwarf and Standard Pear Trees,
90,000 Apple Trees,
50,000 Peach "
30,000 Plum, Cherry, and Apricot; over
100,000 hardy Evergreens, and a fine selection of Weeping
Deciduous Trees, Ornamental Shrubs, Hybrid Peppermint
Roses, together with such novelties as may be classed strictly
hardy. Also, a very limited assortment of half-hardy, such
as Cryptomeria Japonica, Cedrus Deodora, &c.

The amateur, wishing prime fruits, of well-established repute, or the agriculturist, needing fine cropping, thoroughly-tested varieties, may rely upon the most careful execution of their orders.

The ornamental items are entirely grown in the Nursery, consequently none of the heavy losses are sustained that usually occur to recently imported subjects.

The Evergreens are very robust, and admirably furnished to the surface of the ground, none presenting the naked stems usual to imported plants.

Dealers are invited to give a call before making their purchases.

September 1, 1853.—1t.

Geneva Nurseries.

THESE Nurseries are located just half way between Syracuse and Rochester, being fifty miles from each place, and the facilities for shipping trees are equal to any in the State. Our stock of Trees is now extensive. Thirty thousand Cherry, 1 to 3 years old; thirty thousand Peach, 1 year; six thousand Plum, 1 year; one hundred and fifty thousand Apple, 1 to 3 years; five thousand European Mountain Ash, large size; together with a general assortment of other Trees.

STOCK FOR NURSERYMEN.

Five hundred thousand Apples, 1 to 2 years; twenty-five thousand Pear; ten thousand Plum; twenty-five thousand Cherry, five thousand Sweet Briar, 1 year from seed; five thousand European Ash; fifty thousand Osage Orange; twenty thousand White Cedar; five thousand Balsam Fir; six thousand Norway Spruce; two thousand Sugar Maple; two thousand Hemlock; five thousand Asparagus Roots, 1 and 2 years; three thousand Rhubarb; twenty thousand Basket Willow Cuttings.

E. T. & E. SMITH.

Geneva, N. Y. Sept. 1, 1853.

Sale of Imported Stock.

"THE Madison County Importing Company" will offer for sale to the highest bidder, on the 27th of September next, their entire herd of stock, which has been selected by the first of judges from the best herds of England, and imported with great care. Their stock consists of 24 head of pure bred Short-Horns—14 Bulls from 1 to 3 years old, 8 Cows and Heifers, and 2 Calves; 20 Leicester Sheep, and 12 Suffolk Hogs.

The stock can be seen and examined at this place at any time till the day of sale.

Catalogues, giving name and pedigrees, can be had by addressing the Secretary, at this place, or at the office of the Ohio Cultivator, after September 1st.

Sale to commence at 10 o'clock, A. M.

JESSEE WATSON, President.

J. T. LACY, Secretary.

London, Madison county, Ohio Aug. 20, 1853.—1t.

Superphosphate.

NO expense has been spared in the combination of this most fertilizing manure, which contains all the nutritive properties of all plants. It is superior to most of the articles offered for sale under the same name, and is inferior to none, although sold at a much lower price. Put up in bags at \$40 per ton of 2000 lbs. cash.

Office of the New York Superphosphate Manufacturing Company, No. 159 West street, New York.

VICTOR E. KNOWLES, Agent.

September 1, 1851.—3t.

First Premium Railroad or Endless Chain Horse Powers and Threshers.

WE will make it an object to all who want the above, to purchase of us.

Before buying, call at 68 State street, Rochester, and be convinced.

BRIGGS & BROTHIER.

September 1, 1853.

Bone-Dust Manure and Superphosphate of Lime.

THE EAGLE CHEMICAL COMPANY, having recently made extensive additions to their works on Staten Island, are now prepared to meet the increased demand for the above named invaluable manures, and are ready to supply the agriculturists with any quantity that may be required.

THE BONE-DUST MANURE will be of the same quality, and will be delivered at the same price, as that heretofore furnished to the farmers of Staten Island, New Jersey, and other parts of the United States. It will be ground into a fine powder, and warranted pure; and, being perfectly dry and well packed in clean barrels, can be transported at a small cost, either by steamboat or railroad.

The advantages of ground bones for manure are too well known by the experience of the past twenty years to make any further recommendation necessary.

THE SUPERPHOSPHATE OF LIME, or Sulphated Bones, may not, perhaps, be so well known in some parts of the United States as the former, as it is a comparatively recent mode of applying the same ingredients, but from the great results already obtained by the agriculturists in England and the United States, it is likely to be preferred to all other manures in use.

The proprietors of the Eagle Chemical Works have, for several years past, been extensively engaged in the manufacture of this article in England, where they have had the assistance of the most eminent agricultural chemists in Europe.

The *superphosphate* now prepared by them has been tested on every variety of soil crop in Europe, the United States, and the West Indies, with the most invariable success. The manufacturers do not hesitate to guarantee it to be the most perfect manure that can be made. No ingredients will be used until they have been carefully examined, and their purity tested; and the mode of preparing such ingredients, and the proportions used, will be such as the manufacturers have ascertained by long and patient application of chemical science, to be the most perfect, and which they have proved to be so, by the practical tests of agriculturists on almost every description of soil, and in every variety of climate.

It will always be kept at the highest standard of purity and excellence—every lot made will be carefully analyzed and tested before delivery. It is warranted to prove a more valuable manure than the best Peruvian guano, being both more immediate in its effects upon the plant, and of more permanent benefit to the soil, beside being less dangerous in its application.

It will be composed entirely of *Superphosphate of Lime*, combined with such proportions of *ammonia* and other ingredients as are necessary to restore that which has been taken from the soil by previous crops.

Raw bones, in addition to fat, or gelatine, are composed of *phosphoric acid* and lime combined, called phosphate of lime. It is the *phosphoric acid* that is of great value as manure to the agriculturist, and the object of applying sulphuric acid to dissolve them is, that by its alliance with the lime that is in the bones, the phosphoric acid is rendered more soluble, or easily dissolved by rain; and the difference between raw ground bones and dissolved bones may, in a plain way, be stated to consist in the fact that by a careful addition of the proper proportions of sulphuric acid, the phosphate of lime in the raw bones is converted partly into the sulphate of lime, which is a valuable manure, and a considerable portion of soluble phosphoric acid is left free to combine at once with the soil, in readiness to act on the plant.

Thus it is that a small quantity of Superphosphate of Lime will force a crop of turnips in greater weight than a larger quantity of raw ground bones, bringing them ready to the hoe at least ten days sooner. This is one of the most important properties of this phosphate, derived from its peculiar preparation; and it will always be found, where used, to cause such a speedy development of the plants as to enable them to escape the ravages of the fly and wire-worm.

It is calculated that one bushel of this prepared Superphosphate is equal in its effects to six bushels of ground bones in a raw state. Thus, the concentrated form of this manure, and its small bulk, makes it exceedingly convenient, and diminishes the cost of transportation and handling; 250 to 350 pounds to the acre is sufficient for any ordinary condition of soil, and the whole cost will not probably be greater than the extra expense would be in the mere handling and carting the necessary quantity of stable manure to produce the same effect.

It may be sown broadcast, and plowed into the soil; or it may be drilled in with the seed. It may also be applied in the hills during the cultivation of corn, or other crops,

when it will stimulate the most sluggish growth into immediate action.

It will be delivered in bags or barrels, in such quantities as may be required, at the price of 2½ cents per pound, and each package will be branded "Superphosphate of Lime, Eagle Chemical Works, 62 Beaver street, New York."

Orders with cash, or satisfactory reference, to be sent to
ALFRED F. KEMP,
 62 Beaver st., New York, Office Eagle Chemical Works.
 September 1, 1853.

THE GREAT RESTORATIVE.

FEVER AND AGUE CURED BY DR. M'LANE'S LIVER PILLS.

MR. JONATHAN HOUGHAM, of West Union, Park county, Illinois, writes to the proprietors that he had suffered greatly from a severe and protracted attack of Fever and Ague, and was completely restored to health by the use of the Liver Pills alone. These Pills unquestionably possess great tonic properties, and can be taken with decided advantage for many diseases requiring invigorating remedies; but the Liver Pills stand pre-eminent as a means of restoring a disorganized liver to a healthy action; hence the great celebrity they have attained. The numerous formidable diseases arising from a diseased liver, which so long baffled the skill of the most eminent physicians of the United States, are now rendered easy of cure, thanks to the study and perseverance of the distinguished physician whose name this great medicine bears—a name which will descend to posterity as one deserving of gratitude. This invaluable medicine should always be kept within reach; and on the appearance of the earliest symptoms of diseased liver, it can be safely and usefully administered.

Purchasers will be careful to ask for *Dr. M'Lane's Celebrated Liver Pills*, and take none else. There are other Pills, purporting to be Liver Pills, now before the public. Dr. M'Lane's Liver Pills, also his Celebrated Vermifuge, can now be had at all respectable Drug Stores in the United States and Canada.

DR. M'LANE'S VERMIFUGE.

DURING a practice of more than twenty years, Dr. M'Lane had attended innumerable patients afflicted with every form of worm disease, and was induced to apply all the energies of his mind to the discovery of a Vermifuge, or worm-destroyer, certain in its effects; the result of his labors is the American Worm Specific, now before the public, which is perfectly safe, and may be given alike to children of the most tender age, or to the aged adult; it purges mildly and subdues fever, and destroys worms with invariable success. It is easy of administration, and as it does not contain mercury in any form whatever, no restrictions are necessary with regard to drinking cold water, nor is it capable of doing the least injury to the tenderest infant. An incredible number of worms have been expelled by this great Vermifuge.

Purchasers will please be careful to ask for *Dr. M'Lane's Celebrated Vermifuge*, and take none else. All other Vermifuges, in comparison are worthless. Dr. M'Lane's genuine Vermifuge, also his Celebrated Liver Pills, can now be had at all respectable Drug Stores in the United States and Canada.

Improved Fowls for Sale.

HAVING kept for several years the very best fowls to be procured, and having the past season added to my stock some exceedingly beautiful specimens, I have now a great number of fine young pairs, certainly as good as can be found in the country, which I will sell at a much lower price than that charged by fowl-dealers. I will sell the following varieties at five dollars per pair:

White Starling, Black Starling, Buff Shanghai, and Cochon China; and *Brahma Pouter, and Speckled Shanghaes* (a very beautiful bird), at ten dollars per pair.

These fowls will be ready for delivery by the first of September, and I will coop them carefully, with feed, water, &c., and send by railroad or express, as desired, without charge, and warrant every fowl sent to be pure and fine. Orders are solicited.
Wm. VICK.

Rochester, N. Y., August 1, 1853.

Horse Powers,

ON the Endless-Chain principle, consisting of Emery's, Wheeler's, and White & Prentiss's, the best manufacturers. Threshers, Separators, and Winnowers, Combined Threshers and Separators.

The above are warranted to give satisfaction. For sale at the lowest cash prices, at the State Agricultural Warehouse.

LONGFETT & GRIPPING,
 Sept. 1, 1853.—2t.

No. 25 Cliff street, New York.

THE HORTICULTURIST,

And Journal of Rural Art and Rural Taste.

EDITED BY P. BARRY, AUTHOR OF THE "FRUIT GARDEN."

The *Horticulturist*, as its name implies, is devoted to Horticulture and its kindred arts Rural Architecture and Landscape Gardening, and will keep its readers advised of every thing new on the subject, either in Europe or America. It is a Monthly Journal of forty-eight pages, beautifully printed on the finest paper and elegantly illustrated. In addition to numerous wood engravings, each number contains a full page engraving on stone, of some new, rare, and valuable fruit or flower, and is one of the most beautiful as well as the most useful Monthly Journals published in the world. We subjoin a few notices by the press, showing the estimation in which the work is held by our editorial brethren:

We are glad the work has fallen into such excellent hands.—*Louisville Journal*.

We feel that we are doing our readers a real service when we urge them to subscribe for this invaluable monthly.—*Weekly Democratic Press, Chicago*.

We congratulate the public on having so valuable a periodical as the *Horticulturist* within their reach.—*New York Day Book*.

Its contents are spirited and various, the selections judicious, the illustrations elaborate.—*New York Daily Times*.

A standard work of authority upon all subjects diseused or explained in it.—*Vicksburg Whig*.

There is no work in this country of greater value to the cultivator of fruits.—*Inquirer, Portland, Me.*

It is well got up; its articles able, various, and appropriate.—*Geneva Courier*.

Every man who has land enough for a garden should possess this work.—*Weedsport Advertiser*.

The plates alone are worth the year's subscription. The letter press is of a highly instructive character, and embraces a variety of topics. None who have a taste for the beautiful in nature should be without such a valuable publication.—*Hamilton (C. W.) Spectator*.

There is substantial profit as well as pleasure in cultivating taste in buildings, yards, gardens, &c., and the subscription price would be capital well invested by those who will attend to the contents of the *Horticulturist*.—*Daily Courier, Zanesville, Ohio*.

Any remarks of our own we fear would add nothing in comparison with the value of such a well conducted work. The plan of coloring the plates is decidedly beautiful, and no person interested in horticultural pursuits should be without it. It seems a wonder to us that horticulturists do not look more to their own interests, than to allow their monthly papers to be received without this indispensable accompaniment. The circulation ought to reach half a million. Although the number issued is already extensive, yet it should be increased, from the fact that it is a work of great merit.—*Port Byron (N. Y.) Gazette*.

TERMS—\$2 per year, in advance. The volume commenced on the 1st of January last, and we can supply back numbers from that time. Those who prefer can commence with the (half year) July number.

COLORING PLATES.—Still further to add to the value of the work, and meet the improving taste and increasing wants of the horticultural community, an edition is published with COLORED PLATES, each number containing a full page engraving of some new, rare, and valuable fruit or flower, correctly colored from nature by the best living artists in this line. This is a new and important feature, in this country. Price \$4 a year, in advance.

Address

JAMES VICK, JR., PUBLISHER, Rochester, N. Y.

This periodical is got up in excellent style, and well sustains its former reputation under its present management.—*Middlebury (Vt.) Register*.

We are quite satisfied with the work, and are inclined to believe that, to the mass of readers, the work will be even more acceptable than it was under the charge of the accomplished Downing. We recommend the work cordially to the patronage of our friends and the public.—*Massachusetts Spy*.

Its contents embrace a variety of subjects, treated upon in the most scientific manner. The illustrations are numerous and well executed. We know of no other work of the kind on this continent that can compare with the *Horticulturist*.—*Daily Spectator, Hamilton*.

This magazine has lost nothing by falling into the hands of its present proprietor, Mr. VICK, of Rochester; for he maintains its neat typographical experience, while the new editor, Mr. BARRY brings to its editorial management abilities of a high order.—*Gazette, Keeseville, N. Y.*

The *Horticulturist* is almost invaluable to the fruit grower, and to the gardener, and it ought to be in the hands of every one. The new editor, Mr. BARRY, proves his eminent fitness for the post so lately filled by the lamented DOWNING.—*Watch Tower, Adrian, Mich.*

This publication embraces a wide field, and has something instructive for every reader. Its artistical embellishments and mechanical execution are of the highest order; for this we give credit to the publisher. Its editorials are practical, scientific, varied, and instructive. Its correspondence embraces some of the ablest horticultural writers in the Union.—*Register and Examiner, West Chester, Pa.*

This useful monthly, instead of losing interest as many feared it would in consequence of the death of its lamented proprietor and editor, Mr. DOWNING, continues to fully maintain its reputation. In fact the present editor and publisher appear to be using their best endeavors to raise it higher in public estimation than before. It is an eminently practical work, and therefore well fulfills its promises. No one who has anything to do with gardens, trees, shrubs, plants, or flowers, should fail to be among its readers.—*News and Advertiser, Middletown, Conn.*

THE WATER CURR JOURNAL.—A New Volume.—Now is the time to subscribe.—Published monthly, in a beautiful quarto. Illustrated with engravings, exhibiting the Structure, Anatomy, and Physiology of the Human Body, with familiar instructions to learners. It is emphatically a Journal of Health, designed to be a complete Family Guide in all diseases.

TERMS.—Only One Dollar a Year, in Advance. Address, post-paid, **FOWLERS AND WELLS**, Clinton Hall, No. 131 Nassau Street, New York.

"The Water Cure Journal holds a high rank in the science of health, always ready, straightforward and plain spoken, it unfolds the laws of our physical nature without any pretensions to the technicalities of science, but in a form as attractive and refreshing as the sparkling element of which it treats."—*New York Tribune.*

THE ILLUSTRATED AMERICAN PNEUMOLOGICAL JOURNAL—Devoted to Percenology, Mechanism, Education, Agriculture, the Natural Sciences, and General Intelligence, profusely illustrated with Engravings. Every family, and especially all young men and women, should have a copy. Published monthly at One Dollar a year. All letters should be post-paid, and directed to **FOWLERS AND WELLS**,

Clinton Hall, No. 131 Nassau-st., New York.

Young men about launching forth upon the activities of life, and anxious to start right, and understand their course, will find this JOURNAL a friend and monitor, to encourage them in virtue, shield them from vice, and to prepare them for usefulness and success in life. The various occupations will be discussed in the light of Pneumology and Physiology, so that every one may know in what pursuit he would be most likely to succeed.—**PUBLISHERS.**
July, 1852.—4.

Garden and Field Seeds,

FROM the new establishment of **VANZANDT & BOWDISH**, No. 114 State street, Rochester, N. Y., can be purchased of the merchants generally throughout the country, in papers or packages, on reasonable terms. Also, at the Agricultural Warehouse of **E. D. HALLOCK**, No. 24 Exchange street, Rochester, N. Y.

The Seeds from this establishment can be relied on as being of the best quality. They are mostly imported, or grown for us by the *Eastern Shakers*, and are warranted good and true. Full directions for cultivation printed on each paper and package.

VANZANDT & BOWDISH.

Rochester, May 1, 1853.

Atkins' Self-raking Reaper.

THIS machine is now offered to the public, and warranted to be a good self-raking reaper. It is also believed to be a good mower, but not yet having been sufficiently tested in grass (though it soon will be), is not warranted to be equal to a machine made mainly or wholly to mow.

The raking apparatus is of novel and very simple construction, and not liable to derangement, and every farmer who has seen it in the harvest field, says it performs the raking better than a man can possibly do it.

Price of machines at Chicago, \$175, of which \$75 must be paid on giving the order, \$50 upon successful trial, and \$50 in note payable 1st December.

The machines are most thoroughly built and warranted.

Descriptive circulars, with cuts, sent to post-paid applications. **J. S. WRIGHT,**
"Prairie Farmer" Warehouse, Chicago, July, 1853.—3t

Superphosphate of Lime,

IN BAGS and Barrels, made by **C. B. DE FURGE**, with full directions for use,—warranted a pure and genuine article—**GEO. DAVENPORT,**
No. 5 Commercial, corner of Chatham street, Boston, Agent for the manufacturer.

Also, for sale, Ground Bone, Bone Dust, Burnt Bone, Guano, and Grass Seeds, of reliable quality. [1-1f]

Hickok's Patent Improved Cider Mill and Press.

WE have been appointed sole agents for the sale of this mill and press in the city of New York. This is the most approved mill now in use. Catalogues with description and drawing will be forwarded by addressing us post-paid. Price \$40. **LONGFETT & GRIFFING,**
August 1, 1853.—2t. 25 Cliff street, New York.

Decidedly the Best and Cheapest Poultry Book in the Union.

NOW READY,

MINER'S DOMESTIC POULTRY BOOK.

ORDERS received for over Two Thousand copies of this book in advance of its publication, which is unprecedented in the sale of any work ever issued on this subject.

This is an entirely new work, and one of the most valuable books for *practical uses* that has ever been published. In preparing it, the main object was to study the *actual wants* of the Fowl-breeder, more than their fancy notions, besides containing full directions for breeding, raising, and keeping the several kinds that come under consideration: when and how originated; a large number of cuts from life, of some of the best breeds in the country; prices at which they are selling in the market; together with such other matter as was thought necessary. The varieties at present are so great, that a book published five years ago is now behind the age. This work contains a vast amount of new and useful matter, and in the number of its illustrations, great amount of practical matter, and its fine typographical execution, is ahead of any other work on Poultry ever published. The book contains over

ONE HUNDRED AND THIRTY-FIVE PORTRAITS of the most perfect specimens of newly imported and native breeds of fowls, and other cuts which have cost from \$700 to \$800—being double the number found in any similar book, while the price is only one-half as much. The names of all the new and imported breeds are given, so that any person being at all interested in them, can here find their full description, origin, &c., &c. Recollect

ONLY FIFTY CENTS

for the most complete book on Poultry ever published.

Dr. J. C. Bennett, of Port des Moines, Iowa, formerly of Great Falls, N. H., author of "A Poultry Book," and one of the most extensive breeders of Poultry in this country, to whom the proof sheets were sent, writes:

"No book ever published will compare with yours, as to *splendid and life-like engravings*, and will unquestionably be the best book published on the subject, and will sell in preference to any other work. *It will receive my untiring energy for its sale all over the United States*, and I have no doubt 50,000 copies will be sold the first year."

As it is expected this work will have a very extensive sale, it will be an object for book dealers, peddlers, agents, and others, to make early application.

The book is handsomely printed, on good paper, 12 mo. size, containing 256 pages, and sold at the low price of 50 cents paper, and 75 cents in full cloth binding. Those wanting books sent to their address will send in their orders early.

Books sent by mail to any part of the Union on receipt of the following:

For one copy, in paper, 50 cts. Cloth, 75 cts.

For two copies, do. \$1.00. do. \$1.33

For three copies, do. 1.25. do. 2.00

For four copies, do. 1.50. do. 2.50

Postage pre-paid on receipt of nine cents for paper, and twelve cents for cloth.

Books sold to peddlers, agents, and others, at reduced prices. Address, post-paid, **GEO. W. FISHER,**
Bookseller and Publisher.

Rochester, N. Y., August 1, 1853.

Hickok's Patent Portable Cider Mill,

USED in various portions of the Union, (and conceded on all hands to be the best cider mill made,) took the following premiums in 1852:

Silver Medal at the fair of the American Institute, N. Y.
Premium at the fair of the Franklin Institute, Philadelphia.

First Premium at State fair at Utica, at the Columbia and Rensselaer county fairs, and a *Diploma* at the Westchester fair.

The price of the mill is \$40, free of freight or insurance.

Manufactured by **W. O. HICKOK**, Harrisburg, Pa.

Sold by **HIGGINS & CALKINS**, Castle Wyoming county.

C. E. YOUNG, 159 State street, Buffalo.

PROVY & CREW, Geneva, N. Y.

See page 247 this Journal.

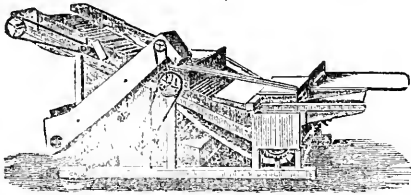
[aug.—3t.]

Suffolk and Essex Pigs.

PURE breed, for sale by
August 1, 1853.—3t.

EBEN WRIGHT,
Dedham, Mass.

AGRICULTURAL IMPLEMENT MANUFACTORY
CORNER OF CAROLINE & THIRD STREET,
BUFFALO, N. Y.



**Pitts' Patent Separator—Improved Double Plow
Horse Power—Pitts' Corn & Cob Mills, &c.**

I HEREBY give notice that since the extension of the patent right on my Machine for Threshing and Cleaning Grain, I have removed to Buffalo, N. Y., where I have permanently located, and erected a large establishment for the future manufacture of the above Machines.

The Separator has been enlarged, improved, and rendered more permanent and durable in all its parts, while the Horse Power for strength, ease, durability and cheapness of repair is not surpassed by any in the United States. This Power is warranted to stand the full strength of eight horses—also to give as much effective or useful power when driven by one or two horses as any other Horse Power, whether constructed on the endless chain or lever principle. It was put on trial at the great exhibition of Horse Powers and Threshing Machines at Geneva, July last, 1852, where it received the New York State Agricultural Society's First Premium "for the best Horse Power for general purposes." The Separator, at the same trial, also received the Society's First Premium.

My Machines will thresh and clean from three to five hundred bushels of wheat per day, and other grain in proportion.

Two hundred of the above Machines are for sale at the Agricultural Works of the subscriber in this city, all warranted to be a better article than can be purchased at any other shop, and if they do not prove on trial to be so, I will take them off the hands of the purchasers at the price they may pay me for them.

I further notify all persons who are purchasing Horse Powers and Separators to be used in California or Oregon, that I will hold them accountable for any infringements of the rights secured to me by letters patent in the above Machines, as I am manufacturing a Horse Power and Separator expressly designed for that section.

All orders for the above Machines hereafter addressed to JOHN A. PITTS, Buffalo, N. Y., will receive prompt attention.

JOHN A. PITTS, Buffalo, N. Y.
May, 1853—4f.

French Zinc Paint.

THIS new and beautiful article of Paint is now offered to the trade and public, ground in prepared linseed oil, for the first time in this country. It has been used successfully in France for the last five years, where it has superseded white Lead as a paint.

The French Zinc when properly prepared and used, makes the most brilliant and durable white in use, and is entirely free from all poisonous qualities.

The French Zinc is not more expensive than white lead, and is prepared in such a manner that it requires no farther preparation for use, than to thin it with Turpentine or raw Oil to the consistency of white lead paint.

The French Zinc is very much whiter, and has a better body, than the New Jersey Zinc.

The French Zinc is offered dry, and prepared as above, in quantities to suit purchasers, at the Manufacturer's Depot, No. 17 Buffalo st., Rochester, N. Y.

M. F. REYNOLDS.

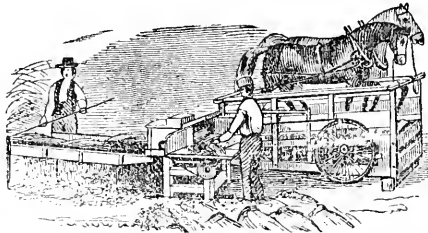
Fertilizers.

- Peruvian Guano, \$45 per ton.
- Superphosphate of Lime, 2½ cts. per lb.
- Bone Sawings, or Meal, \$2.50, per brl.
- Turnings and Crushed, \$2.25 "
- Pulverized Charcoal, \$1.00 "
- Potash Scrapings, 2½ to 4 cts. per lb.
- Plaster, ground, \$1.12½ to 1.25 per bbl.
- Sulphuric Acids, 2¼ to 2½ cts. per lb.

For sale at the State Agricultural Warehouse.
LONGETT & GRIFFING.
No. 25 Cliff street, New York.

June 1, 1853—4f.

HALLOCK'S Ag'l Warehouse and Seed Store.
No. 24, Exchange street, Rochester, N. Y.



[Emery's Patent Premium Railroad Horse Power, Threshing Machine and Separator.]

THE subscriber, late from the establishment of Emery & Co., manufacturers at Albany, where he has been engaged for the past six years, has been appointed their SOLE AGENT in Rochester and Western New York, for the sale of Emery's celebrated Railroad Horse Powers and Threshing Machines; Circular and Cross-cut Saw Mills, Feed Mills, Corn-stock and Hay-Cutters, &c.

adapted to the Power, and now offers them at manufacturer's prices, with the transportation added, and subject to the warrantee, as follows: "To work to the satisfaction of purchasers as represented in circulars and catalogues, or to be returned within three months, and full purchase money to be refunded." The attention of farmers is solicited, and a careful investigation into the construction of this Power and its comparative merits, as well as price requested, before purchasing elsewhere. He is also agent for their

COMBINED REAPER AND MOWER,

and keeps constantly on hand Plows, Hay-Cutters, Corn Shellers, Seed Planters, &c., &c., comprising a complete and extensive stock of Agricultural and Horticultural Implements generally, together with a full assortment of Field and Garden Seeds, of the best Imported and Shaker growth.

He is also agent for the sale of Seymour's Grain Drills and Broadcast Sowers, Wheel Cultivators, Gang Plows, Clover Hullers, Cider Mills, Clover Gatherers, Horse Rakes, Scythes and Snaths, Hand Rakes, Grind Stones, &c.

He will be prepared to furnish dealers with Drum and Taylor's well known Scythes; also Manure, Straw, and Hay Forks, Snaths, Rifles, and other haying tools at manufacturers' prices, wholesale and retail.

Particular attention is called to a New Plow, which is believed to be the best cast iron Plow ever offered, and which is warranted to do better work, with less expense of team, than any other Plow heretofore sold in Rochester—while the price is less than any other equally well finished.

The "uniform one-price cash system" will be adopted, with prices as low as the cost of articles, and just compensation for labor and time, will allow.

Farmers and others are invited to call and examine the stock of Machines and Implements, and are assured that no effort shall be wanting to meet promptly the wants of a discriminating public.

Circulars and Catalogues furnished gratis on application personally or by mail. E. D. HALLOCK,
June 1, 1853—4f No. 24, Exchange street, Rochester.

Extra Improved Superphosphate of Lime for Sale.

THE subscriber, at additional expense, has recently made important improvements in the manufacture of this well tested and valuable manure, and is now prepared to furnish an article assuredly equal, if not superior, to any in the market, at the lowest cash prices.

Put in bags of 50, 100, and 150 lbs. each, and branded "No. 1 Superphosphate of Lime." Manufactured and sold by Wm. PATTERSON,
Divison Street Wharf, Newark, N. J.

AGENTS:

- HASKELL, MERRICK & BULL, 10 Gould-st., N. Y.
- H. EMERY, Esq., Agricultural Warehouse, Albany.
- PHITTIER & FULLER, Hallowell Maine.
- E. GREEN, Esq., Easton, Penn.
- S. CHASE, Esq., Middletown, Conn.

July, 1853—4f.

Fruit and Ornamental Trees, &c., &c.

THE subscribers have the pleasure of announcing an immense stock of Trees, &c., for the autumn trade, embracing—

Standard Trees, for Orchards.
Dwarf and Pyramidal Trees, for Gardens.
Ornamental Trees, for Streets, Parks, and Pleasure Grounds.

Rare and Beautiful Lawn Trees.
New and Rare Weeping Trees.
Evergreen Trees, embracing the rarest species of Pines.
 Firs, Spruces, Yews, Cedars, Junipers, &c.
Italy Flowering Shrubs.
Roses, of all classes, and embracing the newest and best sorts.

Dublius, the finest English prize sorts.
Carpenterhennaus, including the finest of the new Pom-pine varieties.

Phloxes and Paeonies, superb collections.
Teething Plants, a complete assortment.
Bulbous Roots, just imported from Holland, and of the first quality.

Hedge Plants.
Rose Edging.
Asparagus, &c., &c.
 The favorable season has given every thing a vigorous and fine growth.

All orders, whether for large or small quantities, executed with the greatest care, and in strict compliance with the wishes of the purchaser.

Packing done in the most secure and skilful manner, so that parcels can be transmitted thousands of miles in safety. Nurserymen and dealers in Trees will be supplied on the most liberal terms.

The following Catalogues are sent, *gratis* and *pre-paid*, to all who apply and enclose one postage stamp for each:

No. 1, Descriptive Catalogue of Fruits.
 No. 2, do do Ornamental Trees, &c.
 No. 3, do do Dahlias, Green House Plants, &c.

No. 4, Wholesale Catalogue.
 ELLWANGER & BARRY,
 Mount Hope Nurseries, Rochester, N. Y.
 September 1, 1853.—11.

Highland Nurseries, Newburg, N. Y.

A. SAUL & CO., in calling the attention of their patrons, and the public in general, to their very extensive stock of

FRUIT AND ORNAMENTAL TREES, SHRUBS &c., which they offer for sale the coming autumn, would remark, that owing to the past summer being one of the most favorable for the growth of Trees which they have had for many years in this locality, their stock of Trees and Plants, in every department, is *larger, more diversified, and in every respect finer than usual.*

To particularize within the limits of an advertisement would be impossible. They therefore refer planters and dealers in Trees to their Catalogue, a copy of which will be sent by mail to all *post-paid* applicants for the same, on enclosing a postage stamp.

They invite especial attention to their *very large* stock of Standard and Dwarf Pear and Cherry Trees; also, Plum, Peach, Apricot, and Nectarine Trees; as well as Grape Vines, Gooseberries, Currants, Raspberries, Strawberries, &c., in every known variety, together with all other plants, &c., usually kept by the trade.

500,000 strong two years old Osage Orange Plants, in three different sizes, at \$10, \$8, and \$6 per 1,000.
 Buckthorn Plants, two years old, at \$5 per 1,000.
 Highland Nurseries, Newburg, N. Y., Sept. 1, 1853.—12.

Locke Nursery.

THE subscriber offers for sale at his Nursery in Locke—
 One hundred thousand Pear seedlings, 1 year old, at \$5 and \$10 per thousand.

Twenty-five thousand Cherry seedlings, 1 year old, at \$5 per hundred.

Five thousand Peaches, 1 and 2 years old, budded, at \$10 and \$12 per hundred.

Fifteen hundred Cherries, 1 year old, budded, of fine growth, at \$18 per hundred.

Together with a good assortment of Apples, Pears, and Plums, from 2 to 4 years old, budded, of the best varieties. All communications will receive prompt attention addressed to

J. D. CONKLIN,
 Locke, Cayuga county, N. Y.

September 1, 1853.—11*

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Premium Strawberries.

WM. R. PRINCE & CO., Flushing, will send their new Supplementary Catalogue of Trees, Shrubs, and Plants, for 1853 and '54, comprising the choicest collection of Strawberries existing in America or Europe, many of which are in no other collection, and have never before been offered to the public. They are guaranteed to be identical with the descriptions in the April and May numbers of the Horticulturalist, and free from all spurious admixture, including the new Ohio varieties, which are so often met with in a mixed State. The prices for all will be as low, and many lower, than charged elsewhere, and they will be packed so as to ensure their safe arrival. Applications for Catalogues to be post-paid, with stamps enclosed.
 Sept. 1, 1853.—11.

New York Agricultural Warehouse.

HORSE POWERS, Threshers, Fan Mills, Smut Machines, Grain Drills, Hay Presses, Grain Mills, Corn and Cob Crushers, Cider Mills, and a large assortment of Plows, and all kinds of Agricultural and Horticultural Implements.
 Peruvian Guano, Superphosphate of Lime, Bone Dust, and other fertilizers, of the most superior kinds.
 R. L. ALLEN,
 Sept. 1, 1853. 189 and 191 Water street, New York.

The Practical and Scientific Farmer's own Paper

THE GENESEE FARMER,

A MONTHLY JOURNAL OF

AGRICULTURE AND HORTICULTURE,

ILLUSTRATED WITH NUMEROUS ENGRAVINGS OF
 Farm Buildings, Domestic Animals, Implements, &c.

VOLUME XIV, FOR 1853.

DANIEL LEE, JAMES VICK, JR., & JOSEPH HARRIS, Editors.

P. BARRY, Conductor of Horticultural Department.

Fifty Cents a Year, In Advance.

Five Copies for \$2—Eight Copies for \$3, and any larger number at the same rate.

All subscriptions to commence with the year, and the entire volume supplied to all subscribers.

Post-Masters, FARMERS, and all friends of improvement, are respectfully solicited to obtain and forward subscriptions.

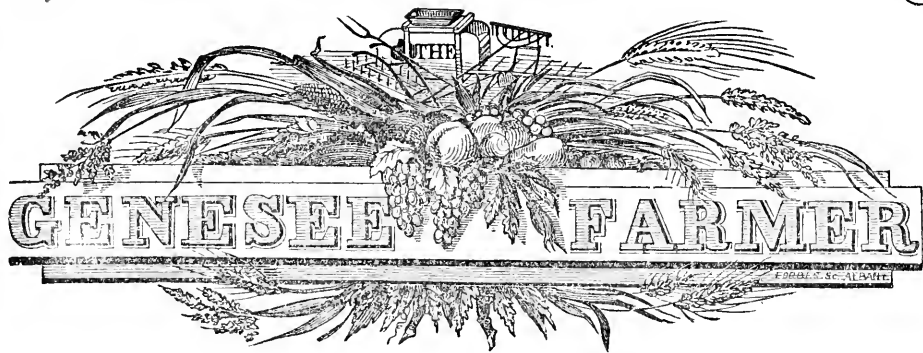
Subscription money, if properly enclosed, may be sent (post-paid or free) at the risk of the Publisher. Address to

DANIEL LEE,

November, 1852.

Rochester, N. Y.

STEREOTYPED BY J. W. BROWN, ROCHESTER, N. Y.



Vol. XIV.

ROCHESTER, N. Y., OCTOBER, 1853.

No. X.

AGRICULTURAL ENTOMOLOGY.

ENTOMOLOGY is that department of natural history which treats of insects. Agricultural entomology limits its investigation to such insects as injure the field and garden crops, household possessions, orchards, forest trees, and domestic animals of farmers and gardeners. The number of species that subsist mainly or entirely at the expense of cultivators, is much larger than one would suppose who had not made these destructive animals and their ravages the subject of particular study. BARON KOLLAR, following generally the arrangement of LATREILLE, treats of insects injurious to agriculturists under twelve orders. Dr. HARRIS is less comprehensive in his plan, confining his treatise to insects injurious to vegetation; but he is more thorough and practical, so far as he goes.

Having on another occasion briefly described the twelve orders of KOLLAR, we shall now attempt a definition of the six orders, to the discussion of which Dr. H. has devoted an octavo volume of some 500 pages. The names of these orders are: *Coleoptera*, *Orthoptera*, *Hemiptera*, *Lepidoptera*, *Hymenoptera*, and *Diptera*. Before proceeding to describe the several orders named, it may not be amiss to state that the word "insect" is derived from the Latin *insecare*, to cut into, or notch; most insects being almost severed at the points where the head is joined to the thorax, and the thorax to the abdomen, as in the ant and honey-bee. Insects do not breathe through their mouth, but have several air holes called spiracles on each side of their bodies, usually nine in number, for the free ingress and egress of the atmospheric air, needed to purify their blood. The brain of an insect is small; and instead of a spinal marrow, a kind of knotted cord extends from the brain to the hinder extremity; and from the knots on this cord and the brain issue numerous small, whitish threads, which are nerves, and spread over the animal system. A few water insects breath by means of gills. The heart is a long tube lying under the back, having little holes on each side for the admission of the juices of the body, which are prevented from escaping again by valves or clappers, formed to close the holes within. By the appropriate arrangement of valves, the blood flows toward the head, and is prevented from passing in an opposite direction. The blood is either colorless or a yellowish fluid, and does not circulate in proper arteries and veins; but, being driven to the head by the contraction of the tubular heart, it is discharged into the fluids derived directly from the digestive organs, and is again oxygenated by contact with the air pipes, and finally it returns into the tubular heart for continued circulation. Insects have no internal skeleton like the *vertebrata*.

ORDER I. *Coleoptera*. The word chosen to designate insects of the first order is formed from *kolcos*, a sheath; *pteron*, a wing. [We have no Greek type.] The idea conveyed is, that all insects of this order have their wings in a sheath, or more properly

under wing-covers. Beetles, of which there are over four thousand species known, belong to this order. Beetles are not *bugs*, although often called such. They have jaws for biting, and are nothing lothe to use them for that purpose. Bugs (*Hemiptera half-wingers*) take their food by suction through a beak or rostrum, and differ from beetles in other respects. Under the two thick wing-covers which meet in a straight line on the back, beetles have two filmly wings that fold transversely. Their larvæ are grubs, and generally provided with six true legs, and sometimes with a terminal pro-leg; more rarely without legs. The pupæ have wings and legs distinct and unconfined. Many of these insects, particularly in the grub state, are very injurious to vegetation. The grubs which so abound in dead and living forest trees are mostly the young of beetles.

ORDER 2. *Orthoptera* (cockroaches, crickets, grasshoppers, &c.) *Orthoptera* is derived from the Greek *orthos*, straight; *pteron*, a wing. The wings of this order are four; two rather thick and opaque upper wings, overlapping a little on the back, and two longer thin wings, which are folded in plaits like a fan. Transformation partial; larvæ and pupæ active, but wanting wings. All the insects of this order, except the camel cricket (*Mantidæ*), which prey on other insects, are injurious to our household possessions, or destructive to vegetation.

ORDER 3. *Hemiptera* (bugs, locusts, plant-lice, &c.) To this order belong insects with a horny-beak for suction; four wings, of which the uppermost are generally thick at the base, with thinner extremities which lie flat and cross each other on the top of the back, or are of uniform thickness throughout, and slope at the sides like a roof. Transformation partial; larvæ and pupæ nearly like the adult insect, but wanting wings. The word *Hemiptera* is derived from the Greek *hemisus*, half, and *pteron*, a wing, half-winged insects. The outer wings are often half horny and half membranaceous; and in some species shorter than the body, or entirely wanting, as in the bed-bug.

ORDER 4. *Lepidoptera* (butterflies and moths.) Insects of this order have a mouth with a spiral sucking tube; wings four, covered with branny scales. Transformation complete. The larvæ are caterpillars, and have six true legs, and from four to ten fleshy pro-legs. Pupa with the cases of the wings, and of the wings indistinct and soldered to the breast. The word *Lepidoptera* is derived from *lepos*, a scale (like that of a fish); *pteron*, a wing. The white, mealy substance that adheres to the fingers when butterflies and moths, or millers are handled, is composed of minute shining scales. Butterflies extract nectar from flowers by their long flexible sucking tubes.

ORDER 5. *Hymenoptera* (sawflies, ants, bees, &c.) Insects with jaws; four-veined wings, in most species, the hinder pair being smallest, and a piercer or sting at the extremity of the abdomen. Transformation complete; larvæ mostly maggot-like, or slug-like; of some, caterpillar-like; pupæ with legs and wings unconfined. The word *hymenoptera* is derived from *hymen*, a membrane; *pteron*, a wing—meaning insects with membranaceous wings.

ORDER 6. *Diptera* (mosquitos, gnats, flies, &c.) Insects with two wings only, having a horny or fleshy proboscis, and two knobbed threads called balancers, or poisers, behind the wings. Transformation complete. The larvæ are maggots without feet, and with the breathing-holes generally in the hinder part of the body; pupæ mostly incased in the dried skin of the larvæ, sometimes, however, naked, in which case the wings and legs are visible, and more or less free and unconfined. The word *diptera* is derived from *dis*, two, or twice, and *pteron*, wing; two-winged insects.

We shall give one or more articles on each of the above orders, and endeavor to explain the economy, and suggest ways and means for destroying these pestiferous animals. They destroy every year more than twenty million dollars' worth of property.

AGRICULTURAL STATISTICS.

THE following remarks, which have appeared in the *Mark Lane Express* and *London Farmers' Magazine*, may interest some of our readers :

The agriculture of the Union has been less affected by external influence than that of Canada, and more from internal energy—owing, no doubt, to the difference of the political relation between them and the mother country, coupled with the growth of their respective populations, the tide of emigration rolling principally into the boundless prairies of the former. Some of the older States, as New York, for instance, are densely populated, compared with Canada, and have proved an example to the other States where the growth of society and civilization has been less. Hundreds of thousands of emigrants have left the mother country with no other idea of destination than to get to New York—once there, they would work their way into the interior as Providence might direct their steps. Hence labor, an article of no small value in America, was more plentiful in that State than in the others, creating a larger consumption and better markets—circumstances of the highest importance to its agriculture, as they afforded the means of reclaiming its soil and saving a little independence. Many of the early settlers in this State, although landing poor, acquired capital sufficient to enable them to purchase estates for their families.

But while an abundance of labor aided the progress of agriculture in this and older States similarly situated, it was the means of sooner exhausting their soils, owing to the scourging system followed, bringing their farmers, as it were, to a stand-still—a fact which has lowered them in the estimation of emigrants for nearly the last half century. "Human toil is often praised for being highly *productive*," says Dr. LEE, an American writer, alluding to the question at issue, "when, had the whole truth been known, it would have been seen to be remarkably *destructive*," as the counties of New York have experienced; for the exhaustion of their soils have not only lowered them in the estimation of emigrants, but of their own old settlers, many of whom sold out as soon as they could find a purchaser, bethinking themselves to the bush husbandry of the interior, beginning the work afresh as they or their forefathers did.

The rights of the public, we have said, embrace agricultural statistics—a subject on which the American farmers and Congress appear more united than the English, and one in which they place more importance, obviously because they take a more sound, comprehensive, and practical view of it, attributing even the exhaustion of the soil to the want of the necessary statistical information; for, say they—quoting official authority, the Report of the Commissioner of Patents—"Good and bad farming are now so blended, that delinquents escape all exposure; while such as do well, are denied that distinction which is their just reward of merit. There is no resisting a legitimate argument, sustained by conceded facts. Mistakes in practice, and errors in theory, must give way before the light of truth: and the truth alone should be diligently sought and widely disseminated among the farmers of the Republic." In short, it is not merely the number of acres and the amount of produce which comprise American statistics—for they include the *number of good and bad farmers* also. For example:

Of the 12,000,000 acres of improved lands in the State of New York, 1,000,000 are so cultivated as to become richer from year to year—being in the hands of 40,000 farmers who read agricultural journals, and nobly sustain the State and county societies of that commonwealth. Three millions barely sustain their fertility, and are cultivated by a class of farmers who *read not*, but do their best to follow the practice of the last. 8,000,000 acres are in the hands of 300,000 cultivators who follow the old practice of exhausting the soil, which has fallen from 30 to 5 bushels of wheat per acre—Albany county, in 1845, producing only $7\frac{1}{2}$ bushels per acre; Dutchess county, 5; Columbia, 6; Rensselaer, 8; Westchester, 7, &c.; while Albany, in 1775, produced from 20 to 40. The 300,000 persons that cultivated those 8,000,000 acres produce each annually 25 dollars less than they would have done had the land not been exhausted. There is no escape from this oppressive tax of 7,500,000 dollars, but either to improve the land at an expenditure of 100,000,000 dollars, or run off and leave it. It is calculated that Maryland, Virginia, North and South Carolina, and Georgia, have lost the equivalent of 500,000,000 dollars by exhaustion of land.

It is not merely statistics generally as above, but individually as follows: "There are samples of wool in the Patent Office, the product of a sheep that yields 18 lbs. of washed wool a year, and weighs 420 lbs. This mammoth sheep is the property of Colonel JOSIAH WARE, of Clarke county, Virginia, whose best fat wethers sell at 35 dollars a head." Other examples are given where flocks which once yielded 5 lbs. per fleece, have now fallen to 2 lbs., &c. The great WASHINGTON'S fell from 5 to $2\frac{1}{2}$ lbs. during his war.

The rights of the public, however, involve more than statistics; for if the soil has been exhausted, it has a right to know the cause and remedy, as well as the amount of exhaustion; but, while it obviously enjoys this privilege, it has also its duties to perform toward the farmer. Hence for the last eight or ten years the American Government has been collecting all the information which the improvement of its agriculture demands, not only from individuals of the greatest talent in its own provinces, but from all corners of the world, through the instrumentality of its Patent Office, which collates and arranges the whole in the shape of an annual report of some six hundred

octavo pages, for circulation among farmers, who have fully appreciated its value with gratitude; for the effect produced is far beyond the most sanguine expectation previously entertained from official information of this kind. From time immemorial the American farmers have enjoyed the benefits of State and county societies—cattle, implement, and produce shows—with plowing matches, and such like machinery, the same as English farmers have done—besides companies for the importation of English cattle. But such was found insufficient, never having produced in half a century the effect which the Patent Office has done in one season; because through it the progress of chemical and mechanical science is brought to bear upon the different branches of agriculture with a different force and a different interest to the farmer.

The Union has justly been termed “a nation of farmers,” farmers forming “a large majority of the voters,” so that they have themselves to blame if their interests are neglected, either in Congress or State Legislatures. Hence, however, they may have hitherto under-estimated the advice of Washington, who was himself a farmer, and strongly advocated the cultivation of agricultural science, they have now caught the true spirit of their great president, and are exerting every nerve to reduce it to practice without fear of opposition, and the progress they are making is only equalled by the magnitude of the work before them. Complaints are no doubt yet many, but no sooner established than the necessary steps are taken to have them redressed. The rights of American laborers have hitherto been sadly neglected; for half their number are slaves, while the domestic happiness of the other half has been little cared for! The plight of the poor emigrant, who has hitherto arrived in the Union with an empty pocket, was sober indeed. In this country our large manufacturers—a class ever alive to their own interest—are beginning to desery a short supply in the labor market. Hence cottages and gardens for their operatives are fast being built, and every other prudent means used which the circumstances of the case demand; but in America, although labor has been scarce, no such effort has been made to induce the surplus rustics of our overflowing provinces to emigrate; for to them the threshold of colonial life has been truly purgatorial: indeed, such was its barbarous character, that few penniless laborers, however indifferent they might be to civilized life, ventured to cross the Atlantic unless they had either a friend or relative before them. Happily, however, the American Patent Office has at length succeeded in removing the farmers' candle from under the bushel. Chemical and mechanical science, involving the proper application of labor to the soil, is now becoming better understood, so that the domestic comforts of the laborer are beginning to be cultivated. Hence the stimulus which it has given to the “exodus” at home.

Such are a few desultory observations on the means now being used by the Americans to improve their agriculture. In the language of the Patent Office Report, “To compete with Englishmen in feeding people at their own doors, while Americans have to transport their breadstuffs and provisions from 2,000 to 4,000 miles to reach the consumer, is obviously a hard business for our farmers.” It is one, however, which the American is strenuously and successfully pursuing; and let us, therefore, not be found sleeping at our posts in the conflict, since we cannot avoid joining issue in it.

We hope that we may say without egotism, that the Patent Office Report so favorably noticed abroad, and especially all the facts and figures quoted therefrom, were from the pen of the person named therein, who has often brought the great subject of Agricultural Statistics before the American public. The bill (which became a law) for taking the census of the State of New York in 1845, as well as the blank schedules for agricultural statistics, by which the yield per acre was ascertained, originated with the proprietor of this paper, as chairman of the committee on Agriculture; but so little has been accomplished compared with what ought to have been done, both at Albany and Washington, that we have more reason for regret than to be proud of the result. It has long been a source of deep pain to us, that it is not possible to obtain a patient hearing of the important facts relating to agriculture in this country. Our countrymen are most unwilling to have the fact demonstrated before their eyes that “Human toil is often praised for being highly *productive*, when, were the whole truth known, it would be found highly *destructive*.”

If the Legislature had adopted the statistical policy which we recommended in 1844, after years of patient observation and study, all would now know in this State who are dealing justly by the soil they cultivate, and who are not. We complained in the Patent Office Report for 1849 that “good and bad farming are now so blended that delinquents escape nearly all exposure, while such as do well are denied that distinction which is the just reward of merit.” Is not this true? and does it not serve to repress improvement in tillage and husbandry? In our humble opinion, agricultural statistics should be collected every year to be of essential value to agriculture. Assessors, or tax-col-

lectors, might obtain the needed information in every State at a trifling expense, and the facts so ascertained would soon develop truths of the greatest importance.

The guessing system of miscalled statistics, so long in vogue at the Patent Office, we exploded four years ago, and still cherish the hope that State Legislatures may ere long take measures to learn something of the true principles of good husbandry; and we again repeat, what we have said a thousand times before, "To compete with Englishmen in feeding people at their own doors, while Americans have to transport their breadstuffs and provisions from 3,000 to 4,000 miles to reach the consumer, is obviously a hard business for our farmers." Our meaning is, that it is hard to draw so largely and continuously on the natural resources of the soil and not impair its fruitfulness, and ultimately impoverish both the land and its cultivators. American statesmen overlook this paramount land and bread question. Educated farmers must become practical statesmen, and take the lead in legislation, before either agriculture or political economy can be placed on a sound and enduring basis.

FALL PLOWING.

HAVING some twenty odd acres we intend planting to corn next spring, the question comes up in a practical way, What will the soil gain in the available food of plants by plowing it this fall? On light sandy or gravelly soils we doubt the propriety of plowing several months before the seed is committed to the earth, because we fear that the elements of both organic and inorganic matter rendered soluble by tillage may be washed out of the open ground, and the land impoverished rather than enriched by fall plowing. We have no doubt of the fact that tillage often operates greatly to the injury of the soil, sometimes by dissolving the food of plants prematurely, so that a part is lost by the washing of the plowed earth long before it is planted or sown, and other times the fine clay and sand run together and become hard before spring, so that the labor of fall plowing is lost. These remarks are made to show that there are two sides to the question of autumn plowing for seeding in the spring. Soils which are either very open, or very compact from an excess of fine clay, gain little by stirring them long in advance of planting. Frost, however, may and often does, operate to improve clay land by rendering it more friable, if plowed in the fall or winter. This is particularly true of clayey loams, soils that do not run together like potter's clay. Clay soils which are not benefitted by fall plowing, nearly always need underdraining to increase their porosity and friability. By throwing the ground into beds when plowed, and opening a deep water furrow between each land, much may be done to prevent the soil from becoming very hard in dry weather, and mortar in wet weather. Undoubtedly autumn tillage saves field labor in the spring, when one's teams may not be in the best possible condition for service, while a great deal of work is suffering to be done. Had we plenty of good teams and laborers, we should rarely plow any field more than four weeks before it was to be sown or planted.

So soon as tillage develops the elements of fertility, and rains fall to dissolve them, our notion is, that the seed should be in the ground to grow and consume the raw material of the crop. We are well aware of the recent researches of Prof. WAY and others, showing the retentive power of soils in preventing the loss of manures applied to land in a state of solution; we are not, however, satisfied that expectations in that matter are to be fully realized by farmers. Mr. MERRI says that his liquid manure, after passing through several feet of soil, still contains both organic and inorganic matter; and we know that in all good land, rain-water that comes out in springs and wells is not *pure*, but abounds in both vegetable and mineral salts dissolved out of the

ground. Tillage increases the solubility and solution of these substances, which are the food of plants; and hence tillage at the time of planting and afterwards augments the feeding and growth of crops.

Having decided to plow a field in the fall, we should not hesitate to break up the subsoil a little deeper than it was ever before exposed to the light, heat, frost, and atmospheric gases above ground. These are powerful chemical agencies, and admirably adapted to deepen and improve a soil. If one can turn under a good coat of grass, weeds, mold, or manure, so much the better for the land. Break the ground fine—that is, cut narrow furrows, as well as deep ones, that the tillage may be perfect.

INTERESTING EXPERIMENTS IN PORK-MAKING.—The *Irish Farmers' Gazette* contains an interesting experiment in fattening hogs by feeding one lot on cooked turnips and barley meal, and another on raw turnips crushed, adding meal, and permitting the mass to ferment before being fed. There were four hogs in each lot. Those fed on cooked turnips weighed, when the experiment commenced, on the 27th November, 1852, 816 pounds. This lot were fed three times a day, and consumed 280 pounds daily, steamed and mixed with 12 lbs. of bran and barley meal. In thirty-nine days they had gained an average each of 103 lbs., or an aggregate of 412 lbs. To produce this gain there were consumed 9,920 lbs. of turnips, and 468 lbs. of bran and barley meal. The other lot of four hogs weighed, at the commencement of the experiment, 792 lbs. They, too, were fed three times a day, and consumed 140 lbs. pulped turnips, fermented and mixed with 12 lbs. of bran and meal. It will be seen that the hogs fed on raw turnips consumed just half the quantity given to the others, while they gained an average each of 110 lbs., and 28 lbs. more than those fed on cooked turnips. In cooking the latter, just a ton of coal was consumed in the thirty-nine days. How the turnips were crushed to a pulp is not stated; it might be done in a bark-mill, or other machine made for the purpose. The pulped turnips, bran, and meal stood three or four days before feeding. Each tub had an orifice in the bottom for a part of the water in the turnips to run out into troughs, which otherwise was found to check the fermentation. The liquor received in the troughs was fed to young pigs. We suspect that turnips naturally contain too much water (over 90 per cent.) to fatten hogs economically. A part of the nutritive element in the turnips passes out of the system by the bowels, and a part from the thin blood, by the kidneys, dissolved in an excess of urine. A little less of the roots, and more barley, oat, or corn meal, would be cheaper and better feed.

WASHINGTON AGRICULTURAL INSTITUTE.—It is known to our readers that the Mount Vernon estate, the home of WASHINGTON, has recently been contracted to a company at the round sum of \$200,000, with the reservation that if Congress shall decide to purchase at the same price, it is to be transferred to the Government. Public sentiment has been directed to the subject in a considerable degree since this proposition was made public, and we think there has been a very general approval of the project of purchase by the Government. Should this question be settled affirmatively by the next Congress, the question will then arise as to the disposition which shall be made of the grounds, and in what manner they shall be improved. With a proper system of management and appropriate improvements, Mount Vernon might become a great place of resort for all who revere the memory of the Father of his Country.

Among the propositions submitted through the public press, is one from the *Rochester American* which seems to merit more attention than has been given to any other suggestions we have seen upon the subject. We quote from that paper as follows:

"It is well known that the profession which WASHINGTON loved above all others was that of the farmer. He pressed upon the attention of Congress in his last annual message the importance of agriculture, and the duty of Government to promote its improvement by proper pecuniary assistance. For reasons that we need not discuss, the wise and patriotic suggestions of the illustrious Farmer of Mount Vernon in behalf of agriculture were never acted on by an American Congress, and the sciences of tillage and husbandry have never been fostered in the United States. We can not believe that this general neglect of the study of agriculture is much longer to continue; and if a beginning is ever to be made for the solid advancement of rural knowledge, it is eminently fitting

and proper that the first institution established for that purpose should be on the farm of WASHINGTON. Agriculture is an experimental science; and yet there is not one acre of land in the whole republic exclusively devoted to experimental purposes. Congress has been publishing annual reports on rural affairs, emanating from the Patent Office, for the last ten years, and who can name one new fact which Government has developed, calculated to make two blades of grass grow where one grew before? Congress has caused no agricultural experiments to be made, has revealed no new truth, nor elucidated one doubtful practice in any department of husbandry or tillage. There is no lack of agricultural journals and book-publishers to print and circulate all really valuable information that may be called into existence by scientific researches. Hence, instead of expending so many thousands of dollars in needless printing, Congress should be instructed by the people to expend an equal sum in making investigations designed to illustrate in a clear and practical manner the true principles of agriculture. This is what the great farming interest most needs, and what the estate of WASHINGTON on the Potomac is admirably adapted to accomplish.

"A Washington Agricultural Institute established at Mount Vernon, and properly endowed or supported by the Government, would do more for agriculture than the West Point Military Academy has done for the army and civil engineering. Hitherto there have been insuperable difficulties in the way to prevent the founding of agricultural schools and colleges in the several States which are entirely unknown to American statesmen. Two of these difficulties we will name: one is the want of thoroughly educated men to serve as professors in agricultural institutions. We have no such men in this country, because it has never possessed a single college and experimental farm for the complete professional education of teachers of rural arts and sciences. The young men educated at West Point, are duly prepared to teach military arts and sciences to all engaged in military operations, whose advantages for the acquisition of professional knowledge have been less favorable. We can never have competent teachers of agricultural sciences before we create at least one institution for their thorough education."

The plan has many features calculated to commend it to public favor. It may be set down as a settled fact that if the Government is to purchase the estate in question at all, a good round sum of money is to be annually expended upon it. To this we have no objection if that expenditure can be made to contribute in any reasonable degree to the improvement of the condition of the population of this country. There is force in the suggestions of the *American*. If it is contemplated to carry into practice on the estate any of the principles inculcated by WASHINGTON, we know of none more worthy of attention than the provision for agricultural improvement of the country. Agriculture was the great theme upon which his mind, in days and years of rest from the public service, was accustomed to dwell, and to which he contributed to a greater degree than any man of his day. It seems, therefore, fitting that in any disposition which shall be made of Mount Vernon, this leading interest of the country should have paramount attention.—*Rome Sentinel*.

The remarks credited to the *Rochester American* in favor of the establishment of a Washington Agricultural Institute on the Mount Vernon estate, are a part of an article written by the proprietor of this paper. We have reason to know that such a monument to the illustrious Farmer of Mount Vernon would be gratifying to the present owner of the property, and to Mr. GEORGE WASHINGTON PARK CURTIS, the adopted son of General WASHINGTON, who resides at Arlington, near the federal metropolis. The country greatly needs a National Institution for the purpose of cultivating all the sciences most intimately associated with agriculture, in connection with the practice of husbandry and other rural arts. Science and practice, the study of sound principles, and the satisfactory illustration of such principles on the farm, must operate together before we can achieve the best results. In this way theories will never outrun their usefulness, for experience will at once correct their errors.

Agriculture being an experimental science, to advance it, more and better experiments are indispensable; and why should not Government aid a little in the making of these useful experiments? Farmers every where ask for more light, that they may see and understand *why* one soil is so much better than another, and thereby be able to improve all the arable lands in their possession at the least possible expense. Let them send in their petitions to Congress to purchase Mount Vernon and erect thereon an institution that shall be to agricultural arts and sciences what West Point Academy is to military arts and sciences. Pupils at such an academy, coming from all the States, and carrying home with them a thorough practical and scientific education, would be able to found and sustain State institutions wherever needed. From the want of competent professors or teachers, such institutions have hitherto never been called into existence; and to educate teachers there should be at least one national college of the very highest order.

IRRIGATION AND TOWN SEWARAGE.—The following remarks, made at a meeting of the Royal Agricultural Society of England by one of the most enterprising farmers of the age, will be read with interest :

Mr. MECUR considered there was no practical difficulty in conveying town sewerage to agricultural districts, except that farmers and landlords must first be convinced that town sewerage is the best guano in a liquid state. He had found practically that no amount of solid manure would effect, in a given time, equal results with liquid manure, especially on pasture. He considered that, allowing six individuals as amply manuring one acre, 350,000 acres would, if necessary, absorb all the town sewerage of London with its 2,000,000 of inhabitants. Its cartage in the country costs at least 6d. per ton per mile; and as liquefied manure could be conducted at a twelfth or less of that cost, that is the most desirable condition for transmission; all solid manures might be fluidised, and sink immediately to the roots of plants, as at his farm; consequently the new fibres of growing plants, deep in the soil, receive their food in an available condition. Mr. MECUR then referred to Prof. Way's papers on the power of soils to fix ammonia, and stated that in strong clay soils he had, while irrigating, caused the drains, at five feet depth, to discharge manure-water having both color, smell, and fertilizing properties, although he had hoped all these might have been arrested by the soil. He concluded his remarks by entering largely into the details of pipage, gutta percha tubing, and the general management of irrigation with manure. Mr. MECUR then invited the members to inspect his arrangements in their present improved state; and he should feel gratified in finding that any expenditure of his own, made by way of trial and experiment, should have eventually led to sound and practical experience, of which others might so freely avail themselves. He hoped on the 20th of next month to meet many whom he then saw present, at his "gathering" at Tiptree, where the whole of his operations would be laid open to their inspection and friendly discussion. In the course of his details, Mr. MECUR gave to the members a most graphic account of the manner in which, by means of his great tank, and the incessant action of currents of air, animal matter of every form and degree of solidity was rapidly assimilated into liquid manure, and hurried off daily with the resistless force of steam-power through his system of pipage over the land. The discussion closed with an interesting detail of facts connected with steam-power; price, number, material, and coating of pipes; fresh or ripe manure; and action of silicates on strengthening rye-grass and other siliceous plants.

ARTESIAN WELLS.—A correspondent of the *Memphis Appeal*, who suggests the propriety of supplying that city with water by means of an Artesian well, furnishes the following interesting extracts in relation to these wells :

The origin of Artesian wells is very ancient—the first diggings of which we have any record, were made in 1126, in Artois, in France; hence their name, Artesian wells. Divers European nations, among them are England, Germany, and France, claim the priority of the invention; but both the Chinese and Egyptians were acquainted with Artesian wells.

The Artesian well is but a research made by means of the drill for a stream underground, whose reservoir will give it sufficient force to cause it to ascend to the surface of the earth. The earth's crust is composed of parallel beds, which are separated by joints well drained, and these beds have been modified by the successive deposits of water which have coursed at different epochs the surface of the continents. The earth's regularly stratified horizontal beds have received successive shocks which have dislocated and inclined them. Before determining the location of an Artesian well, it is necessary to examine the section of country, the level of its rivers and valleys, and the dip of the strata. With these given, the scientific man can determine approximately the necessary depth of the well.

The quantity of water to be obtained from a well depends entirely upon its geographical and hydrographic conditions; it may vary from ten gallons to twelve hundred gallons a minute, or 1,728,000 gallons every 24 hours.

Artesian wells not only give soft water to cities, towns, and villages, but are equally valuable to extensive farms and factories, guarding them against the long drouths which sometimes happen in the summer time; manufacturers would not suffer for want of water—in the driest summer their reservoirs could be constantly supplied; and the extensive farmer could also derive an equal benefit by judicious irrigation.

Within a few years this means of obtaining water has been extensively prosecuted in Europe, where there are now more than 3000 wells. Venice, situated on the Adriatic sea, and entirely surrounded by salt water, with a population of 125,000 souls, is supplied abundantly with Artesian wells. The well of Grenelle, Paris, furnishes water to more than 70,000 people; the water in this well flows 112 feet above the surface of the ground. The inhabitants of the town of Sheerness, England, are supplied with water from two Artesian wells. The provinces of Modena and Bologna, in Italy, for a long time have been supplied in the same manner, and so have some parts of London. The famous Artesian salt well at Kissengen, in Batavia, was commenced eighteen years ago, and which, it was feared, would have to be abandoned as a failure, has recently given the most satisfactory results. The town is located in a saline valley, 984 feet above the level of the Baltic sea.

Finally, in October, 1850, at the depth of 2067 feet, perseverance was rewarded by complete success. A violent explosion burst away the scaffolding built to facilitate the operations, and a column of water four and a half inches in diameter spouted forth to the height of 98 feet above the surface. The water—clear as crystal, is a temperature of 66 Fah., and is abundantly charged with salt. 6,600,000 pounds of salt is made per annum, and valued at 300,000 florins, after deducting all expenses.”

There are a great many Artesian wells in the United States. The wells in Selma, Cahawba, and Montgomery, Ala., discharge an abundance of water, some of which discharge as much as 1300 gallons per minute, and none of them are more than 950 feet deep. The well at Columbus, Miss., is situated 100 feet above low water mark, and is 565 feet deep, and discharges about 30 gallons per minute. The temperature of the water is 65 Fah., while that of the ordinary wells in the vicinity, 30 and 40 feet deep, is 62 fah. The well in Charleston is 1060 feet deep, and the water rises 12 feet above the surface. The well at Corpus Christi, Texas, has reached a depth of 380 feet, and sends forth a handsome volume of white sulphur water. The well at St. Louis, Mo., has reached a depth of 1590 feet, and a copious stream of sulphur water flows from the well, having precisely the same taste of Blue Lick water in Kentucky. It is calculated from recent indications, that a supply of good pure water will be obtained, as the strata in which they are now boring, is of soft white sand stone.

The Artesian well in Westphalia, Germany, is 2385 feet deep, and discharges 10,000 gallons per minute; the temperature of the water is 93 fah. Boston, Mass., originally derived its supply from wells; there were 2767 wells for public use, 33 of which were Artesian wells.

There is an Artesian well in Erie, Green county, Ala., 470 feet deep, which discharges 320 gallons per minute; the water rises 50 feet above the surface of the ground.

OHIO DRESSED MEATS IN NEW YORK IN AUGUST.—We dined yesterday upon as fine a quarter of lamb as we have ever tasted, which was butchered in Columbus, Ohio, and brought here in a refrigerator can, by railroad, and we expect to dine to-morrow upon a pair of fine fowls, as sweet as though dressed to-day, which came in the same way. If any of our readers desire to satisfy themselves that our meats may be all butchered in Ohio and sent to us in perfect order, they can do so by calling upon D. TILTON, No. 8 Washington Market, who furnished us with the above specimens. We are glad to chronicle this event, though not a very new one, as large quantities of game have been sent here from the West in the same way, because it proves how easy the thing can be done, and how much better it would be to have our meats brought ready dressed from the country, thus saving the abominable nuisances of bull-fights and cow-chases in the streets, and gutters of gore among the dwellings of women and children. Success to the enterprize. If those who are engaged in the enterprize will give us the reports we will publish every arrival.—*New York Tribune, August 31.*

Cars constructed on the refrigerating principle for conveying fresh meats to distant markets from the interior, and oysters from the seaboard to refresh “the rural districts,” are becoming very common. Rochester is four hundred miles from salt water, yet its market has been well supplied with fresh oysters during all the past hot summer; and we have never known fresh lake fish brought from Canada so hard, fat, and delicious, as Mr. JOHN MILER, of this city, keeps them in ice. The most delicate fruits are preserved fresh any length of time. The principle is capable of indefinite extension, and must work a perfect revolution in the supply of many necessaries and luxuries, and greatly promote their general consumption.

ON THE COMPARATIVE VALUE OF LARGE AND SMALL ROOTS.—In consequence of the practical importance which was attached to some of the results obtained during the investigation into the composition of the sugar beet, carried on in the Museum of Irish Industry, and which were published in the form of a parliamentary report, and especially to that of the relative value of large and small roots, which was so strongly dwelt upon by Mr. SPOULE, in his paper read before the Royal Agricultural Society, it was thought advisable to continue the investigation of last year. As the examination was carried on as a part of our official duties, we could not make any use of them, prior to their authorized publication, but for the kindness of the director (Sir ROBERT KANE), who permitted us to lay a short abstract of the principal results obtained before the society.

A great number of analyses of the usually cultivated roots have been from time to time published; but in consequence of certain necessary conditions not having been attended to, the results have been of little practical importance. Now, one of the first conditions is that of weight, which, as we shall now endeavor to show, exerts a very remarkable influence upon the composition of bulbous roots.

On the continent, where the roots are grown for the purpose of manufacturing sugar, it was long since remarked, that large-sized roots yielded less sugar than moderate-sized ones, between one and

three pounds in weight. Analytically this was fully shown by the researches of the continental chemists, who had examined the subject, and was fully confirmed by our results of last year. Further than this, no practical application seems to have been made of the fact; and as very large roots, grown in a rich and properly tilled soil, may be better than moderate-sized ones, grown in another place, no general law as to growth was surmised. In most previous investigations upon the composition of roots, the examination was confined to a single root from each locality; and hence it is owing to this cause that no satisfactory results were obtained.

To remedy this defect, we determined to take six roots from each locality—three of the largest and three of the smallest; and in order to diminish the influence of accidental causes, we subjected a great number of roots to examination. Our results are, in fact, founded upon the examination of about 450 roots, of every kind, including Swedish turnips, carrots, the different varieties of the beet, &c.

With very few exceptions, we have found that, as a general rule, small roots contain a larger per centage of solid matter than large roots, in some cases even to the extent of fifty per cent. Thus, the mean per centage of solid matter contained in three roots of sugar beet, varying from 3 lbs. 11½ oz. to 4 lbs. 2 oz., grown by Mr. NIVEN, of Drumcondra, was found to be only 10.408, whilst in three small roots, varying from 1 lb. 3¼ oz. to 1 lb. 11¾ oz., it was 17.427; or, in other words, 100 tons of the small roots would be equal to 167.43 tons of the large. To take another example:—Three roots of long red mangel wurzel, grown by Mr. KELLY, of Portrane, varying from 6 lbs. 14½ oz. to 9 lbs. 3 oz., contained only 10.986 per cent. of solid, whilst three small roots, varying from 6¼ oz. to 7¾ oz., contained 15.624 per cent.—that is, 100 tons of the small contained as much solid matter as 142.18 tons of the large. The rule applies equally to Swedish turnips. Thus, three turnips, grown by Mr. BOYLE, at the work-house farm of Ballymoney, county of Antrim, varying from 6 lbs. 5½ oz. to 6 lbs. 12 oz., yielded 13.731 per cent. of solid matter, and three small roots, varying from 1 lb. 2 oz. to 1 lb. 5½ oz., 16.254 per cent.; or, in other words, 100 tons of the small would be equal to 118.37 tons of the large.

Owing to the influence of accidental causes—such as the comparative ripeness of the grains of seed, the influence of manure, &c.—it could not be expected that, in every case, a small difference in weight would be accompanied by a corresponding difference in the amount of solid matter; and accordingly we find that, in many cases, a root of 4 lbs may contain as much, and even more, solid matter than a root of 3 lbs. Nevertheless, such examples are rare, as will be found by reference to the tables of the detailed report about to be published. But, if we divide the roots grown upon a field into several groups, showing large differences of weight, the rule becomes universal. Thus, in seventeen roots of sugar beet, grown by Lord TALBOT DE MALAHIDE, upon the Island of Lambay, there were—

Four roots of from 6 to 8 lbs. in weight, which yielded as a mean per cent of solid matter,	12.541
Five roots, between 3 and 5 lbs.,	14.197
Eight roots, under 3 lbs.,	15.753

These results clearly indicate that with increase of weight the solidity of roots diminishes.

On tabulating our results we have found that, taken as a whole, small roots, no matter how or where grown, are superior to large roots in the amount of solid matter. The following table contains a summary of our mean results, as far as we have been able as yet to reduce them:—

SIZE OF ROOTS.	White Silesian or Sugar Beet.	Long Red Mangel Wurzel.	Orange Globe Mangel.	Red Globe Mangel.	Sweete Tur- nips.	Red Carrots.	White Belgian Carrots.
<i>Average of Roots.</i>							
Above 7 lbs.,	10.204	10.017	10.785	8.704	10.755		
" 5 lbs.,	11.653	11.476	11.028	10.115	11.357		
From 3 to 5 lbs.,	15.708	14.934	13.974	12.050	12.810		
Average of all roots,	11.532	13.635	12.645	11.138	12.031	13.870	12.990

This table presents some curious results, besides showing the decreasing value of the roots as the size increases. Thus, for instance, as far as these results go, the sugar beet contains the largest amount of solid matter of any of the root crops now cultivated; and red and white carrots, though usually sold for £2 or £2 10s. per ton, are very little superior to ordinary Swedes, and much inferior to the varieties of beet. Of course, we do not pretend that the value of roots can be determined by the per centage of solid matter alone, as its composition must be taken into account. But, in the same variety of plant, it will give an approximation to the truth—indeed, practically speaking, a very close one; in different species, or different families of plants, it is absolutely necessary to take the composition as well as the quantity of solid matter into consideration. In the case of carrots, however, an examination of the solid matter does not show that they are superior to that of the beet.

In the few exceptions to the general rule which we have observed, the large and small have had nearly the same composition, and no case has occurred where the small roots exhibited a decided

inferiority to the large. In general, we are able to account for the cause of these exceptions. In one case it arose from the seed being mixed; consequently each root examined belonged to, more or less developed, distinct varieties. As a general rule, we have found that those roots of a particular variety of the beet which had white flesh, were superior to those exhibiting a colored flesh. In one case, this was remarkably shown, as the largest root which had this character was far superior to the smallest, which was remarkable for the amount of coloring matter which it contained. Another cause of exception was, that the roots which grew out of the soil, and whose upper segment was colored more or less green, contained less solid matter than those which had grown fully under the soil. This result is in perfect accordance with the fact that the segment of the root immediately below the crown contains less solid matter than the body of the root; and hence, if a large part of the root grows out of the soil, the portion thus exposed will partake of the character of that segment.

This last observation would seem to recommend the hoeing up of the soil close to the crown—a practice which, however, appears to be opposed to that of practical farmers. It is singular that not a single exception occurred in the Swedish turnips.

These results lead to the conclusion that nearly all the analyses of roots hitherto made, especially with reference to the action of manures upon gross weight and composition, are valueless. The same remark applies to all experiments made upon the relative feeding qualities of certain crops. We make this sweeping assertion with considerable diffidence, although we feel certain that, on a little consideration, it will be found to be just. Suppose, for instance, that roots grown with one manure are to be compared with the same kind of roots grown with another manure; it is quite clear that if the roots of one set examined be larger than those of the other, the manure with which the small roots were grown will be pronounced to be the better adapted of the two for the growth of that particular root crop. Now, the size of the roots depends, among other circumstances, upon the intervals between the plants; and hence, in all such comparisons, the manure applied to land upon which the close-planting system prevails, will have the advantage over that applied to land cultivated under the other system. Need we wonder, therefore, that practical agriculture has hitherto derived so little benefit from such an analysis?

It is needless to point out the influence which the facts which we have established must have upon the system of giving prizes for large roots, on the one hand, or of growing them on the other. It is evident that the object of the farmer ought to be, to grow the largest possible amount of food from a given space of ground, quite irrespective of the size of the roots; and if science leads to the conclusion that that end will be best attained by the cultivation of moderate-sized roots, the present system, which favors the growth of large roots, must be modified. It is for the practical agriculturist to show how this is to be attained; but we are of opinion that a good many useful hints might be gleaned from the practice followed on the continent, with reference to the sugar beet. — *William K. Sullivan, Chemist to the Museum of Irish Industry; and Alphonse Gages, Assistant Chemist, in the London Farmers' Magazine.*

A PROLIFIC MEADOW.—It has become so common of late to put on record all facts tending to show the decay of the potato, I think it but fair, when anything to the contrary appears, it should be stated. Yesterday, after the refreshing showers of the morning, in company with a friend, himself a large and successful cultivator, I went to view a field of about four acres of potatoes, grown as follows: The ground on which they are growing is meadow land, with a soil of the average depth of three or four feet. The main brook of the meadow has recently been cleaned, so that the surplus water runs off, leaving it firm enough to cart upon. It is covered with a soil of richest quality, more like the prairies of the west than anything I know hereabouts.

The cultivation was commenced by spreading a coating of manure on the grassy surface, dropping the seed among the manure, cutting ditches and covering the potatoes with the material taken therefrom, leaving the ground in beds about five feet wide, and three rows of potatoes in a bed. In this way the potatoes started into growth, and now cover the ground with a most luxuriant coating of vines. A part of these, the earliest kinds, have come to maturity, and yield a fair crop of superior quality. An adjoining piece of ground was cultivated in the same way the last year, and when the crop was gathered, the vines and rubbish were thrown into the ditches, and the whole surface was leveled off, and sown with grass seed, herds grass, red top and clover, and the present season has yielded hay of good quality, to the amount of three tons to the acre, with a prospect of a second cutting of half as much more. The crop of potatoes grown the last year fully paid for all the labor applied. The first purchase of the land did not exceed twenty dollars per acre. If any one can show a grass field yielding as much, procured at an expense as moderate, I should like to see it. The proprietor has more than one hundred acres of similar meadow, that has heretofore yielded herbage of the coarsest kind; all of which he contemplates bringing into English mowing by this process. One peculiarity about this culture, *no hoeing* is needed. The few weeds that start are easily pulled up by the roots. My impression is, if the potato crop should be continued two years, the ground would be left in better condition, and be likely to remain redeemed. It will be observed that no coating of gravel or other material has been carried upon this meadow — nor does it appear to be needed. I forbear to name the proprietor, as he is abundantly capable of making his own statement, when disposed to do so.—*P., in N. E. Farmer, July 27.*

AGRICULTURAL PROGRESS IN NEW YORK.

WE place on record, for future reference and comparison, the official returns of the agricultural products, value of farms, farm implements, and machinery, of the State of New York, in counties, as taken at the United States census of 1850. These figures will be found instructive to such as study them closely. In our next we shall publish a similar statement, taken from the State census of 1845, and review both at some length. If we mistake not, the progress of New York in agriculture is not so well understood as it ought to be. By a critical investigation of the records in the several counties, many important facts will be developed.

COUNTIES.	Acres of Land in Farms.		Cash value of Farms.	Value of Farming Implements & Machinery.	Horses.	Asses & Mules.	Milch Cows.	Working Oxen.	Other Cattle.	Sheep.
	Improved.	Unimp'd.								
Albany,	228,505	68,877	\$11,339,756	3,470,878	8,587	4	12,155	2,496	7,723	37,558
Allegany,	191,969	186,320	5,540,150	361,897	7,054	33	14,926	3,099	19,682	163,219
Broome,	158,392½	131,070	5,586,307	197,608	4,232	5	12,131	3,772	11,145	30,650
Cattaraugus,	296,850	261,580	6,216,993	353,333	7,387	3	19,049	4,843	26,560	71,638
Cayuga,	208,633	99,563	15,056,322	541,770	12,503	9	18,113	3,428	19,905	122,446
Chautauque,	310,733	251,581	10,836,732	374,653	10,281	2	32,882	6,055	34,088	137,453
Chemung,	124,715½	108,557	6,352,356	251,873	4,565	4	10,016	2,275	7,552	22,597
Chemung,	332,909	169,082	9,555,847	436,606	8,757	4	30,873	5,223	22,002	88,811
Clinton,	193,578	102,504	4,256,119	19,150	5,717	4	5,846	1,475	7,594	31,725
Columbia,	197,483	62,066	15,684,468	492,516	7,901	10	13,588	3,921	10,336	163,532
Cortland,	165,447	95,212	5,405,547	351,481	5,721	20	20,220	2,610	14,052	38,660
Delaware,	352,941	291,963	8,583,654	439,623	8,231	7	34,493	6,351	22,611	65,196
Dutchess,	375,506	96,629½	25,181,302	658,895	3,561		18,023	6,629	18,129	96,330
Eric,	191,874	191,832	12,441,745	518,930	11,916	16	25,172	4,117	17,893	66,313
Essex,	166,951	136,616	3,393,355	182,446	4,365	10	6,747	2,085	8,808	59,206
Franklin,	163,293	64,146	2,298,912	159,578	3,659	12	6,974	1,945	8,576	27,436
Fulton,	117,413	47,122	3,465,299	199,085	3,717	4	7,416	1,124	5,803	13,484
Genesee,	263,871	69,798	7,956,382	433,480	19,685	7	8,908	2,157	10,857	116,829
Greene,	267,528	106,895½	10,943,072	344,550	5,844	5	11,919	2,993	11,026	22,280
Hamilton,	138,45	23,687	220,777	14,614	289	6	780	385	872	1,647
Herkimer,	245,648½	94,634	10,194,344	411,570	7,650		35,978	1,071	10,982	15,794
Herkimer,	418,549	179,739	13,986,823	679,293	15,496		45,156	3,436	29,370	60,330
Jefferson,	17,469	3,443	4,130,700	90,460	3,034	1	2,794	85	627	29
Lewis,	137,822	96,729	5,289,486	357,455	4,397	127	21,045	2,648	8,615	15,263
Livingston,	229,762½	86,938	14,018,888	260,978	9,034	2	9,083	2,526	13,297	146,846
Madison,	363,392	93,293	10,829,523	388,555	9,900	23	22,468	2,841	17,399	95,908
Monroe,	392,102½	84,294	19,617,346	782,833	13,576	4	14,291	3,230	14,938	112,297
Montgomery,	192,269½	46,868	8,680,704	367,092	7,292	1	13,766	1,399	9,363	13,379
New York,	2,428	245	4,937,000	39,131	7,773	4	2,288	83	48	11
Niagara,	178,664	102,123	6,700,836	409,995	9,510	6	8,882	2,713	11,646	59,093
Niagara,	476,669	189,572	15,939,355	527,350	14,683		47,959	4,112	24,482	70,341
Oneida,	317,280	113,291	17,055,334	804,010	13,987	12	21,203	3,150	22,008	112,990
Ontario,	274,581½	90,996	15,066,953	566,478	10,313		11,233	3,188	13,760	149,544
Orange,	315,795	107,903	17,885,393	451,823	8,262	6	38,988	12,376	13,197	58,792
Orange,	163,823	53,681	8,946,810	338,405	7,539	15	7,036	2,055	7,717	58,961
Oranget,	193,220½	170,060	8,037,526	423,515	8,750		21,112	3,512	16,368	35,870
Oranget,	378,505	171,294	12,560,142	597,863	12,240	10	29,958	3,431	24,959	103,244
Putnam,	85,591	35,344	4,829,700	141,774	1,598		6,990	1,920	4,131	4,503
Queens,	123,960	46,256	12,373,722	424,541	5,846	3	7,789	1,708	4,255	12,474
Rensselaer,	274,643½	75,293	13,566,420	539,570	8,504	97	16,174	3,265	9,944	85,578
Richmond,	19,811	4,863½	1,629,360	46,480	439	7	747	371	632	71
Rockland,	43,080	34,327	3,269,780	67,692	1,546	13	2,938	495	1,133	999
St. Lawrence,	373,986	262,627	9,212,543	657,595	13,811	139	33,365	6,555	34,441	89,910
Saratoga,	241,427	131,562	13,200,759	517,323	9,624	13	15,156	3,040	15,128	56,769
Schoharady,	76,039	38,892	3,820,430	133,433	3,225	2	5,348	801	8,859	12,295
Schoharady,	263,745	105,444	7,347,157	337,645	6,995		16,055	2,284	11,548	31,330
Seneca,	127,937	398,415	8,563,490	254,265	5,515		5,993	983	6,711	34,590
Stauben,	336,981	338,415	13,851,268	676,792	12,744	4	21,884	6,744	27,162	156,770
Suffolk,	143,712	210,292	7,195,800	211,147	5,675	214	9,292	1,770	9,944	31,440
Sullivan,	94,425	141,830	3,543,001	167,199	2,631	45	7,636	3,408	6,711	10,820
Tioga,	113,210	103,111	4,852,976	178,896	3,563		8,893	2,873	9,209	26,890
Tompkins,	229,213½	104,284	10,392,915	493,499	8,928	37	14,993	2,739	15,569	69,630
Ulster,	223,959	207,933	12,438,204	492,407	8,551	10	18,673	4,877	10,389	35,330
Warren,	95,480	126,359	1,965,312	105,282	2,721		5,292	1,682	6,554	18,400
Washington,	239,392	102,242	11,985,955	513,796	9,391		16,652	2,217	18,888	152,330
Wayne,	233,863	97,537	11,887,968	572,685	12,127	7	14,687	2,332	16,309	81,270
Westchester,	196,701	55,228	19,592,743	416,407	5,189	5	17,572	5,439	5,674	11,000
Westchester,	223,533½	126,747	8,974,808	394,640	8,725	4	15,022	3,850	18,211	133,110
Yates,	133,971	52,529	7,578,553	196,180	5,503	10	6,482	1,258	7,370	62,290
Total,	12,408,963	6,710,120	\$55,156,612	\$22,084,926	447,014	963	931,324	178,909	767,496	3,433,241

COUNTIES.	Swine.	Value of Live Stock.	Wheat, bush. of.	Rye, bushels of.	Indian Corn, bushels of.	Bushels of Oats.	Pounds of Tobacco.	Pounds of Wool.	Bushels of Peas and Beans.
Albany,.....	25,285	\$1,171,553	18,471	251,252	244,411	648,389		99,125	22,320
Allegany,.....	11,453	1,294,858	183,631	3,100	138,700	504,466		270,212	29,552
Broome,.....	8,393	852,535	60,201	39,953	159,616	409,390	20	77,296	1,810
Cattaraugus,.....	12,585	1,339,081	104,715	849	183,978	722,389		176,796	17,302
Cayuga,.....	28,769	1,861,844	468,730	29,695	704,954	735,441		367,685	5,691
Chautauque,.....	17,663	2,114,932	159,734	2,120	513,827	614,892		669,997	11,811
Chemung,.....	12,051	780,399	223,340	2,559	166,804	368,450		70,953	2,288
Chemungo,.....	16,282	1,831,980	51,479	49,280	278,113	669,866		266,026	4,084
Citron,.....	9,179	772,259	75,415	19,351	129,782	254,654		144,190	23,487
Columbia,.....	88,278	1,507,279	17,839	526,450	569,079	972,015		278,772	2,287
Cortland,.....	10,211	1,227,285	45,662	11,110	201,988	425,180		119,600	8,518
Delaware,.....	17,302	1,948,026	20,295	189,505	119,334	691,571		165,221	2,946
Dutchess,.....	49,737	2,358,608	69,760	321,102	782,605	1,076,117	65	277,404	1,774
Erie,.....	20,240	1,627,240	242,221	36,879	443,160	740,270		184,489	15,587
Essex,.....	5,796	677,718	66,510	18,463	120,425	189,954		150,258	14,602
Franklin,.....	5,222	502,589	71,883	7,218	87,100	150,850	100	81,101	9,759
Fullton,.....	8,293	596,507	9,750	45,333	130,261	285,202		45,468	15,656
Genesee,.....	18,710	1,245,481	734,051	7,566	390,424	310,282		369,957	6,996
Greene,.....	16,515	1,000,540	10,883	122,646	189,325	354,458		49,923	2,203
Hamilton,.....	316	58,870	233	748	5,434	10,210		5,486	106
Herkimer,.....	15,073	1,937,948	48,223	28,719	209,292	591,237		44,189	23,338
Jefferson,.....	27,873	2,515,100	276,137	71,370	367,731	430,363		192,168	76,244
Kings,.....	5,366	317,672	29,916	5,662	91,949	29,538		17,055	17,055
Lewis,.....	9,041	972,928	73,584	9,957	83,927	188,558	953	44,137	14,817
Livingston,.....	18,825	1,813,792	1,111,986	7,369	366,557	323,798		410,447	6,296
Madison,.....	16,527	1,701,468	113,257	26,962	339,906	585,307	7,970	194,292	20,229
Monroe,.....	31,207	1,845,236	1,441,633	8,148	707,921	449,150		365,054	8,215
Montgomery,.....	13,128	1,074,253	49,421	128,634	219,448	988,097		68,025	47,087
New York,.....	3,802	808,837	115	75	4,698	325		78	118
Niagara,.....	20,504	1,088,304	917,738	1,478	345,257	321,283		168,880	13,823
Oceida,.....	20,798	2,620,199	76,805	21,199	484,959	834,728		283,122	15,034
Onondaga,.....	31,018	2,086,658	427,535	45,095	782,220	891,331	73,731	345,880	24,051
Ontario,.....	20,147	1,529,572	929,342	7,784	520,917	421,666	100	462,955	8,404
Orange,.....	42,051	1,953,092	46,527	292,226	491,074	390,834	75	47,438	842
Orleans,.....	11,135	925,324	354,676	3	421,126	190,078		199,228	3,836
Oswego,.....	16,621	1,196,493	41,739	33,489	395,905	337,714		192,968	10,422
Otsego,.....	26,184	2,148,139	76,652	86,661	290,608	921,989		325,598	22,362
Putnam,.....	10,394	536,623	3,869	31,079	132,376	79,535		13,888	585
Queens,.....	18,160	851,576	124,497	64,951	493,705	273,760	20	25,830	15,465
Rensselaer,.....	27,739	1,524,503	11,562	238,126	469,877	762,734		256,569	8,621
Richmond,.....	1,327	81,215	15,888	5,192	46,195	22,856			13
Rockland,.....	3,010	239,309	6,439	34,216	73,028	39,844		1,876	12
St. Lawrence,.....	18,423	2,144,176	289,566	26,764	244,690	353,993	100	287,960	56,319
Saratoga,.....	28,198	1,429,972	21,907	257,916	438,443	702,338		158,736	8,533
Schenectady,.....	5,560	470,110	12,695	76,886	116,413	931,027		81,407	6,904
Schoharie,.....	17,820	1,242,071	63,241	178,565	146,831	514,807	50	95,188	32,872
Seneca,.....	11,261	737,553	527,397	3,823	269,271	315,026		123,585	1,069
Steuben,.....	23,939	2,155,090	653,484	16,093	297,717	913,948		399,543	45,202
Suffolk,.....	14,545	894,957	128,237	49,771	877,985	243,020		77,350	3,342
Sullivan,.....	6,455	656,918	1,720	92,845	94,329	110,456		28,832	510
Tioga,.....	8,111	644,367	121,891	10,873	145,171	286,061		60,044	2,656
Tompkins,.....	14,535	1,409,914	421,302	25,878	340,612	686,257		242,004	5,225
Ulster,.....	36,292	1,188,947	27,489	305,688	393,057	827,399		68,322	647
Warren,.....	5,264	418,557	7,990	22,888	95,410	76,750		82,247	940
Washington,.....	28,375	1,673,515	34,026	141,417	510,205	580,754		457,093	12,182
Wayne,.....	20,702	1,536,390	614,401	44,237	669,739	518,081		255,259	4,191
Westchester,.....	23,355	1,326,969	45,152	93,074	445,393	279,158		28,775	1,479
Wyoning,.....	15,634	1,367,322	331,639	3,700	189,192	543,977		880,472	20,477
Yates,.....	11,762	796,790	483,159	14,059	177,936	221,021		204,291	1,733
Total,.....	1,018,252	\$73,570,499	13,121,498	4,148,182	17,858,400	26,552,814	83,189	10,071,301	741,636

COUNTIES.	Bushels of Irish Potatoes.	Bushels of Sweet Potatoes.	Barley, bush. of.	Buckwheat, bushels of.	Val. of Orchard Products, in dollars.	Wine, gallons of.	Val. of Produce of Market Gardens.	Butter, lbs. of.	Cheese, lbs. of.	Hay, tons of.
Albany,.....	406,040	2,229	80,793	212,977	\$95,824	118	\$59,084	970,142	58,804	71,804
Allegany,.....	258,870	80	23,152	39,882	44,436	1,073	11,792	1,141,162	145,391	73,212
Broome,.....	190,262		1,924	63,321	5,557		100	1,197,882	42,007	52,637
Cattaraugus,.....	350,373		12,246	23,732	23,747	6	10,936	1,522,640	1,382,963	79,526
Cayuga,.....	281,692	27	303,953	46,784	60,937		4,450	1,673,315	217,413	72,590
Chautauque,.....	319,026	25	24,207	10,287	26,616	190	1,500	2,706,612	2,271,890	125,947

COUNTIES.	Bushels of Irish Potatoes.	Bushels of Sweet Potatoes.	Barley, bush. of.	Buckwheat, bushels of.	Val. of Orchard Products, in dollars.	Wine, gallons of.	Val. of Produce of Market Gardens.	Butter, lbs. of.	Cheese, lbs. of.	Hay, tons of.
Chemung.....	108,651	16	28,602	57,922	\$6,835		\$2,337	829,421	84,829	40,166
Chenango.....	281,817	20	28,668	43,473	19,081		195	3,069,421	1,069,331	124,453
Clinton.....	352,167		6,633	48,097	6,355	94	6,731	609,047	124,450	86,583
Columbia.....	409,472	25	14,653	148,241	15,970	411	9,177	1,571,984	192,803	74,475
Cortland.....	186,629		55,902	31,961	21,168	20	508	1,989,298	1,671,699	73,871
Delaware.....	373,317		3,239	147,541	24,618		1,884	3,750,585	89,935	128,964
Dutchess.....	385,941	10	6,863	82,107	15,886	47	6,339	1,760,086	105,084	97,832
Erie.....	375,161	83	70,820	26,885	45,234	121	18,950	1,544,201	4,293,249	90,984
Essex.....	307,549		565	14,372	21,586		2,237	425,199	112,961	37,863
Franklin.....	164,714	50	3,495	14,677	12,488		50	582,452	146,705	32,948
Fulton.....	189,574		24,883	18,761	17,499			1,701,618	550,040	32,146
Genesee.....	181,984		42,254	23,717	13,371	68	11,137	887,510	193,109	47,739
Greene.....	219,673	80	6,589	11,490	21,159		19,150	1,236,777	40,492	72,271
Hamilton.....	28,510		188	8,884	889		5	66,390	2,928	4,004
Herkimer.....	273,227		68,594	38,895	47,925		25	1,397,921	9,548,099	95,520
Jefferson.....	77,447		227,416	15,182	43,227	54	2,056	3,384,376	4,192,719	131,949
Kings.....	208,452		239	1,966	1,798		83,080	635		6,804
Lewis.....	257,797	10	28,443	10,117	13,116		75	1,655,245	3,067,300	67,280
Livingston.....	181,474		122,271	21,845	19,989		880	834,138	162,444	44,274
Madison.....	268,786		235,067	18,533	37,792		1,157	1,884,499	2,450,172	93,565
Monroe.....	561,425	320	106,049	26,396	67,192		667	85,262	1,257,735	286,653
Montgomery.....	189,825		123,294	123,127	30,987	223	1,461	1,005,685	1,668,700	50,063
New York.....	13,321		4,435		4,435		121,555	3,195		948
Niagara.....	162,082		76,510	20,069	32,349	15	4,736	795,296	69,270	35,724
Oneida.....	539,985	270	141,939	34,452	85,322	921	11,092	3,963,392	5,218,794	167,947
Onondaga.....	437,569		440,233	33,673	66,635	182	15,577	2,147,518	1,094,578	82,004
Ontario.....	281,681		170,399	21,513	49,382	105	7,973	1,047,782	255,284	62,178
Orange.....	146,331		1,435	90,749	15,291	908	8,797	3,769,034	620	90,598
Orleans.....	141,157	19	28,553	20,101	35,531	14	601	704,881	105,578	26,875
Oswego.....	320,166		16,769	37,620	70,605	15	2,669	2,031,574	1,340,543	60,990
Otsego.....	506,372	30	86,574	105,353	44,257	1	220	2,407,871	2,049,673	113,209
Putnam.....	99,821		84,063	14,934	14,934	83	274	788,330	7,863	25,040
Queens.....	307,551	10	3,340	58,695	63,675	186	309,357	561,239	2,697	48,027
Rensselaer.....	692,595		14,055	98,814	56,739	223	11,923	1,336,281	688,856	84,642
Richmond.....	28,871	1,411	1,180	2,052	2,880	75	14,412	81,792		5,642
Rockland.....	46,570		81,842	6,241	6,241	78	6,669	219,288		11,712
St. Lawrence.....	476,931		16,529	19,227	29,955	10	4,468	28,769,181	596,450	122,683
Saratoga.....	596,491	120	26,626	109,900	33,439	129	5,512	1,388,594	253,583	67,533
Schenectady.....	138,285		69,181	66,618	14,563	25	8,709	505,970	97,720	24,269
Schoharie.....	215,398		110,543	161,027	32,827	271	486	1,068,068	99,375	52,759
Seneca.....	79,347		81,793	18,976	26,990		232	513,694	19,765	29,763
Steuben.....	368,725	245	153,056	115,390	30,565	285	8,740	1,918,485	219,889	111,869
Suffolk.....	175,549	406	15,914	37,359	11,335	112	2,698	459,293	38,880	38,080
Sullivan.....	122,980		192	87,754	8,537	6		732,691	4,585	22,001
Tioga.....	137,344		6,063	45,414	4,966		32	565,140	67,377	39,524
Tompkins.....	182,213		81,689	109,785	23,939	100	455	1,633,789	71,389	67,391
Ulster.....	234,924	60	394	156,418	28,875	55	472	1,211,650	1,400	64,407
Warren.....	159,176			16,993	8,712	300	400	464,175	86,493	22,353
Washington.....	326,263	35	14,819	49,401	65,159	97	9,705	1,451,516	141,927	89,752
Wayne.....	27,217	39	107,453	27,436	83,451	490	5,092	1,367,867	173,390	54,084
Westchester.....	482,941	15	2,796	37,616	67,587	259	43,936	1,547,594	1,070	79,646
Wyoming.....	226,399	6	45,186	27,878	21,373	339	453	1,209,297	1,067,355	75,067
Yates.....	21,524	2	174,768	22,914	21,531	85	25	537,634	98,862	84,673
Total.....	15,305,362	5,623	3,855,059	3,183,555	\$1,761,960	9,172	\$912,047	73,766,094	49,741,418	3,728,797

COUNTIES.	Clover Seed, bushels of.	Other Grass Seeds, bush. of.	Hops, pounds of.	Hemp, water-proof, tons of.	Hemp, dew-rotted, tons of.	Flax, pounds of.	Flax Seed, bushels of.	Silk Cocoons, pounds of.	Maple Sugar, pounds of.	Molasses, gallons of.	Beeswax & Honey, lbs. of.	Value of Home-made Manufactures.	Value of Animals slaughtered.
Albany.....	603	1,453	123			7,203	758	54	13,032	490	35,851	\$22,112	\$339,076
Allegany.....	281	3,019	218			7,861	883		585,559	3,458	41,018	64,924	151,113
Broome.....	62	386	38,787			3,109	103		113,026	339	14,756	17,947	126,146
Cattaraugus.....	55	2,876	49			9,689	435		788,631	991	50,332	48,455	158,080
Cayuga.....	2,545	1,676	1,442			10,761	1,324		109,048	410	84,678	28,117	859,676
Chautauque.....	114	1,889	6,735			15,177	1,333	311	787,598	581	86,170	45,962	275,298
Chemung.....	348	981	50			1,042	29		34,128	682	31,746	11,129	126,233

COUNTIES.	Clover Seed, bushels of.	Other Grass Seeds, bush. of.	Hops, pounds of.	Hemp, water-proof, tons of.	Hemp, dew-proof, tons of.	Flax, pounds of.	Flax Seed, bushels of.	Silk Cocoons, pounds of.	Maple Sugar, pounds of.	Molasses, gallons of.	Bee-wax & Honey, lbs. of.	Value of Home-made Manu-factures.	Value of Animals slaugh-tered.
Chenango,	192	1,390	26,674			12,606	461	200	547,382	1,166	29,666	\$30,798	\$210,117
Clinton,	29	621	709			615	13		147,648	830	28,458	86,978	127,902
Columbia,	6	322	425			2,950	169	12	849	32	39,420	17,054	255,496
Cortland,	866	1,585	10,922			42,918	1,978	22	521,053	2,946	24,360	21,173	150,562
Delaware,	33,844	2,300	5,538	1		1,508	195		469,517	663	82,469	46,671	199,243
Dutchess,	59	1,200	289			7,182	312	5	1,799	20	48,572	8,183	482,029
Erie,	2,250	3,206	594			6,558	259	5	307,001	1,697	85,886	44,776	276,063
Essex,	100	197	6			285	2		60,554	6	20,639	5,496	106,422
Franklin,	55	960	50,436			1,291	87	3	252,279	1,505	7,993	18,781	81,722
Hamilton,	112	444				10,621	67	18	43,240	1,195	20,247	6,811	99,590
Genesee,	713	1,862	1,091	1		1,553	299		192,399	2,801	24,039	17,749	156,860
Greene,	2	342	13			634	55		68,946	1,929	70,331	8,525	172,133
Hamilton,		68				40	2		14,683		2,376	6,969	7,590
Herkimer,	1,735	1,504	163,408			62,246	2,750		165,361	3,440	36,566	16,417	165,596
Jefferson,	31	6,127				2,954	643		318,394	1,705	26,186	80,110	323,360
Kings,	655												31,212
Lewis,	19	2,420	11,322			31,905	1,171		436,378	1,393	17,968	15,971	100,768
Livingston,	2,083	1,174	7,018			1,786	225	3	47,556	455	26,956	14,158	191,201
Madison,	164	1,906	529,070			4,421	544	87	125,480	1,822	27,846	25,018	223,187
Montroe,	3,099	1,687	58,427			1,457	76	5	37,468	592	17,335	15,764	347,235
Montgomery,	1,965	2,630	34,555			20,034	4,030		45,196	1,095	33,660	17,841	150,374
New York,											250		1,618,753
Niagara,	3,563	1,516	20			435	317	1	13,252	145	13,635	25,234	180,145
Oneida,	166	9,924	294,944			1,684	24		177,351	2,792	31,586	37,696	498,390
Onondaga,	2,442	1,198	5,523			20,664	1,703	60	128,785	682	39,766	24,430	474,235
Ontario,	3,161	1,247	16,171			595	266		128,559	925	30,330	18,018	854,664
Orange,	113	1,027	36			996	39		1,681		35,232	8,991	372,442
Orleans,	1,476	1,165				451	153	50	34,460	1,140	12,745	13,234	140,889
Oswego,	153	1,106	8,761			5,960	324	60	197,825	1,774	35,629	50,132	288,458
Otsego,	2,846	4,431	1,132,052			22,063	1,457	5	334,996	2,990	45,472	32,271	260,181
Putnam,		672	19			100	6		1,925		10,975	2,064	118,684
Queens,	111	656	20							225	5,299	767	819,441
Rensselaer,	8	660				268,091	11,621		30,180	63	42,702	9,458	303,868
Richmond,										43,290			14,529
Rockland,	3	12	50				10				5,925	201	54,623
St. Lawrence,	70	2,736	101,855			3,045	149		1,236,504	89	23,013	82,912	234,571
Saratoga,	587	949	4,824			6,621	489		16,895	826	63,241	20,721	820,113
Schenectady,	106	633	25			32,120	1,454				11,294	1,971	78,484
Schoharie,	5,077	4,563	10,567			10,497	2,601	6	111,844	2,065	31,181	26,093	157,472
Seneca,	7,652	2,987	19			367	1,561		11,999	983	18,547	8,904	17,642
Steuben,	1,385	4,479	424			16,241	1,270	2	294,897	3,547	94,991	76,257	296,798
Suffolk,	41	1,257	109			496	20	107			3,454	5,827	232,297
Sullivan,	13	1,224	72			600	19		11,276	21	28,061	10,546	105,660
Tioga,	259	362				2,008	103		43,213	1,166	10,235	13,158	91,032
Tompkins,	2,202	1,859	18			16,578	2,355		102,099	1,298	73,003	20,942	193,315
Ulster,	248	1,115	177			14,724	1,705		51,399	1,463	55,346	21,689	324,236
Warren,	42	84	5			414	22		34,253	24	19,230	10,330	70,309
Washington,	14	959	410			230,608	9,247	55	13,781	145	52,231	9,878	814,281
Wayne,	2,791	1,443	1,033			2,665	467	194	45,947	322	29,948	31,257	263,728
Westchester,	397	446	169							50	6,828	8,555	311,482
Wyoming,	410	3,745	11,879			12,417	1,265	26	572,593	939	37,571	29,029	155,991
Yates,	1,645	566	1,650			1,209	982	306	38,637	430	24,526	6,233	100,292
Total,	33,223	96,498	2,536,290	1	3	940,577	57,963	1,774	10,357,454	56,529	1,756,190	\$1,280,333	\$18,573,988

WHEAT, RICE, AND PEA WEEVILS.

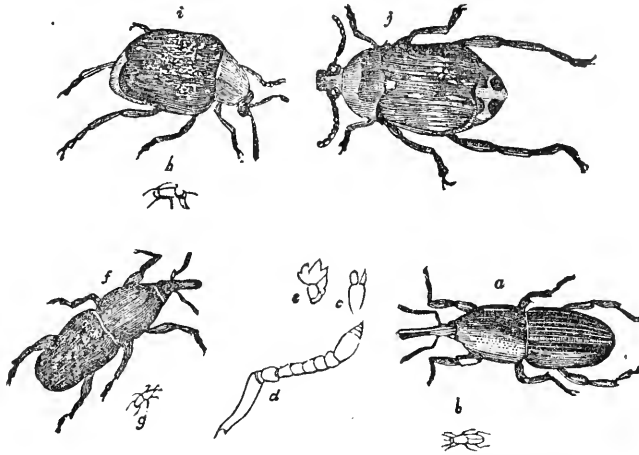
This family of insects belongs to the beetle tribe—order *Coleoptera*. Speaking of this family of destructive insects, Dr. HARRIS says: "The name weevil is given in this country to at least six different kinds of insects, two of which are moths, two are flies, and two are beetles. Moreover, since nearly four thousand species of weevils have actually been scientifically named and described, when mention is made of 'the weevil' it may well be a subject of doubt to which of these four thousand species the writer or speaker intends to refer; whereas, if the scientific name of the species in question

were made known, this doubt would at once be removed. To give each of these weevils a short, appropriate, significant, and purely English name, would be very difficult, if not impossible, and there would be great danger of over-burdening the memory with such a number of names; but by means of the ingenious and simple method of nomenclature invented by LINNÆUS, these weevils are all arranged under three hundred and fifty-five generical or surnames, requiring the addition of a small number of different words, like christian names, to indicate the various species or kinds. There is often times great convenience in the use of single collective terms for groups of animals and plants, whereby the necessity of enumerating all the individual contents or characteristics of these groups is avoided. Thus the single word *Ruminantia* stands for camels, lamas, giraffes, deer, antelopes, goats, sheep, and kine, or for all the hoofed quadrupeds which rinate or chew the cud, and have no front teeth in the upper jaw."

These remarks of Dr. H. illustrate an important principle in the study of Natural History, and are equally applicable to its every department. Weevils differ from most other coleopterous insects, and especially from ground-beetles, cockchafers, or May-beetles, flower-beetles, stag-beetles, saw-horned borers, spring-beetles, and timber beetles, in the anatomy of their feet. These beetles all have five joints in their feet, whereas weevils have but four. Weevils in the winged state are hard-shelled beetles, and are distinguished from other insects by having the fore part of the head prolonged into a broad muzzle, or a large and more slender snout, in the end of which is the mouth, which is armed with horny jaws.

The generic name of weevil is *Rhynchophorida* — literally, snout-bearers. They are usually of small size, with their antennæ knobbed at the end. The antennæ spring not from the head, but from the snout or muzzle, which is generally grooved to receive the base of these appendages. Their feelers or palpi are very small, and in most kinds are concealed within the mouth. The abdomen is often of an oval form, and wider than the thorax. The legs are short, not fitted for running or digging, and the soles of the feet are short and flattened. They like the sunshine, and are abroad in the day time. Some fly well, but others are wingless, or nearly so, and unable to fly. They walk slowly, and when alarmed turn back their antennæ under the snout, fold up their legs, and fall from the plants on which they live. They use their snouts not only in feeding, but to bore holes in which to deposit their eggs.

The young of these snout-beetles are mostly short, fleshy grubs, of a whitish color, and without legs. The covering of their heads is a hard shell, and the rings on their bodies are very convex or hunched, by both of which characters they are easily distinguished from the maggots of flies. Their jaws are strong and horny, and with them they gnaw the plants and seeds on which they subsist. It is in the grub state that weevils are most injurious to vegetation. Some of them bore into and spoil fruits, grain, and other seeds; some attack the leaves and stems of plants, causing them to swell and become cankered, while others penetrate the solid wood, arrest the course of sap, and cause the branch above the seat of attack to wither and die. Most of grubs are transformed within the vegetable substances upon which they have lived; some, however, when fully grown, go into the ground, where they are changed to pupæ, and afterwards become beetles or weevils. The weevils best known to farmers, because most injurious, are the wheat-weevils, rice-weevils, pea-weevils, plum-weevils, blight-weevils, and pine or bark-weevils. The true grain or wheat-weevil, *Calandra granaria*, or *Curculio granarius* of LINNÆUS, in its perfect state is a slender beetle of a pitchy red color, about one-eighth of an inch long, with a slender snout slightly bent downward, a coarsely punctured and very long thorax, constituting almost one-half the length of the whole body, and wing-covers that are furrowed, and do not entirely cover the tip of the abdomen. This little insect, both in the beetle and grub state, devours stored wheat and other grains, and at the south is often very destructive, but less so in the middle States, and is



DESCRIPTION OF PLATE.—*a*, *Calandra granaria*, granary weevil, magnified. *b*, The same, natural size. *c*, One of the mandibles, or jaws. *d*, The antennæ, or horn. *e*, The maxilla. *f*, *Calandra oryzae*, rice weevil, magnified. *g*, The same, natural size. *h*, *Bruchus granarius*, (another species of grain weevil,) walking in outline, natural size. *i*, The same magnified. *j*, *Bruchus pisi*, common pea weevil, magnified.

rarely seen in the northern. Its powers of increase are very great, for it is stated that a single pair may produce above six thousand descendants in one year. From the laying of the eggs to the development of the perfect insect in warm weather, only some three or four weeks intervene. The female deposits her eggs on the wheat after it is housed, and the young grubs hatched therefrom immediately burrow in the wheat, each grub occupying alone a grain, the substance of which it eats, and frequently so as to leave nothing but the hull. At the south it is the practice to sun wheat to destroy the weevil, and large bins are made for the purpose. In Europe grain is kiln-dried for the same purpose. A heat of 130° destroys the insect; and the same is true of pea-weevils.

Rice is attacked by a weevil closely resembling the wheat-weevil; it is called *Calandra oryzae*. It is distinguished from the wheat-weevil by having two large red spots on each wing-cover; it is also somewhat smaller, measuring only about one-tenth of an inch, exclusive of its snout. This insect feeds on maize and wheat as well as on rice. It is called *the black weevil* to distinguish it from the wheat insect.

The pea-weevil (*Bruchus pisi*) abounds in nearly all the States; but from some cause, perhaps coldness of the climate, it does not seem to flourish in Canada. Hence many farmers in New York, Western Pennsylvania, and Ohio, obtain their seed-peas from the Provinces, which are entirely free from the insect. All leguminous or pod-plants are attacked by this *Bruchus* family, such as beans, *Gleditsia*, *Robinia*, *Mimosa*, *Cassia*, &c. The female wounds, by an incision, the skin of the young and tender pods of plants, and lays an egg singly in each wound.

Perfect weevils come out in the spring, earlier or later, according to the climate, but always in season to propagate a new generation when peas are in blossom and forming their pods. The safest way to escape the ravages of this depredator is to keep seed-peas over one summer. If all the farmers of a county or State would do this regularly, the insect would soon cease to annoy them.

Putting camphor in tight boxes or casks, in which peas are stored that contain the young of the insect, will kill them by its offensive pungency. This is an excellent remedy for other insects, such as moths, which attack clothes in chests and drawers.

FARMERS AND MANUFACTURERS.—I wish to introduce a subject which I think of vast importance to the farming interest, hoping that it will be taken up and discussed by abler pens.

We are a nation of farmers, and it is preposterous to suppose that we can consume every thing within ourselves that we raise. Europe, as a general thing, supplies its own inhabitants with bread-stuffs and other edibles, and clothing. We must therefore depend mainly upon a home market for the sale of our surplus products; and in order to increase and maintain this home market, the mechanical and manufacturing interests should be encouraged. The hands which are employed in these pursuits, are so many taken from agriculture, and as they and their families must be fed and clothed, it gives a better chance to those who remain. Where we have the raw materials in abundance at our disposal, it would seem to be the better policy to manufacture it ourselves than to import it from other countries. Take for instance the article of iron: our country abounds with ore, fossil, coal, and forests for the manufacture of charecoal, which might be used extensively in fusing and smelting, and our hardy and enterprising countrymen would make the best of bloomers, &c. If all the iron that is used in this country was manufactured here instead of importing such immense quantities from abroad, it would furnish employment for many of our citizens and foreigners who are flooding this country, besides saving millions of money at home for circulation among us. There has been an improvement in the price of iron since last year; nails have risen one cent per pound. This advance I have cheerfully paid, in hopes of seeing this branch of home industry sustained. I might mention the manufacture of other articles which would be advantageous to the country, but I do not wish to tax your columns too heavily at this time.

There is, however, one branch of manufactures carried to considerable extent which might well be dispensed with—that is, the manufacture of whisky*—an article which is worse than useless, except for medical and mechanical purposes. But it is not my purpose at this time to make out a temperance lecture. My object is to show its bearing upon the farming interest. In this I am aware that I shall come in collision with the opinion of many eminent men; but let us impartially examine the subject for a few moments, that the public may be able to judge whether I am right or wrong. Here is an indispensable article of food for both man and beast, which an Allwise Providence has mercifully bestowed upon us for our comfort and support, converted into an article of which, to say the least, is useless. The strongest argument made use of by the advocates of distilling is, that it creates a market for our coarse grain; and the question is often asked, What should we do with that article, were it not for the stills? I would answer, feed it to your young stock, and fatten your pork, beef, and mutton. In this way your grain is worth at least twenty-five per cent more than to sell it at the ordinary prices, as all the manure will be left on the farm. Some farmers are so penurious that they will scrimp and pinch their stock for the purpose of having something to sell. The result is, their *crow rates* amount to more than they get for their grain or hay—that is, many of their animals die by actual starvation and neglect; and what do survive become so poor that it takes them half the summer to recover what they lose by bad wintering. Thus their fields are disgraced by a diminutive race of animals, besides being a serious drawback on the profits of the farm.

Young animals should be kept growing until they reach maturity. If they are suffered to get poor and stop growing they will retrograde, and never attain a full size; and without grain, or something better than hay, it is next to impossible to keep them in that condition, especially the first winter. It is a well-known fact that still-slop pork is soft and oily, and does not possess the intrinsic value of that which is fattened by the farmer on more substantial feed. The former governs the market, and what little is made by the farmer has to come in competition with it, and come down to the same level.

The last, but not the least objection, is the great waste of manure. Our agricultural journals very justly urge upon us the necessity of more economy in making and applying manure. They tell us, to a mathematical demonstration, the exact number of pounds and ounces of grain-forming elements which are extracted from the soil in the production of a given quantity of wheat, which is carried off to our seaboard cities and elsewhere, never to return. I do not know but this is all correct, as I am not a chemist; but there is one thing I do know, and that is, there are thousands of tons of the best kind of manure annually washed down our mill streams from the different dis-

* I was once a member of a grand jury who found a bill of indictment against an ex-member of the Assembly, for keeping a public nuisance (a still and hog pen) in the upper part of a village, whose filth floated down through said village. This was as it should be. Every still should be considered a public nuisance, and if they were all struck out of existence the country would be better off.

tilleries in this State, poisoning and polluting the waters below, and are a dead loss to the country. Of this no mention has ever been made, to my knowledge, in any of our agricultural papers. "J. H.," in his several articles under the head of "The Farm as a Manufactory," does not even glance at the subject. The farm should be a manufactory of pork, beef, mutton, butter, cheese, &c., and then the manufacture of manure would follow, as a matter of course. JASON SMITH.—*Tyre, N. Y.*

IN ordering your paper, I might add something in respect to climate, soil, productions, &c., but suppose it would be superfluous, as I see you already have correspondents in this far-off region. At some future time you may receive a short account of the crops and weather; but whatever I may write will be plain matter of fact, that comes under my own observation.

In describing the state of things in Oregon, all the drawbacks should be stated, as well as what a crop can be sold for. I will mention what I conceive to be a few facts. The seasons are very variable—the weather not very. To commence farming (successfully) requires as much capital as to buy an ordinary farm (improved) in the States. For instance: a good horse or ox team would cost from \$500 to \$800; good breaking plow, \$60; common two-horse plow, \$30; and so of other implements in proportion.

Much suffering existed among the last year's large emigration; and a very large proportion of their cattle died during the snow, which was eighteen inches deep, and remained on the ground three weeks. Markets are very fluctuating, last winter flour was \$21 per cwt.—now it is \$8 and \$9. Wheat is the best crop raised, producing on best land about twenty bushels per acre. Potatoes, on common dry land, unless well manured, can not be raised to pay; on moist, rich land, with good cultivation, they do well. The common blues yield best. The northern fruits do well as far as tried, excepting peaches. This latter is badly affected by the curl in the leaf. The few bearing Apple trees in the country promise an abundant crop. Oregon can never support as dense a population as the States. Corn can not be raised to pay. Fruit trees follow the example of the Fir timber in their luxuriant growth—growing faster, and bearing sooner, than in most of the States. Fowls, at \$1 each, will not pay to raise at the present prices of grain. W. B. DAYTON.—*Oregon City.*

We thank Mr. DAYTON for his letter; and while we have other valued correspondents in Oregon, we shall be at all times happy to hear from him on subjects suitable for our paper.

HAPPENING to take up a June number of the *Genesee Farmer*, I was so well pleased with the independent and healthful remarks, editorial, in regard to the management of pastures, and also the management of "two-penny lawyers," who have inflicted such vast injury by being legislators, par excellence, upon all subjects, that I wish to take your paper, although I now take several other agricultural works. When will the farmers of the United States awaken to the true dignity of their station; the importance of their calling? When will they assert the supremacy of their strength, and direct it to the supplying of their wants by legislation, as well as in agriculture? Throw off the yoke which binds you to believe, or rather to acquiesce, in the idea that a "two-penny lawyer" is the only man capable of delivering your annual addresses before State Agricultural Societies, over the United States. Are you always to be dependent upon the dealer in quirks, quidities, and certioraris, for your annual addresses? As well hire some celebrated hatter, or shoemaker, to enlighten you in your profession. It is a virtual confession that you are sadly ignorant of either your profession or your dignity of station, to permit such a course any longer. Let 1853 mark a new era, and let no clap-trap lawyer, or other professional gentleman, be forced upon you, with his address drawn up with "soft-solder," for political popularity and hope of office. Rise! control your own business, appoint practical farmers to deliver your annual addresses, and to fill your halls of legislation. If they are incapable, the sooner it is made to appear the better. From all the taxes you pay, how much is appropriated to the study of the qualities of the soil, from which these taxes are drawn? Sleepers, awake! the Philistines are upon you. GEO. W. TIFFANY.—*Milwaukee, Wis.*

FOR CURING WOUNDS IN SHEEP.—Take the leaves of the Elder tree, and make a strong decoction, and wash the parts injured from one to three times a day, and you will not be troubled with flies or worms on the wound. It also removes fever from the wound, and is healing. ALEX. TITUS.—*Yorktown.*

Horticultural Department.

CONDUCTED BY P. BARRY.

HARDINESS OF TREES.

HARDINESS in trees is a quality universally sought for ; whatever other excellence they possess, this seems indispensable. But this quality of hardiness is almost exclusively looked for as a *natural* characteristic of particular varieties, and not as the result of certain influences exerted by soil, climate, and modes of culture. Planters will write to their nurseryman to send them "nothing but hardy varieties," but they seldom go so far as to say, send me hardy *trees*—such as have robust constitutions, capable of enduring the fatigues of removal, transportation, change of soil and climate, as well as all the other trying circumstances which transplanted trees are heir to. Our purpose at present is, to call the attention of tree-planters and nurserymen to this very important matter.

What is it, in the first place, that makes a tree hardy ? Our experience tells us it is firm, well ripened wood, with abundance of healthy roots. These are the two main points of excellence in a young tree, to which, of course, we would add a good shape and reasonable size for its age. Now, how are we to get firm, well ripened wood ? Is it by growing trees as we would mushrooms ? Certainly not. By applying large quantities of stimulating manure we may grow young trees into wonderful dimensions, and very beautiful to the eye ; but will men who buy trees for their own planting look no further than this ? Very few do, we know. As a general thing, the larger a tree is for its age, the better it pleases the purchaser—no matter how it has been grown ; and this is leading us rapidly into a most pernicious system of nursery-culture. When nurserymen find that by forcing their trees into a rank growth they can secure a ready sale and higher prices, they certainly will do it, and the planter may take the trees on his own risk. This is all wrong ; and until planters cease to regard size as the prime requisite, we need not expect to get rid of the common complaint that "so many of my trees have died."

The nursery is the place to give trees a sound, robust constitution : this is certain ; and we beg every man who values hardiness in trees to note it well. It does not require a knowledge of vegetable physiology, but the exercise of plain common sense to understand this. In rearing animals for actual and profitable service, we do not nurse and feed them as though they were merely intended to take the prize at an exhibition. We rather feed them moderately, and give them such exercise and training as are calculated to produce a vigorous muscular development. So with trees. They should not be grown merely to please the eye—the planter should look to the future ; and all planters of experience do. We are by no means in favor of starving trees ; we regard a stunted tree as worthless. What we want is a moderate, natural growth, such as will mature fully and perfectly before the close of the growing season. This is always indicated by healthy foliage, short-jointed wood, and plump, well formed buds. The bark, too, as the growth proceeds, assumes a tint of maturity. The rank, forced trees, are readily distinguished by their young shoots being almost transparent ; the buds flat and small, and far apart ; the leaves thin and delicate in their texture, and the bark soft and succulent as that of the tender annual plant. In comparing cross sections of the wood as seen through a magnifier, the moderately grown tree will exhibit a compact mass of woody fiber, while the forced, over-luxuriant tree will present a mass of shaggy, cellular tissue, with scarcely enough woody fiber among it to keep it erect, and the pith in the

latter will be three times as large in proportion as the former. When the spongy trees are removed from the sheltered position they occupy in the nursery rows, they are unable to resist the action of the elements. The roots are like the stem and branches—soft and spongy, with large, resistless sap-vessels that shrink and shrivel and perish under circumstances that would not affect the firm, compact, and well ripened tree.

Planters owe it to themselves to encourage a sound, honest system of cultivation by giving preference to hardy, well-grown trees, instead of *large* ones, and thus offering a premium to a spurious hot-bed system, ruinous to the planting interest. Trees for successful planting should be grown on a dry soil of moderate fertility—not too closely together, well exposed to the sun and air in all stages of their growth, and the soil should be kept clean and pliable about the roots to admit of their vigorous and healthy growth, and of their easy and safe removal.

OCTOBER is one of the most active months in the year with the gardener, orchardist, and nurseryman. A multitude of labors demand simultaneous attention, and it requires the most untiring energy and industry on the part of every one who has any considerable charge on his hands to see that every thing be done at the proper time and in the proper manner. Fortunately, in this country, our October weather is delightful—dry, cool, and bright, generally, and therefore eminently favorable for the rapid and proper execution of all out-door work.

Transplanting of all hardy trees, shrubs, and plants usually begins here in the north about the first of October; and, as we go further south, it must be deferred later. We are greatly in favor of early planting, when it is practicable; it is by no means necessary to wait until the leaves have fallen. If growth has fairly ceased, and the wood has become firm, trees may be removed; the leaves must be taken off to prevent shriveling, and the roots must be carefully guarded against exposure until they be again placed in the ground. Autumn planted trees should by all means be secured against the winds, either by staking or banking up; and they should be well mulched besides. From this time until the final freezing up of the ground, the laying out and improvement of new places should be carried forward vigorously, as the weather and the condition of the ground are both more favorable than during summer or spring.

Neglected orchards should now be renovated by manuring and plowing, or spading about the roots. This should never be deferred till spring, because during the winter and spring the sod decays, and the manure dissolves, and abundant food is thus prepared for the trees next season.

The *gathering and storing of fruit* must be carefully attended to by all who place a proper estimate on the products of their orchards and fruit gardens. We have given elsewhere an article that furnishes many useful hints on this subject; it is worthy of an attentive perusal.

Kitchen and garden crops for winter and spring use require nice management to keep them in a proper condition. Such as are taken up and placed in the root-cellar should be handled when dry, and the cellar should be clean and sweet, and perfectly free from moisture both above and below; it should also be kept cool as possible, but not admit frost.

Such of the bedding-plants as *Salvias*, *Scarlet Geraniums*, *Fuchsias*, *Heliotropes*, *Cupheas*, *Bonvardias*, *Plumbagos*, *Abutilons*, &c., as it is desired to save for another season, should be carefully lifted early, and either potted or planted closely in boxes, and placed in a cool green-house, or in some place where they will have light and not freeze. A corner of a dry cellar beside a window will answer in case of necessity, but decaying leaves must be frequently removed. Many of these plants, and some others we have not mentioned, such the *Habrothamas*, if taken up carefully in good season, may add materially to the beauty of the green-house through November. Many of the late flowering annuals are useful, too, in this way. *Chrysanthemums* from now till Christmas will be among the chief ornaments

of the green-house; they require plenty of light—all that can be given them; plenty of water, and an occasional dose of liquid manure.

A great error in the management of most green-houses is, crowding the plants too closely, so that they grow up tall and lean, losing all their lower branches and leaves. Far better to throw away all surplus stock, and give ample room to what is reserved. One good healthy, well-grown plant is really worth *twenty* poor ones that every one feels ashamed of. All houses, and frames, and pits should be well ventilated in fair weather, and decaying wood or leaves removed promptly. Hardy *bulbous roots* should be planted immediately; yet it can be done any time before the ground freezes. There are certain things that vegetate early in spring, and should therefore always, if possible, be planted in the fall—such as gooseberries, currants, rhubarb, and all hardy spring-flowering shrubs, and hardy herbaceous plants. A good bloom next spring may be secured by planting now, but will be lost if the planting be deferred till spring.

THE FRUIT CROP IN WESTERN NEW YORK.—Apples, generally, are neither so abundant nor so fine as usual; a single orchard, or a few trees, here and there, are exceptions. The crop of pears is much below that of last year. Peaches have surprised people by their abundance and fine quality. We have been through New Jersey, Delaware, Maryland, &c., in the midst of the peach season, and saw no finer fruit than has been sold here in large quantities since the 10th of September. The worst feature in our peach business is, that it opens late. *Early York* did not appear in market till the first week in September, and now (Sept. 13) *Crawford's Early*, *Large Early York*, and others of the same season, are coming in freely. *Morris' Whites* and *Old Mixons* will not be ripe for a week or ten days, and *Crawford's Late Melocoton* and *Red Check Melocoton*, will not be ripe short of two weeks. It is interesting to observe that some orchards in which there was a full crop last year, are entirely fruitless this, and others that bore none last, are laden this season. Within a few miles we see some orchards bearing well, and others a total failure. Our heaviest crops are in warm, sheltered situations, within a short distance of the shores of Lake Ontario.

A HANDSOME PEACH ORCHARD.—JAMES M. WHITNEY, Esq., of Rochester, has a peach orchard of upward of one thousand trees about half way between this city and Lake Ontario, which we visited on the 13th September. The trees generally are in a vigorous and healthy condition, and the crop very heavy. This orchard occupies a warm, sheltered situation, and seems to have escaped the severe weather last spring, so ruinous to the peach generally in this section. Among those particularly fine we noted *Large Early York*, *Crawford's Early Melocoton*, *Yellow Alberge*, *Jacques' Rare Ripe*, *Morris' White*, *Old Mixon Free*, and *Crawford's Late Melocoton*. *Early Tillotson* is an utter failure—thirty or forty trees stand without a single fruit and *nearly dead*, in the midst of luxuriant and heavily laden trees of other varieties. The *Red Check Melocoton* does not succeed well here. Mr. WHITNEY has also a fine young peach orchard of some seven hundred trees just beginning to bear.

TRANSPORTATION OF TREES.—The transportation of trees from one place to another has now grown into importance, and the rush of other freight on the railroads in the autumn and spring renders it almost impossible to have them forwarded without serious delay. There is a universal complaint about this matter, and we would once more suggest the propriety of founding a *nurserymen's express*, or making an arrangement with the existing companies to send special messengers with trees along all the leading thoroughfares, leaving the principal points where this trade is extensively carried on two or three times a week. We think that railroad companies should issue orders to their agents at all the stations to give preference to trees in all cases where there was more freight than could be sent at once. If this were done, there would be no difficulty; but as it is now, trees fare worse than any other goods whatever.

CURLED LEAF IN THE PEACH.—YOUR August number has been placed in my hands by my neighbor, Mr. MERRIAM, who is an intelligent horticulturist, and we have compared notes on the subject of "curled leaf in the peach." We agree with you in your belief that this disease arises, mainly, "in sudden changes, from genial spring weather to cold and rainy, with slight frosts, which arrests the development of the young shoots and leaves, by which the sap becomes stagnant and diseased." You ask, "Has any one seen it in warm weather—say in June or July?" In reply I would state, that the last month—about the middle, I believe—we had a cold north-west wind, and just escaped a frost: the result on an *Early York* of Mr. MERRIAM's was, that the leaves curled up, and generally all dropped, so as to almost cover the ground. This led Mr. MERRIAM to observe that several of his other innaculated Peach trees were affected. My experience for eight years with the peach, in this latitude, 43 deg. 30 min., and within four miles of lake Ontario, is, that we do not succeed with more than one year in three with this fruit in the grafted varieties, while the natural is hardy, and bears almost every year. I agree with you that the *Millettia*, *Craighead's Early*, *Caldwell's Favorite*, are more hardy and have suffered less from the curled leaf than other grafted varieties. They suffer less when near the house, and sheltered from the north-west winds. My most vigorous trees, and on the richest soil, have suffered the most: the last three years they have hardly produced a peach. I expect we shall have to depend on our natural and more hardy peach trees.

We have a great promise of grapes this year: crop of strawberries light: gooseberries and raspberries abundant: apples and pears promise well. There is more attention given in this county to apples and pears than formerly. The demand for the New York market—almost in any producible quantity—with the facilities of railways for its conveyance, is making it profitable to the farmer to set out orchards in this genial region to both these fruits. The pear succeeds remarkably well. J. A. B.—*Mexico, Oswego county, N. Y.*

OSKALOOSA, IOWA.—This is a beautiful country, and the amount of improvement, when we consider the age of the country, is truly astonishing. Here stands a flourishing city, containing some twelve or fifteen hundred inhabitants, where ten years ago not one human habitation could be seen. The Indians gave possession of this country in 1848. Now you may stand upon the top of a large brick house in Oskaloosa, and see at one view thousands of acres of the richest land, all enclosed with good fences, rolling in gentle undulations as far as the eye can reach, and covered, principally, with dark green corn, here and there interspersed with small patches (as appearing in the distance, though many of these patches contain forty or fifty acres,) of golden stubble, from which are being taken wheat, oats, and hay, which may be seen rising up into groups of stacks, presenting their yellow tops above the green corn in all directions. Dozens of neat and newly painted farm houses may also be seen scattered over the prairie.

A number of young apple orchards are just beginning to bear in this vicinity, and I saw, a few days ago, some beautiful specimens of the *Pound Royal*, *Belflower*, *Warren*, or *Hill's Cord*, *Pippin*, *Ravles' Janette*, *Wells' Gate*, &c., all large and smooth, without spot or blemish; and finer *Isabellas* and *Cataubas* I have never seen, than are hanging on the vines in several of the gardens in this place. We have a flourishing agricultural society in this county, which holds its next fair at this place on the 15th of October. "What" you are ready to exclaim, "all this in the 'back woods,' one hundred miles west of the Mississippi river?" Not a bit of "back woods" about it, sir: for you will see more taste, intelligence, and refinement here than you will find in many places in the older States, where the country has been settled fifty years. Don't say "back woods" to us—we are *beyond* the "back woods."

R. SEEVERS.

Editor's Table.

THE GENESEE FARMER FOR 1854.—The proprietor of the *Genesee Farmer*, encouraged by the liberal support long extended to this journal by its friends and patrons, announces that the FIFTEENTH VOLUME of the present series, to commence in January, 1854, will contain a quarter more reading matter than any of its predecessors, and be otherwise much improved, without any increase in price.

Since the undersigned began his labors to foster a taste for agricultural reading in the United States, at least fifty journals devoted to rural affairs have been started to meet the demand for such information as they might be able to supply. Instead of harboring unkind feelings toward these numerous competitors, we have rejoiced at their success, knowing that there must be room for fifty more agricultural papers long before one farmer in ten will be a *reading* as well as a *working* cultivator of the soil. To increase the usefulness by extending the circulation of the *Genesee Farmer*, the undersigned will pay the following premiums on subscriptions to his next volume:

Fifty dollars to the person who shall procure the largest number of subscribers in any county or district in the United States or Canadas; forty dollars to the one who shall procure the second largest list of subscribers as above; thirty dollars to the one procuring the third largest list; twenty dollars to the one procuring the fourth largest list; and ten dollars to the one procuring the fifth largest list, at any time before the first of April, 1854, when the premiums will be paid in cash. Subscriptions to be received at the lowest club prices. The volume for 1854 will be printed on good paper, with new type, bought expressly for it. A gentleman, graduate of the University of Vienna, who is familiar with the languages of those nations in which the science of agriculture is most cultivated, will aid us in translating for the *Farmer* whatever can instruct or interest its readers. This gentleman is by profession a civil engineer and architect—branches of knowledge intimately connected with the progress of rural arts and sciences. The general character of our paper is thus pithily stated by the Hon. MARSHALL P. WILDER, President of the Massachusetts Board of Agriculture, and of the United States Horticultural and Agricultural Societies, in a letter now on our table, which closes as follows.

"I have always had the GENESEE FARMER. It is, without favor or affection, the best paper in the country. MARSHALL P. WILDER."

As our club price to each subscriber is only thirty-seven cents a year, no matter how many other agricultural journals one may take, to patronise the *Farmer* cannot impoverish him.

DANIEL LEE.

THE STUDY OF INSECTS.—Almost every mail brings us papers which show the lamentable want of more knowledge among farmers of the natural history of insects. A correspondent in the September number of the *Pennsylvania Farm Journal* recommends the use of lime and brine in the preparation of seed wheat, to prevent the attacks of the Hessian fly. Now, Pennsylvania returned more wheat, by about a million of bushels, at the last census than any other State in the Union, and her cultivators of this important staple ought to be well posted up in all that relates to it. With due respect for the writer (for we are all liable to err), we beg to inform him and his readers, should they see this article, that he is wrong in two important particulars. First, In keeping his wheat so long in brine as to "swell the seed considerably" before he limes it, as the salt will kill the germs of many good seeds so soon as the brine penetrates them sufficiently to make them *swell*. Secondly, Neither the eggs nor young of Hessian flies are on wheat at the time it is sown. The insect always deposits its eggs on the leaves of the plant, either in autumn or in the spring. It is a good practice to wash seed wheat in strong brine, and dry it at once in recently slaked lime, to destroy the sporules or seeds of smut, not insects. As suggested by the writer in the *Farm Journal*, salt and lime tend to produce bright, firm culms, or straw, in wheat; and for this purpose some of the best wheat-growers in Western New York sow, at the time of seeding, from three to five bushels of salt, and from five to ten of lime, per acre. On good limestone land, salt alone is used.

DOMESTIC CULTURE OF THE GRAPE.—The *Charleston Mercury* states that Mr. McDONALD, residing near Aiken (S. C.), has devoted himself to the culture of the grape with a success that promises to naturalize this branch of agriculture in the State. He has an extensive vineyard, in which may be found the best varieties of foreign and

native vines. He has made considerable quantities of wine, which amateurs have tasted and pronounced choice, and he is prepared to go ahead on the strength of past success.

As population increases, and labor becomes more abundant, wine will be made in such quantities as to be esteemed one of the staples of the Republic. It has climates admirably adapted to the growth of the vine; and it actually contains more varieties of native grapes than all the world beside. There is not a State or Territory from Maine to Oregon, and from the great lakes to the Gulf of Mexico, in which indigenous grapes do not flourish. From some of these native varieties, or their crosses, science and labor will produce fruit of inestimable value.

MAMMOTH WHEAT, AND HOW TO RAISE IT.—That there are giants as well in the vegetable as in the animal nations, may be proved by a specimen of many-headed wheat from a single seed, now on exhibition at our office. There are 114 stalks, each having a fully developed head—all the family of one grain of wheat, planted last fall. Allowing each grain to yield 35 grains (a very low average), there would be about 4000 grains. In a bushel of wheat, weighing 60 pounds, there are 408,000 grains. This is on the supposition that the wheat is of the best quality; the average is said to be 520,600 grains. At this rate, 139 such stools of wheat would yield a bushel. This monster growth was raised on Ex-Governor DEWEY'S farm, near Lancaster, and handed to us by his father, who is considered one of our first farmers. He is of the belief that too much wheat is commonly sown to the acre, and that more attention should be given to preparing the soil.—*Grand Co. Herald.*

The father of the Governor is quite right in his notion that too much seed wheat is usually sown per acre, and that more attention should be paid to the preparation of the land. If we cultivated wheat as we do corn, by plowing between the rows, killing all weeds, letting in more sunshine where the plants are luxuriant, and making the soil richer where they are small and feeble, our harvests might be brought up to an average of thirty bushels per acre. Our practice and its results, in wheat culture, are far, very far, below the possible—below, far below, the *profitable*.

NOTICES FOR CORRESPONDENTS.—We have received and shall publish in our next, several valuable letters and articles, intended for this number of the *Farmer*. Mr. A. B. COLLVER, of Winchester, Douglass county, Oregon, will please accept our thanks for his communication; and our readers in Oregon and California are respectfully requested to write often, giving an account of the progress of agriculture on the west side of the Rocky Mountains. We will give Mr. COLLVER the information he desires about reapers and seed-drills in a private letter, and publish his with comments in our November number. The letter of our friend R. M. O., of Greenfield, Sara-

togo county, will appear in our next. "The Making, Saving, and Application of Manures" is a subject of universal interest, and a branch of husbandry which is susceptible of great improvement.

A subscriber at Lakeville, desires information respecting the burning of coal for kitchen purposes, and asks: "A ton of coal is equal to how many cords of wood, without regard to porosity?" In Rochester, where wood is \$5.00 a cord, and coal 10 cents a bushel, we think coal to burn in a small furnace and heat smoothing-irons, cheaper than wood; but for washing, cooking, and warming rooms, a cord of hard wood that will weigh from 3000 to 4000 pounds *dry* is nearly equal in value to a like weight of dry coal. In converting wood into coal, a great deal of heat is generated and lost. This is an important matter in domestic economy; and we will make its philosophy perfectly plain in a future number.

Mr. H. T. WAKEFIELD'S request about the construction of ice houses will receive due attention.

The communication about protecting bees from moths, and separating chaff from wheat, is thankfully received, and marked for insertion.

The suggestions of "C. W." in reference to the new plan for burning lime, which we published in the July number, are timely and to the point. He has seen it tried, and pronounces it "a failure."

"A Michigan Farmer" has our sympathies, and his letter will appear in our next. We have set our faces against all frauds and quack nostrums in rural affairs. Wool-growing has been too much the subject of speculation and frauds in various ways. Other communications have been received, and will meet with due attention.

We have only room to say that a National Exhibition of imported and American horses will take place at Springfield, Mass., on the 19th, 20th, 21st, and 22d of October instant, under the auspices of the United States Agricultural Society. It is likely to be a grand affair, it being the first of the kind ever attempted in this country.

STATE FAIRS FOR 1853.

New Hampshire,.....	Oct.	5, 6, 7
Maryland,.....	Oct.	25, 26, 27, 28
Illinois, at Springfield,.....	Oct.	11, 12, 13, 14
Indiana, at Lafayette,.....	Oct.	12, 13, 14
Wisconsin, at Watertown,.....	Oct.	4 to 7
Virginia, at Richmond,.....	Nov.	1, 2, 3, 4
Upper Canada,.....	Oct.	5 to 7
Southern Central Agricultural Society, Augusta, Ga.,.....	Oct.	17 to 20

Inquiries and Answers.

PLEASE inform me through your paper what the color of the Short-horn Durham is, as there are a number of people in this county who have deep red cattle, and others who have entirely white cattle, and they all profess to have the pure Short-horn Durhams. A SUBSCRIBER.—*Venango County, Pa.*

Thorough-bred Short-horns are by no means so uniform in color as the Devons, or even the Herefords; and it is not impossible that there may be pure red or pure white of this celebrated stock, as there are plenty having both colors upon them.

IN the *Genesee Farmer* for July, I notice a strange and entirely new idea to me. You say that "without the contact of the anther dust that falls from the tassels of the plant upon the stigmas or ends of the silk, not a kernel of corn would grow." Now I would be very much pleased to have you give an explanation of it through the *Farmer*. J. J. SCRAGGS.—*West Point.*

We hardly know what explanation will be satisfactory to our correspondent. If he doubts the correctness of our statement, let him tie a piece of muslin over the end of an ear of corn just as its silk begins to appear, so as to prevent any anther dust from falling on the stigmas, and see how many seeds the ear will bear. The contact of the male and female organs of plants, or the union of the vital atoms peculiar to the procreative powers of each, is indispensable to the production of a new generation. If our friend will consult any school book on botany, it will inform him that the anther dust of maize is alone endowed with fertilizing energy.

WILL you be so kind as to give your readers the benefit of some remarks in relation to white clover—its alimentary, soil-exhausting, and nitrogen-collecting (or nitrogen-retaining) properties—as compared with red clover; and also of kindred remarks in regard to carrots? Remarks in regard to the value of the Yellow Locust tree as a fertilizer of grass grounds, and the manner of propagating it for this purpose, would be thankfully received.

What is the price of back volumes of the *Genesee Farmer*, bound, and the postage prepaid. H.—*Valley Farm, N. H.*

To answer the above inquiries fully would occupy much space, and demand not a little research. We can state, however, that so far as nitrogen and alimentary matters are concerned, white and red clover do not materially differ. One hundred pounds of dried white clover contains some two per cent. more ashes when burnt than a like weight of red clover; and reckoned by the ton, white clover is more exhausting to the soil, if the crops were removed.

The dry matter in one hundred pounds of carrots is half that contained in one hundred pounds of green clover; and therefore, estimated in pounds, clover is worth more than carrots. Leaving the water in both out of the account, and one hundred pounds of the roots exceed in nutritive value a like weight of the best clover hay.

Neither the Yellow Locust, nor any other grow-

ing tree or plant, while growing, can fertilize the soil for grass, or any other crop. Some trees injure the soil less than others, and Locusts perhaps as little as any. We have cut up and burnt where they grew many thousands of Yellow Locusts this season, and have some fifteen acres left, where we want to make a meadow. Where we cut wood and rail timber in permanent woods, there we shall sow Locust seed and transplant young trees.

Back volumes of the *Farmer* are from 50 to 60 cents each, according to their covers.

IN answer to the inquiry in the July number of the *Farmer* for the best method of keeping worms from hives of bees, I would recommend the destruction of the bee-moth, or miller. My plan for capturing is as follows:—Take a board of from eight to twelve feet long, and from ten to twenty inches wide; place it within a rod of the hive, one end on the ground, the other some four feet high, on the fence, or some place fixed for it to rest; then put another board on the top some two inches narrower, with room between the two for the millers to secrete themselves. It is to chance that I am indebted for the discovery, and yet it may be already known. I have caught great numbers of them the present season. It would be best to keep all rubbish, or places for the secretion of vermin, at a greater distance from the hives. I use HALL'S Self-protecting Hives, which I believe to be the best for the bees to eject any worms that may invade their premises. This, together with the destruction of the millers, gives the bees a chance, and I believe that they will improve it and obtain the victory.

I wish some apiarian would try the above plan, and give the result in the columns of the *Farmer*. Place your miller-traps on either side of your hives, if convenient. ALEX. TITUS.—*York Town.*

Mr. Titus has set an excellent example to all intelligent farmers. Let them not keep their valuable knowledge to themselves, but give it freely to their brother cultivators the world over. To hundreds of our readers, his "miller-traps" will be worth more to them than the cost of ten years' subscription for this cheap journal.

Choice Poultry for Sale.

THE SUBSCRIBER offers for sale one hundred pairs of Brahma Pootras; also, Shanghaes, Cochin Chinas, and Bolton Grays; all warranted pure. THOS. WEIGHT.
Utica, N. Y., Oct. 1, 1853.—3t.

Horse Powers,

ON the Endless-Chain principle, consisting of Emery's, Wheeler's, and White & Prentiss', the best manufacturers.

Threshers, Separators, and Winnowers, Combined Threshers and Separators.

The above are warranted to give satisfaction. For sale at the lowest cash prices, at the State Agricultural Warehouse.

LONGETT & GRIFFING,
Sept. 1, 1853.—2t. No. 25 Cliff street, New York.

SCRIBNER'S READY RECKONER,

FOR SHIP BUILDERS, BOAT BUILDERS, LUMBER MERCHANTS, FARMERS, AND MECHANICS:

Being a correct measurement of Scantling, Boards, Plank, Cubical Contents of Square and Round Timber, Stair-logs, Wood, &c., computed in a number of tables; to which are added Tables of Weights by the Month, Board or Rent by the Week or Day, and Railroad Distances. Also, Interest Tables, at seven per cent. By J. M. SCRIBNER, author of "Engineers' and Mechanics' Computation," "Engineers' Pocket Table Book," &c. &c.

SCARCELY is it possible to add to the recommendations of the above book, more than to give its title page. Every one who is engaged in buying, selling, measuring, or inspecting lumber, of any kind, will at once appreciate a work of this kind. No pains or expense has been spared in revising or enlarging this edition, to make it in every respect convenient and accurate.

The Log Table was computed by drawing DIAGRAMS for each and every log, from twelve to forty-four inches in diameter, and the width of each board taken, after taking off the wane edge. The sum total of each board constitutes the amount each log will give; and if there can be any dependence placed upon such strictly mathematical accuracy, no one will hesitate for a moment to abide the results here given, as the method adopted by the author can result in nothing less than strict honesty and mathematical accuracy, to the parties interested.

The best evidence of the usefulness and popularity of this book, is the rapid and extensive sale of over 75,000 in a few years. We do not hesitate to say that no book of its size and price contains more useful or correct tables.

In all new and lumber countries the book will be found very convenient, as it comprises much that is useful to the farmer, mechanic, and business man.

Price, 25 cents; 5 copies for \$1, post-paid.

Agents wanted to sell the above. Address
GEO. W. FISHER,
Rochester, N. Y.
October 1, 1853.—14.

M'Lane's Worm Specific.

THE following, from a customer, shows the demand which this great medicine has created wherever it has been introduced:

BLOSSBURG, Tioga Co., Pa., March 30, 1850.

Gentlemen:—In consequence of the great consumption of your "Worm Specific" in this place and vicinity, we have entirely exhausted our stock. We should feel obliged by your forwarding, via Corning, N. Y., twenty dozen, with your bill, on the reception of which we will remit you the money.

From the wonderful effects of said "Specific" in this neighborhood, there could be sold annually a large quantity, if to be had, (wholesale and retail) from some local agent. If you would compensate a person for trouble and expense of sending, I think I could make it to your advantage to do so. Yours, respectfully,

Messrs. J. KIDD & Co.,
Per W. E. PORTER.

Purchasers will please be careful to ask for Dr. M'Lane's Celebrated Vermifuge, and take none else. All other Vermifuges, in comparison are worthless. Dr. Mc-Lane's genuine Vermifuge, also his Celebrated Liver Pills, can now be had at all respectable Drug Stores in the United States and Canada.

Improved Fowls for Sale.

HAVING kept for several years the very best fowls to be procured, and having the past season added to my stock some exceedingly beautiful specimens, I have now a great number of fine young pairs, certainly as good as can be found in the country, which I will sell at a much lower price than that charged by fowl-dealers. I will sell the following varieties at five dollars per pair:

White Shanghai, Black Shanghai, Buff Shanghai, and Cochon China; and Brahma Pootra, and Speckled Shanghai (a very beautiful bird), at ten dollars per pair.

These fowls will be ready for delivery by the first of September, and I will coop them carefully, with feed, water, &c., and send by railroad or express, as desired, without charge, and warrant every fowl sent to be pure and fine. Orders are solicited.
Wm. VICK.

Rochester, N. Y., August 1, 1853.

Cuttings of the best kind of Basket Willow,

WITH directions for planting, for sale at \$5 a thousand, by
Wm. H. DENNING,
Fishkill Landing, Dutchess Co.
Oct. 1, 1853.

Farm for Sale, in Rock County, Wisconsin.

THE SUBSCRIBER offers for sale his farm, lying within seven miles of the village of Beloit, and nine of the city of Janesville, consisting of 305 acres—prairie, timber, and meadow—under a good state of improvement, a great part being seeded to timothy.

There is a large and costly stone house on said farm, from which may be had a view of the Valley of Rock River, for many miles in extent.

There is also a bearing Orchard of grafted fruit on the farm, living water, and most other conveniences belonging to older farms in the Eastern States, not excepting railroad facilities.

The limits of this advertisement preclude the possibility of a further description; it will suffice to say, that this is one of the best farms in a most delightful country.

Price, \$20 an acre, if sold before the first of December next.
JOHN L. V. THOMAS,
Beloit, Rock county, Wisconsin.

P. S.—There will be sold also to the purchaser of the farm, if desired, a stock of Horses and Cattle, Farm Implements, &c., the present owner being compelled to undertake other business.
October 1, 1853.—14*

Evergreen Trees,

OF the following kinds and sizes, we can supply to Nurserymen and others to a large amount, and at very low prices:

- Norway Spruce Fir, from 8 inches to 6 feet.
- Black Spruce Fir, from 5 inches to 6 feet.
- European Silver Fir, from 6 inches to 4 feet.
- Balsam Fir, from 1 foot to 12 feet.
- Hemlock, from 1 foot to 4 feet.
- Scotch Fir, from 6 inches to 8 feet.
- Austrian Pine, from 6 inches to 8 feet.
- White Pine, from 1 foot to 12 feet.
- American Arbor Vite, from 1 foot to 5 feet.
- Siberian Arbor Vite, from 6 inches to 4 feet.
- Red Cedar, from 1 foot to 7 feet.
- Lebanon Cedar, from 6 inches to 2 feet.

Those who wish for any of the above-named articles, can learn our exact prices by addressing us, and stating the number they wish to purchase. To large buyers we make a proper discount. Orders received early we can fulfill most perfectly, while if they are late we may not be able to do so well by them. D. S. MANLEY & BROTHER.
Buffalo, October 1, 1853.—24.

Chinese Fowls.

FOR SALE, a number of pairs of genuine Black Shanghai Chickens, strongly marked, and embracing all the fine points of Chinese fowls. No one wishing a superior breed of fowls for laying or for the table, will be disappointed by procuring this variety. Also, a few pairs of the celebrated Brahma Pootra stock.

Orders received from any part of the country will be promptly executed, and the fowls caged in such a manner that they can be transported safely for any distance.

Terms—Black Shanghai, \$5 per pair; Brahma Pootra, \$10 per pair.

Address the subscriber, at the office of this paper.
CHAS. W. SEELYE.

1000 Book Agents Wanted.

INTELLIGENT and industrious men wanted in every part of the United States, to engage in the sale of the best assortment of ILLUSTRATED POPULAR AND USEFUL BOOKS published in the country.

Men of good address, having a small capital of \$25 to \$100, can do well by engaging in this business, as the inducements offered are of the most liberal character.

For further particulars, address (postage paid)
ROBERT SEARS, Publisher,
October 1, 1853.—24
1st William St., New York.

A Chance to Make Money!

PROFITABLE AND HONORABLE EMPLOYMENT!

THE SUBSCRIBER is desirous of having an Agent in each county and town in the Union. A capital of from \$5 to \$10 only will be required, and any thing like an efficient, energetic man can make from \$3 to \$5 per day—indeed, some of the Agents now employed are realizing twice that sum. Every information will be given by addressing (postage paid)
Wm. A. KINSLER,
Box 601, Philadelphia Post Office.

October 1, 1853.—14*

BUFFALO NURSERY.

D. S. MANTLY & BROTHER, PROPRIETORS.

Situated on Main Street, two miles above the American Hotel.

WE wish to call the attention of the public to our Nursery of FRUIT AND ORNAMENTAL TREES, SHRUBS, AND PLANTS, of all that is grown in the best establishments in the country. Persons wishing to buy any of the articles named below, can do no better than to buy of us.

Standard Apples—Pears, Cherries, Plums, Peaches, of all the best varieties—fine trees, from one to five years old.

Dwarf Apples, worked on Paradise and Dornain stocks.

Dwarf Pear Trees, worked on Angers Quince stocks, of all the desirable kinds. Trees from one to three years old can be furnished by the hundred or by the thousand.

Quinces—Good strong plants, in any quantity.

Hardy Grapes—Plants of all the finest varieties, of one, two, and three years of age.

Foreign Grapes—A very good selection.

Currants, of all the new and old kinds—a very fine stock of one and two year old plants.

Raspberries, of the best kinds, and very good plants, in any quantity.

Gooseberries—A first rate assortment of varieties, and capital plants.

Strawberries—An excellent selection of the best sorts—a very general assortment.

Rhubarb, or Pie Plant—A good stock of Tobolsk, Victoria, Downing's Colossal, Giant Hybrid, Wisconsin Mammoth, &c.

Asparagus—Good one and two year old plants.

Deciduous Ornamental Trees—We have a fine stock, consisting of the best of European, American, and Asiatic kinds.

Evergreen Trees—Perhaps the most excellent and desirable stock in the country for size and shape. Trees from six inches to ten feet in height, we can furnish, of many kinds.

Ornamental Shrubs—We have a very large stock of Ornamental Shrubs, and can supply most any quantity, of any variety, and the plants are very fine indeed.

Evergreen Shrubs—Not a large but an excellent stock, consisting of such varieties as are found by experience to be desirable in this climate.

Climbing Shrubs—The utmost pains have been taken to propagate all of the varieties of Climbing Shrubs which succeed in this latitude, and now we have an excellent stock.

Roses—A stock of sufficient variety, and of surpassing merit. A stock of over a hundred of the very best kinds cultivated in Europe or America, propagated with the utmost care, and in every way worthy of attention from the most critical in Rose culture.

Dahlias—Our Dahlias—say eighty varieties—are undoubtedly as fine as can be found in this country.

Paeonies—Twenty varieties of these most desirable plants. Several varieties of the splendid CHINESE TREE PAEONIES.

Strangers to our locality are referred to Messrs. Jewett & Thomas' Directory and Map of the city of Buffalo, for the year 1853. Our residence and Nursery Grounds are exactly delineated on their map.

We furnish Catalogues to all who apply for them. From the extensive increase which we are making in our plantations, it is quite necessary that our business should be done on cash principle. All orders sent to us by mail will receive perfectly prompt attention, and when persons do not know exactly what they want they had best leave selections with us. Our packing is done in the best manner, and all goods carefully shipped as directed in orders. The strictest care is used to ensure exactness in all our business transactions.

October 1, 1853.—24.

Fruit Trees, &c.

CHARLES MOULSON offers for sale a large stock of Fruit Trees suitable for transplanting this autumn, consisting of select varieties of Apples, Pears, and Cherries, standard and dwarf; Peaches, Plums, Apricots, and Quinces.

Also, Strawberries, Raspberries, Currants, Gooseberries, and Grape Vines, in great variety.

Rhubarb and Asparagus Plants.

Also, 50,000 Seedling Apples, for stocks.

Trees will be packed suitable for transportation, when necessary.

The Nursery is situated on Union street, a few rods north of New Main street.

Rochester, October 1, 1853.

GENESEE VALLEY NURSERIES.

A. FROST & CO., Rochester, N. Y., solicit the attention of Amateurs, Orchardists, Nurserymen, and others, about to plant, to their stock of Fruit Trees, which is the largest and much the finest that they have ever offered, consisting in part of the following:

Standard Fruit Trees—Of Apple, 60 varieties; Pear, 75 varieties; Cherry, 50 varieties; Plum, 25 varieties; Peach, 30 varieties; Nectarine, 6 varieties; Apricot, 6 varieties; comprising every sort of merit.

Dwarf Fruit Trees, on the best stocks of Apple, Pear, and Cherry, and of the above large collection of sorts.

Small Fruits—Currants, 15 varieties; Gooseberries, 100 varieties; Grapes, native and foreign, 25 varieties; Raspberries, 5 varieties; Strawberries, 20 varieties, etc.

Deciduous and Evergreen Trees, for Lawns, Parks, Streets, etc.

Evergreen and Deciduous Shrubs, in great variety, including 400 sorts of the Rose.

Bulbs, in varieties—Crocus, Crown Imperials, Gladiolus, Hyacinths, Lilies, including the lancifolium sorts, Tulips, etc., etc.

Chrysanthemums—The finest new Pompones, or Daisy, varieties.

Dahlias—The best and highest prize varieties shown in England during 1851-2, including all the best old sorts.

Green-house and Bedding Plants, etc., etc., of every description.

Plants for Hedges—Buckthorn, Osage Orange, Privet, American Arbor Vite (White Cedar), Norway Spruce, etc.; all of which will be sold at the lowest rates.

All articles are put up in the most superior manner, so that the plants, etc., may go thousands of miles, and reach their destination in perfect safety.

Parties giving their orders may depend that perfect satisfaction will be given them.

The following Catalogues, containing the prices, are published for gratuitous distribution; but, as we are obliged to prepay the postage if they are mailed, correspondents will please enclose a one cent postage stamp for each Catalogue wanted:

No. 1.—A Descriptive Catalogue of Fruits, Ornamental Trees, Shrubs, Roses, etc.

No. 2.—A Descriptive Catalogue of Dahlias, Verbenas, and other bedding plants, etc., etc., including many new articles which may be introduced up to the time of its publication, and is issued every spring.

No. 3.—A Wholesale Catalogue—a trade list just published for the fall of 1853 and spring of 1854—comprising Fruits and Ornamental Trees (such as Evergreens etc.), which are offered in large quantities.

Rochester, October 1, 1853.—14.

WALWORTH NURSERY.

THE SUBSCRIBER has for sale

20,000 Apple Trees, some quite large.

20,000 Dwarf Pears, best varieties.

10,000 choicest varieties Peach Trees.

1,000 large Mountain Ash.

2,000 Horse Chestnut.

3,000 large stocky Balsam Fir.

All Trees sold at the very lowest prices, and Catalogues furnished to applicants.

ALSO, POLAND OATS.

150 bushels of the celebrated Poland Oats, that weigh 42 pounds to the bushel, for sale at one dollar per bushel. Last spring I could not supply one-quarter of the seed ordered.

T. G. YEOMANS.

Walworth, Wayne Co., N. Y., Oct. 1, 1853.—11*

Albany Drain Tile Works,

No. 60 Lancaster Street, Albany, West of Medical College.

THE SUBSCRIBER, successor to JOHN GORR, formerly A. S. BARCOCK & Co., is prepared to furnish Draining Tile, of both Horse-shoe and Sole patterns, at from \$12 to \$18 per thousand pieces. The Tile are more than a foot in length, and fully equal to any of American or foreign manufacture. They are so formed as to admit water at every joint, and drain the land perfectly from twelve to twenty feet on each side, according to the nature of the soil.

Also, Large Tile, for drains about dwellings, yards, &c., at from \$4 to \$8 per one hundred pieces. These are cheaper and more durable than brick drains.

Full directions for preparing ditches, hying Tile, &c., will be sent free to those addressing the subscriber, post-paid. The Tiles can be sent safely any distance. Orders are respectfully solicited.

DAVID CALLANAN,

October 1, 1853.—24. Albany, N. Y.

Fruit and Ornamental Trees, &c., &c.

THE subscribers have the pleasure of announcing an immense stock of Trees, &c., for the autumn trade, embracing—

Standard Trees, for Orchards.
Dwarf and Pyramidal Trees, for Gardens.
Ornamental Trees, for Streets, Parks, and Pleasure Grounds.
Rare and Beautiful Lawn Trees.
New and Rare Weeping Trees.
Evergreen Trees, embracing the rarest species of Pines, Fir, Spruces, Yews, Cedars, Junipers, &c.
Hardy Flowering Shrubs.
Roses, of all classes, and embracing the newest and best sorts.

Rhodias, the finest English prize sorts.
Chrysanthemums, including the finest of the new Pom-pone varieties.

Philoxes and Peonies, superb collections.
Bolting Plants, a complete assortment.
Bulbous Roots, just imported from Holland, and of the first quality.

Hedge Plants.
Bone Drying.
Rhubarb, Asparagus, &c., &c.

The favorable season has given every thing a vigorous and fine growth.

All orders, whether for large or small quantities, executed with the greatest care, and in strict compliance with the wishes of the purchaser.

Packing done in the most secure and skilful manner, so that parcels can be transmitted thousands of miles in safety. Nurserymen and dealers in Trees will be supplied on the most liberal terms.

The following Catalogues are sent, *gratis* and *pre-paid*, to all who apply and enclose one postage stamp for each:

No. 1, Descriptive Catalogue of Fruits.
 No. 2, do do Ornamental Trees, &c.
 No. 3, do do Dahlias, Green House Plants, &c.

No. 4, Wholesale Catalogue.

ELLWANGER & BARRY,

Mount Hope Nurseries, Rochester, N. Y.
 September 1, 1853.—11.

River Bank Nursery,

OPPOSITE THE RACE COURSE, ON NORTH ST. PAUL STREET.
 Office, 106 State Street, Rochester, N. Y.

THE attention of Nurserymen, Orchardists, and Fruit Growers, is requested to our very thrifty and healthy stock of Fruit Trees. We believe the stock is equal, in all respects, to any other in the market, and will be sold at as low prices. We intend to make this a reliable establishment, and we solicit patronage with a strong confidence that we shall be able to give satisfaction. We have for sale this fall—

30,000 Apples, 3 and 4 years old.
 35,000 do 2 do
 100,000 do 1 do
 5,000 Cherries, 2 years from bud.
 15,000 do 1 do
 500 Pears on Quince, 4 years from bud (now bearing.)
 3,000 do do 2 do
 2,000 do do 1 do
 2,000 Peaches, 2 years from bud.
 4,000 do 1 do

The above comprise all the varieties of merit. We have also an assortment of Plums, Apricots, Nectarines, &c., &c. Raspberries, Gooseberries, and Currants, in great variety. We also offer to Nurserymen—

100,000 Apple Seedling, 1 year old.
 50,000 do 2 do
 50,000 Cherry Seedlings, 1 year old.

All orders will be promptly and carefully executed, and no pains will be spared to give satisfaction.

Geo. H. CHERY & Co.

☞ We particularly invite the attention of Western Nurserymen to our young stock. It is very thrifty, and can be removed with safety, as it has not been unnaturally forced, and will be sold at a reasonable price.
 September 1, 1853.—21.

First Premium Railroad or Endless Chain Horse Powers and Threshers.

WE will make it an object to all who want the above, to purchase of us.

Before buying, call at 68 State street, Rochester, and be convinced.
 BRIGGS & BROTHER.

September 1, 1853.

Highland Nurseries, Newburg, N. Y.

A. SAUL & CO., in calling the attention of their patrons, and the public in general, to their very extensive stock of FRUIT AND ORNAMENTAL TREES, SHRUBS &c., which they offer for sale the coming autumn, would remark, that owing to the past summer being one of the most favorable for the growth of Trees which they have had for many years in this locality, their stock of Trees and Plants, in every department, is *larger, more thrifty*, and in every respect finer than usual.

To particularize within the limits of an advertisement would be impossible. They therefore refer planters and dealers in Trees to their Catalogue, a copy of which will be sent by mail to all *post-paid* applicants for the same, on enclosing a postage stamp.

They invite especial attention to their *very large* stock of Standard and Dwarf Pear and Cherry Trees; also, Plum, Peach, Apricot, and Nectarine Trees; as well as Grape Vines, Gooseberries, Currants, Raspberries, Strawberries, &c., in every known variety, together with all other plants, &c., usually kept by the trade.

500,000 strong two years old Osage Orange Plants, in three different sizes, at \$10, \$8, and \$6 per 1,000.

Buckthorn Plants, two years old, at \$5 per 1,000.
 Highland Nurseries, Newburg, N. Y., Sept. 1, 1853.—21.

Fruit and Ornamental Trees.

T. C. MAXWELL & BROS. would invite the attention of purchasers to the superior stock of Fruit and Ornamental Trees which they offer for sale this fall. Their Trees are of the most approved varieties, and *unexcelled* in health, vigor, and beauty; and they feel confident that they can give entire satisfaction to all who may favor them with their orders, both in prices and quality. Purchasers are requested to call and examine.

60,000 Apple Trees, large and thrifty.
 20,000 Pear do more than half Dwarf, of the best kinds, and unequalled in size and beauty.
 20,000 Cherry Trees, first quality, in every respect.
 5,000 Peach do one year from bud.
 2,000 Plum do mostly on Peach.
 2,000 Apricot do one and two years—*fine*.
 2,000 Quince do
 2,000 Grape Vines, mostly Isabella.
 6,000 Mountain Ash Trees, large and *fine*.
 1,000 Horse Chestnut Trees large and *fine*.
 3,000 Balsam Fir Trees, two to four years in nursery—*fine*.

80,000 Arbor Vitae, for Hedges—8 to 30 inches.
 Also, a general assortment of smaller Fruits, Shrubs, Roses, &c.

☞ Trees carefully packed and promptly shipped.

Old Castle Nurseries, Geneva, N. Y., Sept. 1, 1853.—21.

Geneva Nurseries.

THESE Nurseries are located just half way between Syracuse and Rochester, being fifty miles from each place, and the facilities for shipping trees are equal to any in the State. Our stock of Trees is now extensive. Thirty thousand Cherry, 1 to 3 years old; thirty thousand Peach, 1 year; six thousand Plum, 1 year; one hundred and fifty thousand Apple, 1 to 3 years; five thousand European Mountain Ash, large size; together with a general assortment of other Trees.

STOCK FOR NURSERYMEN.

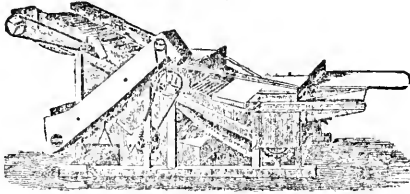
Five hundred thousand Apples, 1 to 2 years; twenty-five thousand Pear; ten thousand Plum; twenty-five thousand Cherry, five thousand Sweet Briar, 1 year from seed; five thousand European Ash; fifty thousand Osage Orange; twenty thousand White Cedar; five thousand Balsam Fir; six thousand Norway Spruce; two thousand Sugar Maple; two thousand Hemlock; five thousand Asparagus Roots, 1 and 2 years; three thousand Rhubarb; twenty thousand Basket Willow Cuttings.
 E. T. & E. SMITH.
 Geneva, N. Y., Sept. 1, 1853.

New York Agricultural Warehouse.

HORSE POWERS, Threshers, Fan Mills, Smut Machines, Grain Drills, Hay Presses, Grain Mills, Corn and Cob Crushers, Cider Mills, and a large assortment of Plows, and all kinds of Agricultural and Horticultural Implements.
 Peruvian Guano, Superphosphate of Lime, Bone Dust, and other fertilizers, of the most superior kinds.
 R. L. ALLEN.

Sept. 1, 1853. 189 and 191 Water street, New York.

AGRICULTURAL IMPLEMENT MANUFACTORY
CORNER OF CAROLINE & THIRD STREET,
BUFFALO, N. Y.



Pitts' Patent Separator—Improved Double Plow Horse Power—Pitts' Corn & Cob Mills, &c.

I HEREBY give notice that since the extension of the patent right on my Machine for Threshing and Cleaning Grain, I have removed to Buffalo, N. Y., where I have permanently located, and erected a large establishment for the future manufacture of the above Machines.

The Separator has been enlarged, improved, and rendered more permanent and durable in all its parts, while the Horse Power for strength, ease, durability and cheapness of repair is not surpassed by any in the United States. This Power is warranted to stand the full strength of eight horses—also to give as much effective or useful power when driven by one or two horses as any other Horse Power, whether constructed on the endless chain or lever principle. It was put on trial at the great exhibition of Horse Powers and Threshing Machines at Geneva, July last, 1852, where it received the New York State Agricultural Society's First Premium "for the best Horse Power for general purposes." The Separator, at the same trial, also received the Society's First Premium.

My Machines will thresh and clean from three to five hundred bushels of wheat per day, and other grain in proportion.

Two hundred of the above Machines are for sale at the Agricultural Works of the subscriber in this city, all warranted to be a better article than can be purchased at any other shop, and if they do not prove on trial to be so, I will take them off the hands of the purchasers at the price they may pay me for them.

I further notify all persons who are purchasing Horse Powers and Separators to be used in California or Oregon, that I will hold them accountable for any infringements of the rights secured to me by letters patent in the above Machines, as I am manufacturing a Horse Power and Separator expressly designed for that section.

All orders for the above Machines hereafter addressed to JOHN A. PITTS, Buffalo, N. Y., will receive prompt attention.

May, 1853—4f.

Buffalo, N. Y.

French Zinc Paint.

THIS new and beautiful article of Paint is now offered to the trade and public, ground in prepared linseed oil, for the first time in this country. It has been used successfully in France for the last five years, where it has superseded white Lead as a paint.

The French Zinc when properly prepared and used, makes the most brilliant and durable white in use, and is entirely free from all poisonous qualities.

The French Zinc is not more expensive than white lead, and is prepared in such a manner that it requires no farther preparation for use, than to thin it with Turpentine or raw Oil to the consistency of white lead paint.

The French Zinc is very much whiter, and has a better body, than the New Jersey Zinc.

The French Zinc is offered dry, and prepared as above, in quantities to suit purchasers, at the Manufacturer's Depot, No. 17 Buffalo st., Rochester, N. Y.

July, 1852,

M. F. REYNOLDS.

Superphosphate.

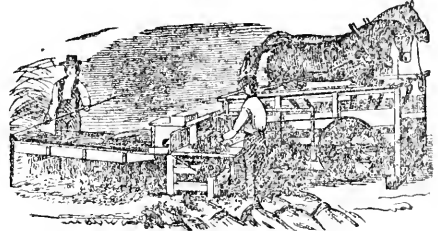
NO expense has been spared in the combination of this most fertilizing manure, which contains all the nutritive properties of all plants. It is superior to most of the articles offered for sale under the same name, and is inferior to none, although sold at a much lower price. Put up in bags at \$10 per ton of 2000 lbs., cash.

Office of the New York Superphosphate Manufacturing Company, No. 159 West street, New York.

VICTOR E. KNOWLES, Agent.

September 1, 1851.—3f.

HALLOCK'S Ag'l Warehouse and Seed Store.
No. 24, Exchange street, Rochester, N. Y.



[Emery's Patent Premium Railroad Horse Power, Threshing Machine and Separator.]

THE subscriber, late from the establishment of Emery & Co., manufacturers at Albany, where he has been engaged for the past six years, has been appointed their SOLE AGENT in Rochester and Western New York, for the sale of Emery's celebrated Railroad Horse Powers and Threshing Machines; Circular and Cross-cut Saw Mills, Feed Mills, Corn-stock and Hay-Cutters, &c.

adapted to the Power, and now offers them at manufacturer's prices, with the transportation added, and subject to the warranty, as follows: "To work to the satisfaction of purchasers as represented in circulars and catalogues, or to be returned within three months, and full purchase money to be refunded." The attention of farmers is solicited, and a careful investigation into the construction of this Power and its comparative merits, as well as price requested, before purchasing elsewhere. He is also agent for their

COMBINED REAPER AND MOWER,

and keeps constantly on hand Plows, Hay-Cutters, Corn Shellers, Seed Planters, &c., &c., comprising a complete and extensive stock of Agricultural and Horticultural Implements generally, together with a full assortment of Field and Garden Seeds, of the best Imported and Shaker growth.

He is also agent for the sale of Seymon's Grain Drills and Broadcast Sowers, Wheel Cultivators, Gang Plows, Clover Hullers, Cider Mills, Clover Gatherers, Horse Rakes, Scythes and Snaths, Hand Rakes, Grind Stones, &c.

He will be prepared to furnish dealers with Drum and Taylor's well known Scythes; also Manure, Straw, and Hay Forks, Snaths, Rifles, and other haying tools at manufacturer's prices, wholesale and retail.

Particular attention is called to a New PLOW, which is believed to be the best cast iron Plow ever offered, and which is warranted to do better work, with less expense of team, than any other Plow heretofore sold in Rochester—while the price is less than any other equally well finished.

The "uniform one-price cash system" will be adopted, with prices as low as the cost of articles, and just compensation for labor and time, will allow.

Farmers and others are invited to call and examine the stock of Machines and Implements, and are assured that no effort shall be wanting to meet promptly the wants of a discriminating public.

Circulars and Catalogues furnished gratis on application personally or by mail. E. D. HALLOCK,
June 1, 1853—4f No. 24, Exchange street, Rochester.

Extra Improved Superphosphate of Lime for Sale.

THE subscriber, at additional expense, has recently made important improvements in the manufacture of this well tested and valuable manure, and is now prepared to furnish an article assuredly equal, if not superior, to any in the market, at the lowest cash prices.

Put in bags of 50, 100, and 150 lbs., each, and branded "No. 1 Superphosphate of Lime." Manufactured and sold by Wm. PATTERSON,

Division Street Wharf, Newark, N. J.

AGENTS:

HASKELL, MERRICK & BULL, 10 Gould-st., N. Y.

H. EMERY, Esq., Agricultural Warehouse, Albany.

PUTTIER & FULLER, Hallowell Maine.

E. GREEN, Esq., Easton, Penn.

E. CHASE, Esq., Middletown, Conn.

July, 1853—4f

THE

HORTICULTURIST,

And Journal of Rural Art and Rural Taste.

EDITED BY P. BARRY, AUTHOR OF THE "FRUIT GARDEN."

The *Horticulturist*, as its name implies, is devoted to Horticulture and its kindred arts Rural Architecture and Landscape Gardening, and will keep its readers advised of every thing new on the subject, either in Europe or America. It is a Monthly Journal of forty-eight pages, beautifully printed on the finest paper and elegantly illustrated. In addition to numerous wood engravings, each number contains a full page engraving on stone, of some new, rare, and valuable fruit or flower, and is one of the most beautiful as well as the most useful Monthly Journals published in the world. We subjoin a few notices by the press, showing the estimation in which the work is held by our editorial brethren:

We are glad the work has fallen into such excellent hands.—*Louisville Journal*.

We feel that we are doing our readers a real service when we urge them to subscribe for this invaluable monthly.—*Weekly Democratic Press, Chicago*.

We congratulate the public on having so valuable a periodical as the *Horticulturist* within their reach.—*New York Daily Book*.

Its contents are spirited and various, the selections judicious, the illustrations elaborate.—*New York Daily Times*.

A standard work of authority upon all subjects discussed or explained in it.—*Vicksburg Whig*.

There is no work in this country of greater value to the cultivator of fruits.—*Inquirer, Portland, Me.*

It is well got up; its articles able, various, and appropriate.—*Genoa Courier*.

Every man who has land enough for a garden should possess this work.—*Woodport Advertiser*.

The plates alone are worth the year's subscription. The letter press is of a highly instructive character, and embraces a variety of topics. None who have a taste for the beautiful in nature should be without such a valuable publication.—*Hamilton (N. Y.) Spectator*.

There is substantial profit as well as pleasure in cultivating taste in buildings, yards, gardens, &c., and the subscription price would be capital well invested by those who will attend to the contents of the *Horticulturist*.—*Daily Courier, Zanesville, Ohio*.

Any remarks of our own we fear would add nothing in comparison with the value of such a well conducted work. The plan of coloring the plates is decidedly beautiful, and no person interested in horticultural pursuits should be without it. It seems a wonder to us that horticulturists do not look more to their own interests, than to allow their monthly papers to be received with this indispensable accompaniment. The circulation ought to reach half a million. Although the number issued is already extensive, yet it should be increased, from the fact that it is a work of great merit.—*Port Byron (N. Y.) Gazette*.

This periodical is got up in excellent style, and well sustains its former reputation under its present management.—*Middlebury (Vt.) Register*.

We are quite satisfied with the work, and are inclined to believe that, to the mass of readers, the work will be even more acceptable than it was under the charge of the accomplished Downing. We recommend the work cordially to the patronage of our friends and the public.—*Massachusetts Spy*.

Its contents embrace a variety of subjects, treated upon in the most scientific manner. The illustrations are numerous and well executed. We know of no other work of the kind on this continent that can compare with the *Horticulturist*.—*Daily Spectator, Hamilton*.

This magazine has lost nothing by falling into the hands of its present proprietor, Mr. VICK, of Rochester; for he maintains its neat typographical experience, while the new editor, Mr. BARRY brings to its editorial management abilities of a high order.—*Gazette, Keeseville, N. Y.*

The *Horticulturist* is almost invaluable to the fruit grower, and to the gardener, and it ought to be in the hands of every one. The new editor, Mr. BARRY, proves his eminent fitness for the post so lately filled by the lamented Downing.—*Watch Tower, Adrian, Mich.*

This publication embraces a wide field, and has something instructive for every reader. Its artistic embellishments and mechanical execution are of the highest order; for this we give credit to the publisher. Its editorials are practical, scientific, varied, and instructive. Its correspondence embraces some of the ablest horticultural writers in the Union.—*Register and Examiner, West Chester, Pa.*

This useful monthly, instead of losing interest as many feared it would in consequence of the death of its lamented proprietor and editor, Mr. DOWNING, continues to fully maintain its reputation. In fact the present editor and publisher appear to be using their best endeavors to raise it higher in public estimation than before. It is an eminently practical work, and therefore well fulfills its promises. No one who has anything to do with gardens, trees, shrubs, plants, or flowers, should fail to be among its readers.—*News and Advertiser, Middletown, Conn.*

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July, 1852—41.

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See page 247 this Journal.

[aug.—81.]

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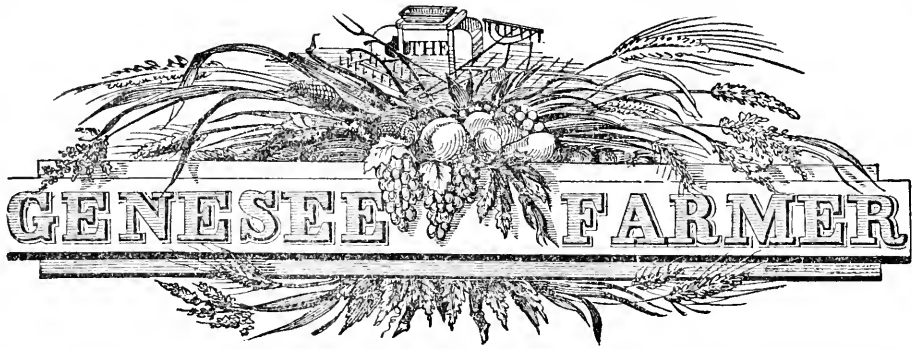
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DANIEL LEE,

Rochester, N. Y.

November, 1852.

STEREOTYPED BY J. W. BROWN, ROCHESTER, N. Y.



Vol. XIV.

ROCHESTER, N. Y., NOVEMBER, 1853.

No. XI

THE AMERICAN SOCIETY FOR THE PROMOTION OF AGRICULTURAL SCIENCE.

IF there is any value in a knowledge of the true principles of agriculture, and if this knowledge is worthy of cultivation by American farmers, we respectfully submit the question to them, Whether it is not best to make an organized effort in behalf of agricultural science!

Every observing, intelligent member of our present agricultural societies, knows that they do next to nothing to encourage scientific investigations of any kind. Their annual shows bring the masses together once a year to see the bull Apis, as the Egyptians brought their children to smell his breath, believing that the breath of the sacred animal would inspire them with all useful knowledge, extending even to the foretelling of future events. For this and other kindred practices, the ancient Egyptians are sometimes pitied for their idolatry and blind superstitions; but when we compare their very limited advantages with ours, the cattle exhibitions of this age appear less instructive than the Apis festivals of the Egyptian husbandmen, which lasted seven days in each year, and were conducted by the priests with vastly more pomp, care, and unction, than characterize our poor imitations. Long before the time of ABRAHAM, the valley of the Nile was well cultivated, so that JOSEPH found no difficulty in laying up grain enough to feed the indefinite millions seven years, without an intervening harvest. This historical incident communicates a volume of instruction. Such extraordinary providence could be possible only among a people of wonderful industry, self-denial, the greatest of all virtues, and far-reaching intelligence. Not only the improvident Hebrews, but all the neighboring tribes and nations, were often forced to beg their bread of the more educated and civilized farmers of Egypt. The latter were the first land surveyors, and the earliest cultivators of astronomy among mankind. Their farms were frequently, and for months together, under water, by the annual overflow of the Nile; and they set up "land-marks," looking to the stars for cardinal points, and thus united the rudiments of tillage, surveying, engineering, and astronomy, prompted by that necessity which is the mother of invention. In every thing that pertains to irrigation and drainage, the Egyptians were far in advance of us. We, short-sighted impoverishers of a virgin soil, employ canals for commercial purposes alone; they used them not only to convey their crops to Thebes, and other great markets, but to bring all needful manure from their populous cities, and distribute it equally in every cubic foot, cubic inch, and cubic line of soil, dissolved in water. Thus fertilized, their lands never required rest from the production of wheat a single year, for indefinite centuries.

At this time, the State of New York has a thousand miles of canals, and two thousand and one hundred miles of railways, in successful operation. Science would double the

intrinsic and productive value of every man's farm in five years, if it were only encouraged as it ought to be. New York farmers enjoy great facilities for the economical improvement of their meadows, pastures, and tilled fields. They lack nothing but a little attainable knowledge—knowledge to be derived from original researches yet to be made. They are invited, most respectfully but earnestly, to take a single step in advance of their present position. As in the acquisition of property, so in the increase of knowledge, they can keep all their present stock, even to the extreme of prejudices, and then learn to make a far wiser and more profitable use of the manifold physical elements which Nature has placed within their reach. When Providence sent the farmers of the Nile a full supply of water, they wisely stored up all that they needed for future use. The same Providence drops from the clouds an average of two hundred pounds of water upon every square foot of soil in the United States; and who among all our five millions of owners and cultivators of land, stores up that excess of rain water which does not soak immediately into the ground, but goes to form freshets in creeks and rivers? Why should American farmers appear to despise the practical science of agricultural engineering, and thereby deprive their crops of both irrigation and manure, when and where they are most needed? Weigh well the facts that almost every square yard of ground receives a ton of water every year, and that a little science communicated to the masses would suffice to add four fold to the natural benefits of this "fatness," which might abound every where in this country as it does in the valley of the Nile. The sources of the Nile, the Mountains of the Moon, contain no elements of fertility that do not exist in equal abundance in the mountains of New England and New York, Pennsylvania and Virginia. The rain water of Africa is no richer than the rain water of America. By uniting the careful study of astronomy, surveying, engineering, and other sciences, with practical agriculture, the cultivators of the soil in the rainless valley of Egypt made their country the granary of the world for thousands of years. Even now they export from ten to twenty million bushels of wheat a year, to say nothing of cotton and other staples. The history of agriculture is full of instruction, and ought to be read far more than it is. In eastern Asia, an unwise system of tillage increased the area of barrenness on all sides of every natural desert.

When will Americans understand that it is the wise use of natural advantages, not their reckless abuse, which makes a great, enduring, and powerful nation? Science will confer upon agriculturists the ability to draw the elements of grain from the earth to the depth of fifty and one hundred feet, with a liberal profit. As this statement may startle some of our unprogressive readers, who can not possibly discover sixty pounds of wheat in twenty of guano, we earnestly desire to test in wheat and corn fields, in meadows and pastures, the soundness of our reasoning on this subject. Trust-worthy experiments in agriculture cost money; and their expenses should be borne by the small contributions of many associates. We wish to find one thousand men who feel able and willing to give a dollar a year to promote agricultural science. Many years ago, after receiving the best chemical education this country afforded, we imported chemical apparatus from Europe, and prosecuted a series of researches, some of which are thus noticed in the September number of the *American Farmer*, in an extended and valuable article on wheat culture:

Here, for the benefit of our numerous new subscribers, it may be opportune to the occasion to copy a few paragraphs from Dr. DANIEL LEE'S admirable articles, which originally appeared in his excellent journal, the *Genesee Farmer*. We give them again, because of the reliableness of the authority, and because of the important facts they detail. Dr. LEE says:

"There are 7.7 pounds of ash in 100 pounds of dry clover. If this crop be taken from a field for a number of years, without making restitution, it will be found quite exhausting, notwithstanding the power of clover to draw its organic nourishment from the atmosphere. An acre of stout clover, when perfectly dry, has been known to weigh 3,694 pounds, containing 284 pounds of ash. This is some 80 pounds more than is removed from an acre in a fair crop of wheat. It is useful to study

the mineral elements of this plant in connection with those of wheat. In 284 pounds of the ash of clover there are of

Phosphoric acid,	18.00 pounds.
Sulphuric acid,	7.00 "
Chlorine,	7.00 "
Lime,	70.00 "
Magnesia,	18.00 "
Potash and soda,	77.00 "
Silica,	15.00 "
Oxide of iron and alumina,	00.90 "
Carbonic acid,	71.00 "
Total,	283.90 pounds.

"Throwing out of the account the 71 pounds of carbonic acid, we have 213 pounds of earthy matter. An acre of *wheat* needs, to feed both seed and straw, 17 pounds of phosphoric acid. An acre of good clover will furnish 18 pounds. That quantity of wheat needs 2 pounds of sulphuric acid. An acre of clover will supply 7 pounds. The former needs 1 pound of chlorine—a substance that forms 60 per cent. in common salt—clover will furnish 7 pounds. Wheat (an acre) needs 16 pounds of lime. Clover will supply 70 pounds. Wheat needs 13 pounds of magnesia. Clover will supply 18 pounds. Wheat needs 24 pounds of potash and soda (with an excess). Clover will furnish 77 pounds. Wheat needs 121 pounds of silica, of which clover can only furnish 15 pounds. Except silica, or sand, it will be seen that an acre of good clover yields all the several minerals needed by a crop of wheat; and some of the more valuable ones, in large excess. In its organic elements it is not less abundant.

	Carbon.	Oxygen.	Hydrogen.	Nitrogen.
Clover has in 3,693 pounds,	1,750	1,395	155	75
Wheat crop,	1,457	1,262	171	92

"It is particularly worthy of note, that clover yields more than twice as much nitrogen as both the wheat and straw require. It is proper to state, that to make 3,693 pounds of perfectly dry clover, one must have 4,675 pounds of clover hay. But in plowing in clover for wheat, we gain all the stubble and roots, in addition to what the scythe clips in mowing."

The practical experience of wheat growers justify the opinion, that, as a preparation for a wheat crop, there is nothing superior to the turning in of a crop of clover. Why such is the fact, we shall now proceed to show, by constructing a comparative table, showing the constitution of clover and wheat, and as illustrated by the preceding extracts from Dr. LEE'S admirable paper. The quantities of each is the product of an acre, good crops being presumed to have been grown in each instance.

After studying the soils and crops of other sections six years, we are about to resume our researches in Western New York, with increased confidence in its incomparable agricultural resources. Talking, and writing, signify but little; and we beg the co-operation of every friend of the farming interest that *results in practice*, to be seen by all men, may confirm the propriety of investigating the laws of nature that govern the growth of all agricultural plants, and the wisdom of being able to understand and obey these laws, which are the enactments of the Creator.

In the young men of Western New York, we recognise the best material in the world for the formation of a society to promote agricultural sciences. If these gentlemen are unwilling to identify themselves with a movement of this kind, we shall regard it as hopeless to attempt any thing elsewhere of an intellectual character, for the elevation of the agricultural profession. No young man can ever regret that he has studied and mastered the sciences of tillage and husbandry. No matter what position in life he may attain to in the brilliant future of this Republic, his profound knowledge of the laws of agriculture and horticulture will secure to him the respect of all whose good opinion is worth having. To a youth of honorable ambition, what is a dollar a year? After the society is organized, it will determine the investigations to be undertaken, the length of time they are to be prosecuted, and the reports to be made for the instruction of each member whose name will stand recorded as one of the first patrons of agricultural science in the United States. No money is to be paid until one thousand names are obtained, and a treasurer duly appointed to receive the funds of the association. If it is not possible to raise a thousand dollars a year to promote agricultural science in the United States, the historical fact shall be recorded to the enduring disgrace of the age in which we live. There is scarcely a county in the Union that does not cheerfully sup-

port an excess of doctors, lawyers, priests, and merchants. Why, then, can they not encourage the scientific development of the resources of American soil? To the proper investigation of these invaluable resources, there is not so much as one man in the whole Republic who devotes his time and talents. Considering how vast is this landed interest, is it not a fact as extraordinary as it is lamentable, that not a single person in our thirty-one states and six territories should be employed to prove, by actual and reliable experiments, the capabilities of the climates and arable lands of this continent? Without reward, or the hope of reward, we gave months of labor, to say nothing of costly chemicals consumed, to show the relation that clover bears to wheat, and both to the soils of Western New York. These researches were incomplete, and we are anxious to resume them. For our time we shall charge nothing; but we are not rich enough to meet all the incidental expenses of the experiments and analyses that ought to be made. An association of men who believe in the study of Nature's laws, which, being the laws of God, form the basis of all progress and all true wisdom, can easily supply the small sum needed to prosecute important agricultural researches to satisfactory results. To learn how to interrogate Nature requires a great deal of preliminary study. Only a part of the questions put to her by agricultural chemists were properly propounded. They did not fully comprehend the wants of practical farmers; and they failed to give their labors the right direction. Now is the time to profit by past errors and experience in scientific researches, just as a skilful farmer profits in the latter years of his life by the errors and experience which observation and his life have given him. We honor agriculture as a most-useful art; but we submit that *art* alone could never have shown as *science* has done the intimate relation that subsists between a clover plant and a wheat plant. We have now one hundred and nine acres in the District of Columbia dedicated to experimental purposes, and hope to see science and practice united in all the States, in the most successful manner. To achieve this glorious consummation, agricultural science must receive far more encouragement from farmers than they have yet bestowed upon it. Science needs cultivation from year to year, just as wheat and corn are cultivated, to obtain a liberal harvest of useful knowledge. Neither wheat nor wisdom is grown and enjoyed without labor.

MAKING, SAVING, AND APPLICATION OF MANURES.

THE making, saving, and application of manures I have found to be the most difficult thing connected with tillage husbandry. To obtain some information in relation to this and other matters, I have ventured to trespass on your pasture. Years ago I was in the habit of reading the *Cultivator*, edited by Judge BUEL, of Albany. The Judge strongly advocated the following system with respect to manures, as a general thing: They were to be hauled from the yard in a green state, and applied to hoed crops on green sward, spread on the surface and plowed under. BUEL's argument was of this nature: That manure should never be suffered to rot in the yard, or wherever it was deposited, because the action of the sun and rain changed portions of it into gas, which escaped into the atmosphere, and was thereby lost to the plants which it should feed. He also directed to plow the manure under for the same reason. This looked to me like a correct theory, and I put it in practice. My soil is a sandy loam, with usually a pretty tough sod, and I found, after plowing under my manure, that unless we had a very hot season, the crop planted over it did not receive any, or little benefit from the manure. I changed my course. I plow my sod ground first, then draw my manure out green, and spread it on the top and harrow it in as well as I can, leaving, however, considerable on the surface, after the manner of your Essex correspondent in the July number. The result has been, a better crop of corn or potatoes, and the succeeding sown crop full as good. But I am not satisfied that this is correct. I always fear that I lose considerable manure by evaporation, as I have found it impossible to harrow under the long parts of green manure. Does this evaporation question apply to top dressings for meadows? If you will give us

your views on these points, although they may have been often expressed, it will gratify many of the readers of your valuable journal.

Connected with this subject, I wish to inquire as to the best way of constructing manure tanks. How can a yard and stables be so arranged as to save all the urine and liquids made by rains? We can think of ways enough to remove liquid manure to the field, but how can it be distributed there? Former numbers of the *Farmer* have told us of a method being practised in England, and likewise by Mr. CALVERT, of Maryland, to do this with pipes and steam engines; but this will be too expensive, I think, to be of general application on small farms. I wish to have a barnyard with a hard, smooth, water-tight bottom. Can this be done with plank? If not, how can it be attained?

What has become of the United States Agricultural Society and its Journal? I intended to become a member and have the Journal; but they forgot that in taking away the main-spring the motive power was lost.

I am not the only one among your subscribers who rejoices that you have struck out boldly on the subject of agriculture, and taken higher ground than is the wont of others. This course will necessarily bring you in contact with watchful and jealous men; but the truth will bear its weight and succeed in the long run. R. M. ORMSBEE.—*Greenfield, Saratoga county, N. Y.*

The next great improvement in agriculture will be achieved in the making, saving, and application of manures. To realize important benefits in this direction, no new discovery is necessary, but simply the wise use of scientific principles already well known. No facts in agriculture are better understood by intelligent cultivators than that every element in the dung and urine of domestic animals is derived from their food, and that from the earth and atmosphere. Strictly speaking, no one is obliged to "make" manure; for God has made an almost unlimited quantity of the food of plants, which is all the manure they ever need. But to bring this food from where it is, to where the naturally poor or impoverished soil requires it, is a work which demands thought, skill, and capital. We are confident that a great deal of honest hard labor is thrown away in the mismanagement of manures, arising from a want of knowledge of the relative value of their constituent elements. For years have we seen farmers pay a dollar a load for trash in the city of Washington sold as manure, which really was not worth hauling home if given to them, while nightsoil and the dung of horses and swine fed on grain, on their own premises, were allowed to be washed into creeks and lost. None but those who have traveled extensively, and paid particular attention to this department of farm economy, have any adequate idea of the prodigious loss that the country sustains by the wasting of the raw material of its great agricultural staples. It is wasted every where—in woods, swamps, ditches, barnyards, under stable floors, in yards, about hay stacks, in meadows, in fields after it is nominally spread, around hog pens, and in the vaults of privies.

If farmers are willing to improve at all, as we believe many are, the first thing to be done is to avoid this sorry wastefulness of the cream of all fertile land. Provide a water-tight, or a well-cemented or clayed reservoir near your stable, and others in your stock yards, to hold manure of every kind. A basin can be rendered impervious to water by simply pounding good, dry clay, hard and smooth over its bottom and sides. It is best to pound the earth before the clay is applied to make it close, compact, and solid. The basin should have no sharp angles, and its depth, length and breadth, may be governed by the stock kept, and the quantity of manure to be stored therein.

Barnyard liquids are not apt to be very concentrated; and how to convey from 500 to 1000 tons of such to the fields that need manure is a matter which we have found of some practical importance. In Belgium and Holland watering carts, each drawn by a horse or mule, have been used for ages to distribute diluted urine and liquified solids over meadows and fields about to be tilled. This system combines manuring and irrigation, and tells powerfully on all crops; but it is quite expensive, as only a little manure is dissolved in a hogshead of water hauled into the field. Before we proceed to indi-

cate a much cheaper plan for conveying the food of plants back into the impoverished soil, whence so much has been extracted, we invite attention to the following letter from a young farmer whose enterprise and intelligence do honor to his profession :

In compliance with a solicitation in the July number of the *Farmer* for the views of correspondents as to the best pipe for conducting water, I give my experience. I have a pipe in operation made of two-inch pipe drain tile surrounded with water lime cement, that brings to my yard the water of a spring one hundred rods distant. On the bottom of the ditch, two and a half feet in depth, I spread with a plasterer's trowel cement one-half inch in depth, and four inches in width, immediately placing on this foundation one or two tiles, and covering them slightly with the cement. The cement on the bottom must be laid no faster than the tiles, and in this way two men, one to make the mortar while the other places the pipe, can lay thirty rods per day. If it is required to elevate the water many feet, more cement must be used, and more time intervene previous to letting the water in. In durability this pipe may compare with lead, and wholly cement, and is far preferable for its size, which may be four or six inches, and as much larger as tiles can be made. In economy it is also preferable, costing much less than any other conduit of the same dimensions. Two-inch sole tiles are \$10 per thousand pieces, and thirteen will lay one rod, costing thirteen cents; and estimating the lime at seven cents, the expense for materials is twenty cents a rod. If the tiles were glaized, which I think might be done, cement only would be required around the joints. Good tiles of various forms and sizes are now manufactured by A. S. CRAY, Palmyra, N. Y. H. J. FOSTER—*Palmyra, N. Y.*

Well burnt tile pipe put down like pump-logs and cemented at the joints will convey liquid manure into near or distant fields at one-tenth the cost of carting it. A few men working by hand a force pump in a common fire engine, drive water in leather or gutta percha hose over the roofs of six story houses; one or two horses working a force pump in a barnyard would lift one hundred tons of water fifty feet or more high to give a head for its distribution through cement pipes over a distant field, while they could haul there on wheels eighteen tons of water. By flattening the nozzle of the pipe from which the water issues through the hose for distribution, it will spread out like a fan, and fall over the ground in a shower, having a little more ammonia, carbonic acid, and salts than rain water naturally bring to the earth. Manure applied in gentle and timely showers has many very important advantages, which will be fully explained in future numbers of this Journal.

AGRICULTURAL PROGRESS IN NEW YORK.

WE cannot commend the slow progress of agricultural improvement in New York, because the evidence of unskillful husbandry greatly preponderates when we hold an even balance between good and bad farming. The best cultivated districts in Great Britain, France, Belgium, and Holland, are those that produce the most manure, and keep the most stock for that purpose. The extensive turnip culture of England looks directly to this object. The densest peopled nation in Europe (Belgium), unlike the State of New York, that imports so much meat to supply the consumption of its cities, exports a large surplus of fat cattle to London. Belgium has less than half the area under cultivation, according to its population, that New York has, yet the former has both grain and provisions of all kinds to send abroad, after supplying home consumption. At the last census, New York returned 12,408,968 acres of improved land; being within a very small fraction just four acres to each man, woman, and child within its limits. Belgium has a fraction over one arable acre to each inhabitant. Speaking of "the agricultural produce and practice" of that kingdom, Mr. McCULLOCK says: "Corn (wheat), flax, hemp, and timber, constitute the most important materials of the agricultural

wealth of Belgium. The soil, *artificially* enriched, produces more than double the quantity of corn required for the consumption of its inhabitants." The same reliable author states that the average of fat cattle sold in England for fourteen years by Belgian farmers, was 898,076 head per annum. With them, the urine of a cow is worth ten dollars a year to make grain and meat for exportation. London, Liverpool, and Paris markets govern the price of breadstuffs and provisions to a large extent in the State of New York, not less than at Brussels. With these facts before us, let us see what is the substantial progress of agriculture in the Empire State, according to the best lights of official statistics.

From 1840 to 1845, the number of sheep in the State was increased about 25 per cent.; and so prosperous did sheep husbandry appear to the editor of the *Wool Grower* in 1849, that he estimated the whole number of sheep in the United States in June, 1850, at 30,000,000, yielding two and three-quarters pounds of wool a head. When the census was taken, instead of 30,000,000 sheep, the official figures were 21,620,482; and New York, in place of a continued increase, as was expected, had reduced her flocks from 6,443,855, to 3,453,241—a reduction of nearly one-half in five years.

Much has been said about flax culture in this and other States; and a learned Professor from London was invited to lecture on the subject at the recent fair in Saratoga. In 1845, the flax crop of this State was 2,897,062 pounds; in 1850, it was reduced to 940,577 pounds—a falling off of two-thirds in five years!

With fewer acres of land under improvement by half a million, the farmers of this State were able to keep 1,584,344 hogs in 1845; while in 1850 their partially impoverished fields kept only 1,018,252—a reduction of 34 per cent. in five years, almost equalling that in sheep.

In 1845, their better pastures and meadows kept 2,072,330 head of neat cattle; in 1850, their poorer pastures and poorer meadows, notwithstanding they had nearly three millions less sheep to summer and winter, yielded sustenance to only 1,877,639 head of cattle. And to cap the climax of New York *progress* in husbandry, the number of horses kept was reduced from 505,155, in 1845, to 447,014, in 1850; and milch cows, from 999,490 to 931,324.

Have the State and County Agricultural Societies in this great commonwealth duly investigated the causes of this alarming decrease in the machinery for making manure? We suspect that they have turned away from the profound study of the science of statistics, to enjoy the light and trivial amusements of common cattle shows. Whether the cultivators of the earth draw their increased crops of wheat and corn, oats and barley, from the natural resources of the subsoil, or from manure honestly applied to the land, who among all the promoters of agricultural knowledge in New York has ever taken the least pains to inquire? Tell us plainly, kind reader, what sort of *progress* those farmers are making who do not purchase imported manure, nor the raw material to form their crops, and do not keep stock enough to replace a tithe of the elements of fertility extracted from their cultivated fields?

Can a cubic foot of any earth in these fields contain more than a quite limited quantity of the precise atoms that go to organize wheat and corn, grass and potatoes? Why are the dung and urine of a sheep worth a dollar a year in Belgium, and scarcely ten cents in New York? Because in Belgium no one is allowed to consume and waste the natural resources of the land that both feeds and clothes an intelligent and moral people. They use the soil, not abuse it; while we both use and *abuse* it.

If it be possible in the moral government of society, and the necessary connection of one generation with the other, for the first and the parent to wrong the second and the offspring, then this generation is guilty of the crime of robbing the land of its elements of bread and meat, and wasting them in cities and elsewhere, which elements God placed in the virgin soils of America for the equal use and benefit of all generations in

all coming time. The natural fertility of soils and subsoils being the gift of our common Creator, to impair said fertility for a narrow, mercenary purpose, is an offence against the public safety, the highest interest of all, which ought to be punished with greater severity than treason. What other interest can a nation have superior to the continued fruitfulness of the land, which so obviously supports all its citizens?

Twenty millions of dollars can not, by any known process, make good the damage done to the farming lands of New York in the year 1853, by its three million three hundred thousand inhabitants. If this statement be true, and we invite the closest criticism to show the error if there be one, what ought the writer, who was born and reared in the State, to say of its agricultural progress?

Why should Monroe county, which raises more grain than any other in the United States, diminish its sheep 61,655, or from 173,952 to 112,297, in five years? Why should it diminish its swine 17,292 head in the same length of time? Why reduce its number of milch kine 5,381? Why reduce its number of horses 3,235? These reductions were made from 1845 to 1850, while the acres of improved land in the county were increased in the mean time 21,092½.

These trustworthy statistics, and many more at our command, are pregnant with meaning; but there is not room in a single number of the *Farmer* to discuss them in all their bearings. We always restrain our own reasonings, that more reliable facts relating to agriculture may be condensed into this small paper than are found in any other. Having the facts before them, most persons will draw the proper inferences therefrom.



AGRICULTURAL STATISTICS OF THE STATE OF NEW YORK IN 1845.

The whole number of acres of improved land in the State is 11,737,276: of which 1,013,665 is devoted to the production of wheat; 1,026,915 to that of oats; 595,135 to that of corn; 255,762 to that of potatoes; 317,099 to that of rye; 192,504 to that of barley; 117,379 to that of peas; 16,232 to that of beans; 255,496 to that of buckwheat; 15,322 to that of turnips; and 46,089 to that of flax; wheat and oats being the great agricultural staples of the State: corn and rye holding the next place; potatoes and buckwheat, in about equal proportion, the next; and barley, peas, flax, beans, and turnips, following in the order in which they are here named; the least number of acres being devoted to the culture of the turnip.

The western and northern portions of the State are best adapted to the cultivation of wheat, potatoes, oats, and rye; while the southern and eastern portions seem most favorable to corn, barley, peas, beans, turnips, and flax. The middle counties afford the best encouragement to the raising of cattle.

Of the 1,013,665 acres employed in the raising of wheat, the number harvested during the year is reported at 958,234, yielding an aggregate of 13,391,770 bushels—exceeding by 1,438,263 bushels the amount raised in 1840, and averaging a fraction under 14 bushels to the acre. In the county of Monroe, the average yield is 19½ bushels; in the county of Kings, 19; in each of the counties of Orleans and Niagara, 18; in the county of Clinton, 17½; in Genesee county, 16½; in each of the counties of Cayuga, Ontario, Livingston, and Franklin, 16; and in each of the counties of Onondaga, Richmond, Seneca, Warren, and Wyoming, 15. In two of the outer wards of Brooklyn, the average yield was 24 bushels to the acre; in the town of Wheatland, Monroe county, 22 bushels; and in Sweden, same county, 21.

From the 1,026,915 acres devoted to the production of oats, the aggregate number of bushels harvested during the year is stated at 26,323,051—exceeding by 5,594,313

the quantity raised in 1840, and averaging nearly 26 bushels to the acre. In the counties of Seneca and Kings, the average exceeded 35; in Monroe and Ontario, 32; in Onondaga, 31; in each of the counties of Cayuga, Dutchess, and Livingston, 30; in each of the counties of Orleans, Niagara, and Rensselaer, 29; in each of the counties of Chenango, Madison, Oneida, Orange, Wayne, and Yates, 28; and in each of the counties of Chautauque, Clinton, Columbia, Jefferson, Queens, Richmond, Suffolk, and St. Lawrence, 27.

From the 317,099 acres devoted to the production of rye, the aggregate number of bushels harvested during the year is stated at 2,966,322, being 18,591 bushels less than were harvested in 1840, or an average of nearly $9\frac{1}{2}$ bushels to the acre. In the county of Kings, the average product is reported at nearly 20 bushels to the acre; in the county of Richmond, at $14\frac{1}{2}$; in the county of Jefferson, $13\frac{1}{2}$; in each of the counties of Clinton, Orleans, and St. Lawrence, 12; in Chenango, $11\frac{1}{2}$; in each of the counties of Erie, Livingston, Rensselaer, and Wyoming, 11; in each of the counties of Schenectady, Queens, and Essex, $10\frac{1}{2}$; and in each of the counties of Albany, Delaware, Franklin, Fulton, Genesee, Herkimer, Lewis, Monroe, Montgomery, Orange, Warren, and Westchester, 10. In the ninth ward of the city of Brooklyn, 265 bushels were obtained from 16 acres, being an average of 25 bushels to the acre; and an equal average crop was obtained in the town of Gravesend in the same county.

From 595,135 acres planted with corn, the aggregate number of bushels harvested is returned at 14,722,115, being an increase of 3,636,973 over the harvest of 1840, and averaging nearly 25 bushels to the acre. In the county of New York, the average yield was 40; in Kings county, $38\frac{1}{2}$; in Richmond, 35; in Suffolk, 34; in each of the counties of Orange and Westchester, 32; in Rockland, 31; in each of the counties of Monroe and Orleans, 30; in each of the counties of Niagara, Ontario, and Seneca, 29; in each of the counties of Chemung, Chenango, Jefferson, Oneida, Onondaga, Putnam, and Tioga, 27; in each of the counties of Clinton and Wayne, $26\frac{1}{2}$; and in the county of Broome, 26.

From 255,762 $\frac{3}{4}$ acres planted with potatoes, the aggregate number of bushels obtained was 23,653,418, or an average of 90 bushels to the acre. In Jefferson and Franklin counties the average yield exceeded 150 bushels; in St. Lawrence, 145; in Clinton and Orleans, 137; in Essex and Genesee, 125; in Washington, 122; in Suffolk and Wayne, 120; in Chautauque, 112; in each of the counties of Kings, Monroe, and Niagara, 110; in each of the counties of Ontario, Cattaraugus, and Cayuga, 105; in Allegany, 89; in Yates, 98; in Seneca, 97; and in each of the counties of Lewis and Queens, 95. In each of the towns of Antwerp and Rutland, in Jefferson county, the average yield per acre was 187 bushels. There has been a falling off of the potato crop of upwards of 6,000,000 bushels since 1840.

From 117,379 acres sown with peas, the aggregate number of bushels raised was 1,761,504, or an average of 15 bushels per acre. In the town of Westchester, Westchester county, upwards of 170 bushels are returned as having been produced from $3\frac{1}{4}$ acres, averaging 56 bushels per acre. In the county of Kings, the average crop was 35 bushels; in Richmond, 24; in Putnam, Queens, and Wyoming, 20; in Onondaga and Orleans, $19\frac{1}{2}$; in Suffolk, 18; in each of the counties of Genesee, Madison, Montgomery, and Rockland, 17; and in each of the counties of Albany, Allegany, Cayuga, Chautauque, Erie, Livingston, Monroe, Niagara, Oneida, Ontario, Seneca, St. Lawrence, and Steuben, 16.

From 16,232 acres devoted to the raising of beans, the aggregate number of bushels produced was 162,188, or an average of 10 bushels per acre. In the town of Westfield, Richmond county, from $2\frac{3}{4}$ acres 228 $\frac{1}{2}$ bushels were produced, being an average of 114 bushels per acre; in the ninth ward of the city of Brooklyn, 1,960 bushels were raised from $19\frac{1}{4}$ acres, being an average of 100 bushels per acre; in the town of New-

town, Queens county, the average was 91; in the county of Westchester, 20; in the counties of Cayuga and Chautauque, 15 and upwards.

From 192,504 acres sown with barley, the aggregate number of bushels raised during the year preceding is returned at 3,108,705—exceeding by 610,535 bushels the crop of 1840, and averaging 16 bushels per acre. From 11 acres in the county of Kings, 360 bushels were raised, being an average of nearly 33 bushels to the acre. In the county of Schoharie, the average return exceeded 22 bushels to the acre; in the county of Suffolk, 44 bushels; in the county of Richmond, 25; in each of the counties of Onondaga and Westchester, 20; in each of the counties of Madison, Monroe, Niagara, and Ontario, 19; in each of the counties of Cortland, Oneida, and Schenectady, 18; in each of the counties of Cayuga and Chautauque, $17\frac{1}{2}$; and in each of the counties of Allegany, Chenango, Essex, Franklin, Rensselaer, and Seneca, 17.

From 255,495 $\frac{2}{3}$ acres of buckwheat, the aggregate number of bushels raised was 3,634,679 $\frac{1}{2}$ —exceeding by 1,390,241 bushels the quantity raised in 1840, being an average of upwards of 14 bushels to an acre. In one of the outer wards of New York, 300 bushels were obtained from 8 $\frac{1}{2}$ acres, or an average of nearly 38 bushels to the acre. In each of the counties of Onondaga and Ontario, the average was 21; in Genesee, 19; in each of the counties of Cayuga, Kings, Putnam, Richmond, Schenectady, Seneca, and Wayne, 18; in each of the counties of Chemung, Chenango, Clinton, Livingston, Montgomery, Niagara, Tompkins, and Yates, 17; in each of the counties of Albany, Chautauque, Cortland, Queens, Rensselaer, Steuben, Tioga, and Westchester, 16; and in each of the counties of Allegany, Broome, Delaware, Dutchess, Erie, Herkimer, Monroe, Oneida, Orange, Schoharie, St. Lawrence, and Ulster, 15.

From 15,322 $\frac{1}{2}$ acres devoted to the production of turnips, the aggregate number of bushels raised was 1,350,332, being an average of 88 bushels per acre. In the county of Suffolk, however, the average is as high as 240; and in one town of that county (Riverhead), the average yield was 293 bushels. In Kings county, the average was 197; in each of the counties of Monroe and Queens, 180; in each of the counties of Niagara and Rockland, 155; in Ontario, 148; in Wayne, 146; in Richmond, 142; in each of the counties of Onondaga and St. Lawrence, 140; in Otsego, 135; in Orleans, 126; in Cortland, 125; in Clinton, 122; in Essex, 121; in Cayuga, 120; in Steuben, 115; in each of the counties of Delaware, Oswego, Saratoga, and Schenectady, 110; in each of the counties of Franklin and Jefferson, 108; in each of the counties of Chemung and Montgomery, 107; in each of the counties of Genesee and Seneca, 105; in Chautauque, 104; in Wyoming, 103; in Livingston, 99; in Allegany, 98; in each of the counties of Tioga and Warren, 95; in Washington, 92; and in each of the counties of Cattaraugus, Lewis, and Schoharie, 90.

From 46,089 acres of flax, the average number of pounds produced was 2,897,062 $\frac{1}{2}$, or an average of 62 $\frac{1}{2}$ pounds to the acre. In the town of Islip, Suffolk county, 120 pounds were produced from one-quarter of an acre; in Poughkeepsie, Dutchess county, 360 pounds from five-eighths of an acre; in the towns of Amenia and Rhinebeck, in the same county, an average of 350 pounds per acre is returned; in Pleasant Valley, 285; and in Clinton, 275. The average product in the county is 237 pounds per acre. In Jefferson county, the average is 190; in Columbia, 187; in each of the counties of Chautauque and Chenango, 180; in each of the counties of Lewis, Queens, and Washington, 175; in each of the counties of Orange and Ulster, 165; in Essex, 164; in each of the counties of Clinton, Cortland, Franklin, Oneida, Putnam, and Rensselaer, 150; in each of the counties of Oswego, Sullivan, and Westchester, 140; in Warren, 139; in Delaware and St. Lawrence, 135; in Broome, 132; and in each of the counties of Greene, Hamilton, Monroe, Onondaga, Richmond, Saratoga, Steuben, Tioga, and Wyoming, 100 and upwards.

The aggregate number of heads of neat cattle in the State is 2,072,330, being an

average of upwards of 35,000 in each county, of which there are nearly 86,000 in the county of Jefferson; 85,464 in the county of Oneida; nearly 78,000 in the county of St. Lawrence; 66,885 in the county of Chautauque; 63,745 in the county of Chenango; 62,555 in the county of Delaware; 61,706 in the county of Otsego; 59,712 in the county of Orange; 57,506 in the county of Erie; 55,482 in the county of Steuben; 53,440 in the county of Herkimer; nearly 52,000 in the county of Allegany; 49,498 in the county of Onondaga; 47,258 in the county of Dutchess; 45,256 in the county of Cattaraugus; 45,216 in the county of Madison; 43,527 in the county of Washington; 41,584 in the county of Cayuga; and 41,300 in the county of Oswego. The number of neat cattle under one year old is 334,456, and the number over one year old is 1,709,479. The aggregate number of neat cattle is less by about 130,000 than in 1840.

ICE HOUSES.

WE can not find the article on ice houses to which our correspondent, Mr. H. T. WAKEFIELD, refers. A box ten feet square on the ground, and ten or fifteen feet high, as he suggests, would form storage room large enough for ice for a common family. A house for keeping ice the year round, should be protected from the natural warmth of the earth under the building, as well as from that of the atmosphere at its sides and roof. Dry spent tan bark, or dry clean straw, may be used as a non-conductor of heat, to fill in between the inner and outer boards of the walls of the ice room. In Georgia, good ice houses are made altogether above the earth; and as it radiates more heat than is commonly supposed, care should be taken to have a good non-conductor under the ice. Pounded charcoal is perhaps the best, although tan and straw are used. Mr. W. appears in doubt about the form and make of the roof. There is an excellent ice house in this city which has a flat roof (double, of course,) and fire proof. Were we about to construct an ice house on a farm, we should first provide suitable drains to carry off the water from any ice that may melt and run through the floor. Then a frame of three by four scantling, ten or twelve feet high, should be erected, with rafters for a common double roof. This frame should be boarded with common boards (or plank, as they are called in half the States,) on the inside, rafters included. Outside of this building, another frame of the same materials should be erected to cover it entirely, leaving a foot space all round and over the rafters to be filled in with dry straw. The boards on the outside frame had better be jointed and matched; and if planed and painted white, it would be an improvement. The scantling standing a foot distant from each other in the clear, and being four inches in thickness, from the covering on the outside to the lining on the inside would give a space between of twenty inches to be filled with clean straw. Properly put in, experience has shown this to form a cheap and nearly perfect non-conductor of heat. The inner door should be double, and listed, to keep warm summer air out. If filled with chaff or charcoal dust, so much the better. The outer door may be single, but should be tight. As the ice melts in spring a little all round next to the walls of the building, straw must be rammed into the space between the boards and ice, which will give it a covering of straw, and prevent further loss. Where lumber is not high, a good ice house may be constructed at a small cost; while for dairy purposes, keeping fresh meats, strawberries, fresh peaches, grapes, and other fruits, it can be made profitable, as well as the source of many luxuries. At the South, ice houses are set up on posts, like corn cribs, having a double floor, with some non-conductor of heat between the boards. At the North, they generally stand flat upon the ground, having only gravel or sand under the floor for the drainage of water, while the ice is packed away on a good layer of straw.

Since writing the above, our attention has been called to directions for building an ice house, given by Mr. WYETH, of Boston, superintendent of the large commercial ice houses near that city, and published in the tenth volume of this journal. They are as follows :

In the beginning, we should remark that the great ice houses of our ice companies are usually built above ground; and Mr. WYETH in his letter to us remarks, "*We now never use or build an ice house under ground; it never preserves ice as well as those built above ground, and costs much more.* I, however, send you directions for the construction of both kinds, with slight sketches in explanation." The following are Mr. WYETH's directions for building:

"1st. *An Ice House Above Ground.*—An ice house above ground should be built upon the plan of having a double partition, with the hollow space between filled with some non-conducting substance.

"In the first place, the frame of the sides should be formed of two ranges of upright joists, six by four inches; the lower ends of the joists should be put into the ground without any sill, which is apt to let air pass through. These two ranges of joists should be about two feet and one-half apart at the bottom, and two feet at the top. At the top these joists should be morticed into the cross-beams, which are to support the upper floor. The joists in the two ranges should be placed each opposite another. They should then be lined or faced on one side with rough boarding, which need not be very tight. This boarding should be nailed to those edges of the joists nearest each other, so that one range of joists should be outside the building, and the other inside the ice room or vault.

"The space between these boardings or partitions should be filled with wet tan, or sawdust, whichever is cheapest or more easily obtained. The reason for using *wet* material for filling this space is, that during the winter it freezes, and until it is again thawed little or no ice will melt at the sides of the vault.

"The bottom of the ice vault should be filled about a foot deep with small blocks of wood; these are leveled and covered with wood shavings, over which a strong plank floor should be laid to receive the ice.

"Upon the beams above the vault, a pretty tight floor should also be laid, and this floor should be covered several inches deep with dry tan or sawdust. The roof of the ice house should have considerable pitch, and the space between the upper floor and the roof should be ventilated by a lattice window at each gable end, or something equivalent, to pass out the warm air which will accumulate beneath the roof. A door must be provided in the side of the vault to fill and discharge it; but it should always be closed up higher than the ice, and when not in use should be kept closed altogether.

"2d. *An Ice House Below Ground.*—This is only thoroughly made by building up the sides of the pit with a good brick or stone wall, laid in mortar. Inside of this wall set joists, and build a light wooden partition against which to place the ice. A good floor should be laid over the vault, as just described, and this should be covered with dry tan or sawdust. In this floor the door must be cut to give access to the ice.

"As regards the bottom of the vault, the floor, the lattice windows in the gables for ventilation, etc., the same remarks will apply that have just been given for the ice house above ground, with the addition that in one of the gables, in this case, must be the door for filling the house with ice.

"If the ground where ice houses of either kind are built is not porous enough to let the melted ice drain away, then there should be a waste pipe to carry it off, which should be slightly bent, so as always to retain water enough in it to prevent the passage of air upwards into the ice house."

STUDY THE ATMOSPHERE.

EVERY one should know the properties and functions of the air he breathes, and of that gaseous ocean which surrounds the globe, and contributes so largely to the nourishment of all plants and animals. To the farmer, the study of the atmosphere is peculiarly important; for its elements, if wisely used, will be to him a mine of wealth. Its nitrogen, oxygen, carbonic acid, ammonia, nitric acid, and aqueous vapor, are the substances from which crops are made, under the genial influence of solar light and heat, aided by the small amount of earthy matter which appears as ash when plants are burnt. If crops were not formed mainly from water and air, it is inconceivable how the addition of 150 lbs. of gypsum, or guano, to an acre of land should increase the weight of its plants one or two tons. Let a dry cotton or corn plant be burnt, and it is nearly all converted into gaseous bodies, and widely diffused in the atmosphere; and when vege-

tables and animals die and rot on the surface of the earth, a similar phenomenon is witnessed.

The gases that form the atmosphere are not chemically combined, but diffused in space in obedience to a peculiar law. If one has a tall glass jar that will hold a half gallon, he may pour into it a half pint of mercury, a half pint of water, and a like quantity of oil, and these liquids, having each a different specific gravity, do not mix nor mingle, but preserve two distinct lines of demarkation, the one between the quick-silver and the water on the one side, and the oil and water on the other.

Carbonic acid gas, oxygen, and hydrogen, have each a different specific gravity, but if we fill the same jar one-third full with the first named gas, which is the heaviest, and one-third with oxygen, which is next in weight, and one one-third with hydrogen, which is the lightest, the carbonic acid, although twenty-two times heavier than hydrogen, will rise to its surface, while the hydrogen will pass down through the oxygen, which is sixteen times heavier than itself, to the bottom of the jar. All gases in the atmosphere, or out of it, behave to each other as they would in a vacuum—each spreading indefinitely into space, regardless of the presence of other gases. Watery vapor obeys the same law of diffusion.

Why it rains, and *how* it rains, the formation of dew, and the dew-point, are meteorological problems and phenomena, which our young readers may be glad to have explained to them.

A very dry atmosphere has a thirst for water so intense, that it will absorb moisture from ice many degrees below the freezing point. Evaporation never entirely ceases until after the atmosphere is completely saturated. When this takes place, by what natural process is the water precipitated in rain; snow, and dews? These results follow an atmospheric law, by which the air has a varying capacity to hold water as vapor, whether invisible or visible. If the atmosphere had the same power to contain aqueous particles at all common temperatures, it could never rain, nor would there ever be a dew. A change of temperature is the cause of rain, hail, snow, dew, mists, and clouds; and the daily revolutions of the earth on its axis, and its annual circuit round the sun, are the principal causes, not only of a change of temperature and winds, but of summer, autumn, winter, and spring. The humidity of the atmosphere governs in a good degree the evaporation from the leaves of agricultural plants as well as others; and evaporation is the measure of circulation from the roots of all trees and all growing crops. Humidity is an important element in agriculture, even when it does not rain. When a current of air saturated with moisture, meets one of a different temperature, and also saturated, a fall of rain is inevitable, because the air at the mean between the two extremes has always a less capacity to hold aqueous vapor than each separate mass of air had before the two were united. Thus: suppose the atmosphere high up near the region of perpetual snow, or the snow-line, saturated with water at 40°, descends to an atmosphere near the earth equally filled with vapor, and having a temperature of 80°. The mean between 40 and 80 is 60°; and if the air at that temperature had the mean capacity between 40 and 80° for holding water, it could not rain nor hail, nor snow, nor yield a respectable dew. It is easy to understand that without rain, there could be no land animals or plants; and therefore the Divine mechanism for dropping fatness from the heavens in showers and dews is the more worthy of study and admiration.

Heat expands the atmosphere, and increases its capacity to take up water and hold it as an invisible vapor. Cold condenses air, and diminishes its power to contain particles of water in any form. The attraction of aggregation brings the separate particles together, often aided by electricity, and the sudden concussion of thunder, and they fall by reason of the attraction of gravitation. It sometimes happens that drops of rain are wholly evaporated before they reach the earth in passing a stratum of dry atmosphere;

and at other times a mass of fine, cold particles gain greatly in size and coalesce into large drops in falling through a stratum of saturated air.

To measure the quantity of dew deposited each night, an instrument is used called a *drosometer*. The most simple process consists in exposing to the open air bodies whose exact weight is known, and then weighing them again after they are covered with dew. According to WHEELS, locks of wool, weighing five decigrammes, are to be preferred, which are to be divided into spherical masses of the diameter of about five centimeters.

Alchemists used carefully to collect dew, which they regarded as an exudation from the stars, and in which they hoped to find gold. It is only recently that the true theory of the formation of dew has been established; although ARISTOTLE'S observations pointed out the fact that most dew falls in calm, clear nights. In the cool of evening, different bodies part with the heat imbibed during the day, unequally; some cooling faster than others. The leaves of trees, grass and other plants radiate heat rapidly, and soon become cold enough, to do what? Condense, like ice-water in a pitcher, aqueous vapor in the atmosphere on the cold surface. White sand and clay are poor conductors of heat, cool slowly, and while green herbage is covered with a heavy dew, naked earth has little or none. At the South, and even in the climate of Washington, a heavy dew runs into a morning shower; a phenomenon which we never saw at the North. By greatly cooling the atmosphere during night, and lessening its capacity to hold water as vapor, not only are vesicles formed which constitute the body of fog and mist, but a shower of fine rain is not uncommon.

The dew-point, which once attracted a good deal of attention, is a very simple affair. It is the point of temperature at which the precipitation of water takes place; and this point varies with the humidity of the atmosphere. A comparatively damp atmosphere, other things being equal, precipitates a portion of its vapor in dew, sooner than a dry atmosphere. If the temperature is below freezing, the dew is congealed into a white frost, or a black one, according to the circumstances.

We have been led into this train of thought by reading in a foreign journal an account of some interesting researches made by an eminent French chemist, M. BARREL, showing the amount of foreign bodies, and the good manures, brought to the earth in rain water during a year. Had the water fallen in a remote rural district instead of the city of Paris, the result would have been more satisfactory. M. BARREL states that although the quantity of the following substances varied in different months, yet the monthly average from July to December, inclusive, was as follows:

SUBSTANCES IN A CUBIC METER OF RAIN WATER.

Nitrogen,.....	8.36	grammes.....	129	grains.
Nitric acid,.....	19.09	do	394	do
Ammonia,.....	3.61	do	357	do
Chlorine,.....	2.27	do	35	do
Lime,.....	6.45	do	100	do
Magnesia,.....	2.12	do	32.7	do

Allowing water to fall only twenty-four inches in twelve months, and the above figures indicate a gain per acre as follows:

Nitrogen,.....	42½	pounds.
Nitric acid,.....	103	do
Ammonia,.....	19½	do
Chloride,.....	12½	do
Lime,.....	35	do
Magnesia,.....	11	do

One hundred and three pounds of nitric acid, and nineteen and a half of ammonia, give a very good dressing of the most valuable constituent of crops. Deep plowed and finely-tilled earth absorbs most of the manures which fall in rain, snow, and dew, and this is one of the great secrets of successful agriculture. Prepare the land well before the seed is planted, and Nature will reward you liberally for so doing.

CULTIVATION OF PASTURE LAND.—The season reminds us of the necessity of saying a word for the much neglected grass land. The majority of parties, who take the utmost pains with their tillage, seem to think that their grass is a different matter, and that it may very well take care of itself. Nor is it often better treated when first laid down. Land is by far too frequently first-cropped as long as it will produce seed again, and then laid down to become permanent pasture. Great credit is taken if the land is made summer-fallow before the close of the corn-cropping; but too often a fallow crop is also taken, to *protect* the seeds, for fear they should grow too luxuriantly.

Others take greater care. They grow no crop of corn; they pay a high price for well selected and carefully grown grass-seeds, and, possibly, they sow the land in fine mechanical condition; still they are sometimes disappointed, and blame the seedsman if they do not find his finer grasses grow as plentifully or luxuriantly as they could wish. The fact is, they wonder ought to be that any should grow at all.

Sometimes grass land is taken out, to improve and lay down again to pasture. But the process adopted is one of depletion, and not of nutrition. They crop away with corn so long as crops are obtainable, and then take great credit if the land gets a dose of lime when it is laid down to grass. And oftener the grass, after the *improvement*, is worse than that which preceded—carries less stock, and maintains them in a manner far inferior to what it did before.

The old grass land of the farm is seldom acted fairly by. It must give up all, and receive nothing in return. If it is mown, a little rotten chaff, or waste scrapings, is a liberal allowance. If not, it is considered that no manure is necessary. Though milking cattle and store stock are depastured upon it, and carry all off year after year, no addition of manure of any value is made to the soil for this serious abstraction. In rich alluvial feeding pastures it is unnecessary, but where store cattle of any kind are depastured, the land must inevitably deteriorate.

To begin with the beginning, land to lay down with grass should be as carefully prepared as for any other green crop; the one being permanent, however, and the other only temporary, the greater care should be taken of the preparation; this is of *more* consequence than seeds. There are always natural grass-seeds in every soil, lying ready for germination and growth as soon as the manurial or feeding elements of the soil are ready for their development. On this principle it is that a dressing of mountain lime will bring into action seeds of white clover where a white clover plant was never known to have existed before. So on a very rich stubble, on almost any soil, there will be found the finest grasses growing in rich luxuriance, after the corn crop is taken off, without a single seed being sown. In like manner, one year will bring a vast smother of trefoil on land where none was ever sown.

Hence, to be rich—to have abundance of phosphoric acid in a free state—to have a full supply of ammoniacal matter, are of more importance than being particular to a shade in the selection of grasses. It is only a question of time. If the land be rich and fertile, there will be found a growth of the finest grasses which are adapted to the soil, and these will soon eat out those which are more or less unsuitable.

So in improving pasture; it is not always necessary to take it out into tillage. If hide-bound, a good heavy loaming, a few fresh seeds, and a compost dressing will soon recover it. If mossy, the moss will soon disappear before good cultivation. It is Nature's covering for land too poor to grow grass; and on stone walls, rocks, and similar places, the moss appears for simply the same reason—it is a covering preparatory to the production of more nutrient material.

Rushes and similar plants, due to the prevalence of stagnant water, are to be disposed of in another way, namely, by proper and efficient drainage.

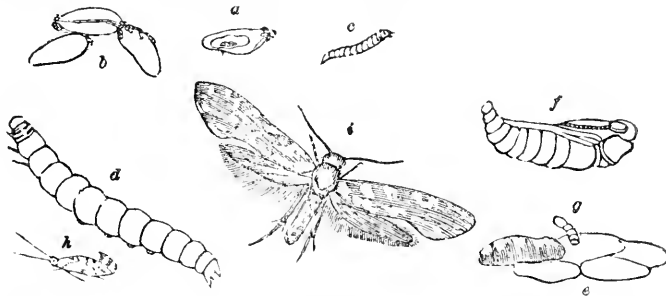
But a ready mode of transferring pasture from one field to another has been adopted, and not without success. A field, properly leveled and prepared, has had a cover of turf or sods, pared some two-and-a-half inches thick, and so placed upon it, at a cost not exceeding fifty shillings per acre, including cartage; this has been slightly manured and well rolled, an advantage to the turf, and a rapid accession of permanent grass pasture to the arable. This is a mode far preferable to that of inoculation. Grass will be had at a much earlier period, and, if well followed up by dressings of manure, it will soon become a pasture as permanent in appearance as if it had been lying in that state for ages. In fact, it will have acquired the age of its surface.

For grass-land, it is not always necessary to apply farm-yard manure. Guano will have the most powerful and speedy effects on a pasture, if applied before rain. If that does not pretty rapidly follow, there will be great loss by the application. Bones produce a wonderful effect on the Cheshire pasture—denuded of their phosphorus by the cheese sold away from the farms, which it so supplies; but the majority of clay grass-lands will require the bones to be dissolved before any very striking effect can be produced. The light land grass—the greatest difficulty of all, which the Scotchman would say ought always to be converted into arable, and only allowed to lay down for two or three years—may be dressed with a compost of clay and dissolved bones with the greatest advantage. If the house bones of most of our farmers were from time to time to be put in an earthenware jar half full of sulphuric acid, and this poured from time to time on a heap of clay, a vast quantity of the most valuable manure would be made from materials at present wasted.

—London Magazine.

TINEA GRANELLA—GRAIN MOTH.

This insect is called in English works "The Mottled Woolen Moth," and has received the scientific appellation of *Tinea granella*. The caterpillars do incredible injury to grain stored in barns and ware-houses, after it is separated from the straw and chaff. From April till August the little moth is found in granaries, resting by day on the walls and beams, and flying about only at night, unless disturbed. Soon after they have escaped from the chrysalis the sexes pair, and the female lays one or two eggs on each grain of wheat, until she has deposited thirty or more; they are so minute as to be invisible without a magnifying glass, when they appear of an oval shape, and of a yellowish-white color.



DESCRIPTION OF PLATE.—*a*, A grain of wheat opened to show the cavity in which the caterpillar of *Tinea granella* had fed, with the excrement at the apex. *b*, Several grains united by the same caterpillar. *c*, The caterpillar of *Tinea granella*. *d*, The same magnified. *e*, A group of the cocoons spun by the same. *f*, The chrysalis taken out of a cocoon, magnified. *g*, A chrysalis sticking in a cocoon after the moth was hatched. *h*, *Tinea granella* at rest. *i*, The same flying and magnified.

The small white worms hatch in a few days, and immediately penetrate the grain, carefully closing up the aperture with their roundish white excrement, which is held together by a fine web. Fig. *a* represents this web, and the excrement attached at the apex of the grain. When a single grain is not sufficient for its nourishment, the larva unites a second grain to the first by the same web; and by repeating the process joins several together, and thereby forms a secure habitation, which at the same time is well stored with provisions. When the maggots are almost full-grown, they often leave their lodgings in great numbers, running over the grain and covering the whole surface so effectually with a thick web of a grayish-white color, that scarcely a grain of wheat is visible. In August or September the caterpillars arrive at maturity, when they leave the grain heaps and search for a safe and suitable place to undergo their metamorphosis, and at this period they are most observed. They form their cocoons by gnawing the wood and working it up into their web, in any chink in the floor, walls, or roof, which are frequently swarming with them; and these cocoons, being of the form and size of a grain of wheat, look like one dusted over. It there remains in its snug and warm berth in the larva state through the winter, and does not change to a chrysalis until the month of March following, and in a backward spring not until May. The pupa is of a deep chestnut color, the abdominal rings being of a shining yellow tint, and the apex is furnished with two little points. In two or three weeks after they have assumed the pupa form the moth hatches, and, it is said, with almost perfect wings at its birth, leaving the empty chrysalis sticking half out of the cocoon.

It is difficult to guard against the introduction of this moth, since it deposits its eggs on the sheaves in the field, as well as after the grain is stored and threshed out, and will feed as freely upon barley, rye, and oats, as upon wheat. It is, however, not difficult to suggest palliatives, if not remedies; and if the following rules are strictly observed, few persons will suffer from the inroads of this insect:

1. Before replenishing an empty granary or loft, the floor should be well scoured with hot water and soft soap, or lees, if practicable; if not, it must be well brushed with a fine stiff broom, to clean out the chinks or fissures between the boards. The roof and beams should be whitewashed, as well as the walls, with lime-water used as hot as possible; and these operations would have greater effect if performed in the winter months. Sprinkling the floor with salt dissolved in strong vinegar has been recommended, and might be very serviceable.

2. In granaries already stored, where the caterpillars are at work, whatever method for their destruction is resorted to, by heat, ventilation, or otherwise, it must be employed during the summer, from the end of May to the end of August, occasionally a month earlier or later, as during the winter these larvæ are not to be found among the grain heaps; they retire in the autumn to conceal themselves in fissures and cracks in the floors and walls, to form their cocoons.

3d. The moths themselves may be destroyed in spring by burning lamps or gas lights in dark granaries; they being attracted by the flame, fly into it, and are sufficiently injured to prevent their doing further mischief; and at the same season the grain should be frequently turned over to destroy the eggs and disturb the young larvæ. All cracks and broken places in the walls and roof should be stopped with plaster of Paris, or cement, and the apertures for ventilation should be covered with a wire gauze.

Kiln-drying, at about 112° Fahrenheit, will kill the larvæ when they are feeding. *Cold currents of air*, introduced by small windows near the floor, thus keeping up an artificial cold atmosphere, are very effectual. *Burning sulphur*, and creating sulphuric acid in a close apartment, will kill the moths.

A small heap of grain left undisturbed, frequently turning over the rest, is a sure and simple plan of catching the larvæ, where they can easily be destroyed by pouring on boiling water.

When diseased grain is used for seed, it should be sown deep to prevent the moths from escaping through the soil. It is also desirable to cut the grain in good season, for if it is suffered to remain too long in the field the moths are enabled to lay their eggs in the ears, and are thus introduced into the barn.

CURE FOR GLANDERS.—In the August number of the *Farmer*, for the present year, is a dangerous note published, entitled "Cure for Glanders." I, as a veterinarian, solicit space in your columns to discuss the subject; and while I endeavor to do so, I shall quote from PERCIVAL, YOUBERT, and other authors of less note. From the statement of the case, I am convinced that it was strangles (instead of glanders), which I believe, from my own observation, to be contagious. According to the above authors, the strangles are often confounded with glanders; and yet they do not believe it is infectious, although they furnish no proof to the contrary. I never knew a horse to take such an acute form of glanders as that described in the text, nor does it agree with Mr. YOUBERT'S description.

Mr. WILLIAMS says the glanders are always attended with a swelling of the kernels, or glands, under the jaws; but in every other respect the horse is healthy and sound, till the disease has continued a long time. We shall find that Mr. McS. not only erred in the kind of disease, but also in the location of glanders. He says: "Why, it is diseased glands—the little vessels that bring the saliva to the mouth and throat are diseased, stopped up, and must be opened." Mr. YOUBERT says it is inflammation, whether specific or common, of the lining membrane of the nose, possibly for months, and even for years, confined to that membrane, and even to a portion of it; the health and the usefulness of the animal not being in the slightest degree impaired. Then, from some unknown cause, not a new but a more intense action is set up; the inflammation more speedily runs its course, and the membrane becomes ulcerated; the inflammation spreads on either side down the septum, and the ulceration at length assumes that peculiar chancreous form which characterizes inflammation of the absorbents. Even when the discharge becomes gluey, and some time after chancres have appeared, the horse is apparently well. But I admit that in some cases it terminates more speedily than in others.

We learn by *materia medica* that tobacco has eight medical qualities, viz: emetic, cathartic, sudorific, expectorant, narcotic, sialagogue, diuretic, and anti-spasmodic. Besides these, there is a volatile poisonous base, called nicotine, one drop of which is said to kill a large dog. And it may be that Mr. McS. has found a new and more speedy remedy in tobacco for the cure of strangles, which he deserves credit for. Mr. YOUATT says that tobacco in the hands of a skillful veterinarian may be advantageously employed in cases of extreme costiveness or dangerous cholera, but should never be permitted to be used as an external application for the cure of mange, or an internal medicine to promote a fine coat. Men who undertake to do any thing with a glandered horse, should be very careful to examine their hands and face, to see that there are no cuts or sores on them, for the glanders have in this way been inoculated into the human system, causing some of the most horrible and frightful deaths. It would be well, however, to state that tobacco fermentation should not be used in strangles after pus is formed, or suppuration taken place, or after the abscess has broken, which would only have a tendency to aggravate the disease, instead of doing any good.

It appears that the first stage of glanders is confined for a length of time to the pituitary membrane of the nose, and is characterized by a thin, watery discharge. Then the second stage begins: the glands begin to get affected, the discharge becomes more and thicker, the glands enlarge, and so on to the third stage, when the swelling of the glands begins to subside, farey sets in, the nasal discharge becomes darker, ulcerations show themselves along the veins absorbent and large lymphatics, and perhaps extend on to the lungs, and entirely obliterate them. The horse dies, as it were, almost a decomposed mass. In Mr. YOUATT's concluding remarks he says: "Worse than all, the man who attends on that horse is in danger. The cases are now becoming far too numerous in which the groom or the veterinary surgeon attending on glandered horses becomes infected, and in the majority of cases dies." S. A. ELLIS.—*Roscoe, Coshocton County, Ohio.*

FRAUDS IN WOOLEN CLOTH.—It is not generally known that hundreds, and I might say thousands, of bales of the cast off rags of paupers have been imported and worked up in woolen cloth to sell to the American people. These rags, as you told us not long since, were formerly used as manure. Imported rags, all wool, bring seven cents per pound in New York market; rags half cotton and half wool, three to four cents per pound. Now, who among your readers, if they knew it, would wear a garment made in part of wool of the worst description, and part of the lousy rags of beggars? Who would, if they knew it, wear woolen clothes fit only for manure? All the low priced men's wear is of this description of cloth, and may be easily detected by putting one's hand upon it; it feels as rough as a horse-card. There is no occasion for manufacturers to work up old rags in this country, where wool is so plenty; but they will continue to make it as long as they can humbug, sell, and fleece the people out of their money. This counterfeit cloth is made of imported rags, and imported wool that cost but little more than the rags. The frauds the manufacturers commit upon the unsuspecting laboring men throws the sheep speculation entirely in the shade.

I reluctantly acknowledge the general laxity of trading morals, and the little value set upon virtuous actions; and it is astonishing how few persons among the laboring classes deeply interested in agricultural prosperity, take the trouble to read, think, and act upon broad and sound principles. A MICHIGAN FARMER.

BURNING LIME.—A new mode of burning lime appeared in your September number. With us it is not a new thing; it has been thoroughly tried and found to be a failure. By the time Mr. HALE has used his lime kiln one season, he will change his mind as to its utility. It will do all that he says as long as the arch will stand. The difficulty is, that as soon as the stone in the kiln is heated it expands with a force that can not be restrained. The arch, or roof, resting upon the top of the kiln, must by the expansion and contraction of the heated stones very soon "cave in." The arch, with its necessary chimneys, is very heavy, and like all arches needs and must have a good foundation; and a lime kiln is any thing but a good foundation. I write this as a caution to the unexperienced. C. W.—*Lake Grove.*

TO CLEAN CHESN FROM WHEAT.—Take all the screens out, except the lower one; let the wheat fall pretty well back; blow hard, and if the wheat goes over too much, elevate the hind end of the mill a little, and it may be entirely cleaned without difficulty, no matter how foul. R. WILLET.—*Cambria, N. Y.*

THE present harvest has shown me the necessity of getting a harvesting machine for cutting my wheat next season. My wheat was the first sowing this season, consequently shorter; but Mr. HARDY, a neighbor, has a crop averaging six and seven feet high, very thick, and heavy headed. It is supposed it will yield sixty bushels to the acre, and he says it is almost impossible to cut it with a cradle. If you will send me a description of the best header and its weight, the cost, and cost of transportation from your place or any eastern seaport to Scotsburgh or Portland, Oregon, I will lay your paper before the citizens of Douglass county, and get all the subscribers I can to it. Please let me know the weight and expense of getting a wheat-drill here.

We have a pleasant, healthy country, and crops look remarkably well. I killed a steer a year old last March that weighed over five hundred pounds, and sold it for one hundred dollars at eighteen and twenty cents per pound.

The best time for sowing winter wheat is the last of April and first of May. It grows some in the spring, and does not stalk; it remains without stems until fall rains commence—then it grows all winter, and is harvested the last of May or first of June, although wheat can be sown every day of the year and produce a crop. The best way of manuring land is by making boards out of cedar timber, it being very light, inclosing the land, rearing stock, and turning them off the prairie on to the land in summer and fall at night, and turning them out in the morning to graze through the day. I have often heard it remarked here by men who were in the habit of stall-feeding cattle in the States, that they never were able to produce by feeding, currying, and rubbing, so fine, fat, sleek-coated, soft-haired cattle, as are produced here by Nature, or Nature's food, without the assistant hand of man. ALFRED B. COLLYER.—*Winchester, Douglass county, Oregon.*

CULTURE OF BEES.—I have long wished to see the culture of bees carried on in a more economical manner than is common in many parts of this country. I have heard something and read a little about a non-swarming bee hive being used in some places; I have also seen a diagram of one, but no explanation was given of it. I have long considered it a cruel and inhuman practice, after the harmless, industrious little insects have labored so diligently all the season, and prepared a good and ample supply of food against the day of want, that their town should be besieged, themselves murdered, and their store-houses plundered, to satisfy the lustful appetites of men.

Now, since it is a well known fact that a prosperous swarm of bees will in one season accumulate far more food than they require for the winter, can not an edifice be constructed so as to preserve the lives of the bees, and also to supply their proprietor with plenty of honey? I have no doubt but that the project has been tested, but whether it has proved satisfactory or not I have not yet been able to learn, as it has not, to my knowledge, been tried in this section of the country.

Will you, or any of your readers, please to furnish me with the desired information through the medium of the *Farmer*, whether such a building can be made as will be profitable to farmers who keep from five to twelve or fifteen hives of bees? and, if practicable, give a draft and description of it. I think this information will not only interest myself, but a good portion of the farming community. A READER.—*Romney, N. Y.*

EMIGRATION OF IRISH LABORERS.—The *Mark Lane Express* observes: "The great bulk of our emigrants still go to America, where the opening up of her boundless regions by railroads—the growth of large cities affording a sure market for produce—and the progress of the arts and sciences generally, confer upon the new settler many advantages which previously were not enjoyed. The hardships which were once experienced are no longer heard of in the New World; so that colonization has at length become, as it were, civilized. Indeed, such is the degree of progress, that our transatlantic cousins are entering into competition with us, at our annual meetings, with their reaping machines, churns, &c., and bidding fair to leave us in the distance!"

TO KEEP WORMS OUT OF BEE HIVES.—In the July number of the *Genesee Farmer*, on page 224, a correspondent asks for the "best method to keep worms out of common box bee hives." I use that kind of hive, and no other. I set them on small round stones, one under each corner of the hive, from one-half to one inch in diameter. This gives the bees room, and they will drive off the millars, which lay their eggs in small crevices. I have never been troubled with them since I adopted this method. RICHARD WILLET.—*Cambria, N. Y.*

Horticultural Department.

CONDUCTED BY P. BARRY.

GOOD CULTURE.

IN our recent meetings with fruit-growers we have observed that *high culture* is more thought of and spoken of than formerly, and that people begin to take as much pleasure in exhibiting a few varieties of remarkable fine growth and handsome appearance as they have done in showing a large collection, the chief merit of which was its variety. We are glad to see this, and we are glad that societies, in offering premiums to promote improvement in fruit-culture, are beginning to shape their prizes so as to encourage this. When our amateur cultivators all over the country withdraw their attention from the exciting pursuit of novelties, and concentrate it upon the culture and management of small, well chosen collections, we may expect to see some real advancement made, but not until then. We would much rather pay a visit to a fruit garden in which we could find ten or a dozen varieties of the very best fruits under good management, the trees skillfully and tastefully trained, in a vigorous and luxuriant state of growth, with fruit in the highest state of perfection, than to find fifty varieties scattered about in all corners without system or order, stunted in growth and half covered with weeds. One well-grown tree, or one dish of superior specimens of any fine fruit, gives more satisfaction, elicits more admiration, and confers, in our opinion, more honor on the proprietor than fifty neglected trees or shabby dishes of fruit. If we listen to the remarks of visitors at an exhibition, when the mass judge of things just as they are, we will be convinced of the truth of this. To collect *new* varieties is an easy matter, if one has money enough, and ground enough; but money, unless in the employment of skill, will not cultivate trees. It requires the exercise of constant care and skillful treatment; and skill is only obtained by experience, observation, and industrious research. This is what we want now in this country—how to feed and train trees in order to bring them to the highest possible development, both of beauty and fertility. We really know very little yet of what can and may be done in the growth of fruits. Occasionally we see a few specimens that give us an inkling on this subject; but the instances in which such specimens are brought to light are like angels visits, "few and far between."

At the late Monroe County Agricultural and Horticultural Exhibition there was a capital show of fruits, taken as a whole, for the season of the year, the first day of October. They were generally fair and handsome, but among them we found a few articles that set us thinking. A dish of *Sheldon* pears, of extraordinary size and fairness, nearly twice as large as those, even who know that variety well, supposed it ever grew; they took us and every one else by surprise, and gave us to know what the *Sheldon* may be. These specimens were exhibited by the Hon. L. A. WARD, with whom this variety has been for years an especial favorite. We know nothing about the circumstances of their culture, but we intend to ascertain if we can. This was one of the most interesting items we have found at the shows of 1853. We also saw, presented by H. P. NORRIS, Esq., of Brockport, extraordinary specimens of *Glout Morceau*, *Henry IV.*, and some others. The *Glout Morceau* were nearly as large again as we usually see them, smooth and perfect. *Henry IV.*, which is generally a small pear, were as large as fair specimens of *Viraglieu*. Mr. NORRIS is a good cultivator, and we presume the trees on which these specimens grew had nothing more than his usual care and treatment.

Orchardists who are growing fruits for market must reform their practice in this

respect. Full one-half of the orchard fruits produced in this country are unmarketable on account of the defective culture and management of the trees. A few individuals who do give their business thorough attention, realize profits that are incredible to careless growers. One man sells his fruits readily for three or four times what another can obtain with difficulty. No other branch of rural affairs whatever offers such profits, and at the same time such pleasures, as the cultivation of fruits if done properly; a careless, half-way system will, as in all other pursuits, be unsatisfactory. A multitude of persons have embarked in fruit-culture with a view to profit, apparently under the belief that trees can take care of themselves, or pretty much so, until they have attained a productive state. They are planted and left there; the ground cropped and cultivated as though no trees were there, and no one who knows what a tree is, or what it requires, is appointed to look after them. At the end of a few years, about the time that an income was expected, we hear a grumbling about the trees not doing well, &c., &c. People must know that it is useless to plant large orchards without having competent persons whose special business it will be to cultivate and take care of them. We must not be told that it will not pay, for we know it will pay, and we know that it will not pay to neglect them. Every fruit tree requires certain attention nearly every month in the year. It may be trifling, to be sure, but good culture is made up of a series of operations in themselves but apparent trifles.

HORTICULTURAL DEPARTMENT OF THE STATE FAIR AT SARATOGA.

THE department of horticulture at Saratoga suffered many and serious inconveniences: *First*, no timely arrangements were made, all being postponed till the day on which the Fair was announced to open. *Second*, the tent which belongs to that department failed to arrive; and *third and worst of all*, it rained during all of the first day. This was a gloomy, melancholy day among the exhibitors who had, many of them, traveled a long journey, and were unable to unpack their fruits and flowers, although aware that they were suffering seriously. The second day, however, shown out bright and warm. Another tent was substituted for the missing one, and was soon raised. Then the eager exhibitors went to work, and in less than an hour the entire ranges of shelves were covered with fruits and flowers. Committees of arrangements, including ladies, had some embellishments ready made, and they sprung up in the center of the tent as if by magic. Still, there were large contributions of both fruits and flowers for which no place could be found, and the general arrangement was hurried and defective. But after all, the show was a good one—in many respects one of the best the Society has yet made.

The display of fruit was exceedingly interesting and instructive. Visitors, as they passed around, seemed to be at once surprised and delighted. It afforded very gratifying evidence of the progress we are making in fruit culture. Many of the collections were rare and valuable, the specimens unusually fine, and, with a few exceptions, accurately named and tastefully exhibited. Among amateurs, the collections of D. T. VAIL, Esq., of Troy, had no rival. It embraced some eighty varieties of pears, remarkably well grown, and including many of the finest new sorts—such as *Duchesse d'Orleans*, *Beurre d'Anjou*, *Beurre Superfin*, &c. Probably no other amateur cultivator in this State could bring forward such a collection.

The nurserymen made a very spirited and creditable display. Messrs. HOVEY, & Co., of Boston, sent a fine collection of 150 varieties of pears. This, we believe, was the only foreign contribution. Messrs. A. SAUL & Co., of Newburgh; WILSON, THORBURN, & TELLER, of Albany; THORP, SMITH, HANCHETT & Co., of Syracuse; JOHN MORSE, of

Cayuga; T. C. MAXWELL & Co., of Geneva; G. H. CHERRY & Co., A. FROST & Co., and ELLWANGER & BARRY, of Rochester; all contributed largely. JOHN J. THOMAS, of Macedon, presented a handsome collection. Among his pears we observed a dish of *Washington*—very beautiful—the finest we have seen. N. & E. S. HAYWARD, of Brighton, as usual, made a fine display of apples, peaches, and grapes.

There was a strong competition for the premiums offered for select assortments—such as the best 20, 12, 6, &c., of the various fruits. For the results we must await the committee's report.

Of peaches there were few. Mr. MORSE, of Cayuga, and the Messrs. HAYWARD, of Brighton, had small collections. It was also too late for plums, but Mr. E. DORR, of Albany, had a nice collection of 12 or 14 varieties. Mr. BENNETT, of Mechanicsville, a small collection, and ELLWANGER & BARRY some 14 varieties.

In the way of flowers, Mechanicsville made the most numerous contributions. Mrs. E. L. E. SMITH, of that place, presented a very handsome named collection of Dahlias, including some fine new sorts. Mrs. T. MABBETT, Mrs. SAMUEL LEWIS, Mrs. J. M. SMITH, Mrs. GEO. WARREN, Mrs. P. BENNETT, all of Mechanicsville, contributed flowers, bouquets, and floral ornaments in profusion. WILLIAM NEWCOMB made a showy display of Asters.

Among nurserymen the largest contributors were JONATHAN BATTY, of Keesville; JAMES WILSON, of Albany; and Messrs. FROST & Co., and ELLWANGER & BARRY, of Rochester.

The best collections of Roses, Verbenas, &c., were from a distance, and had all suffered much from carriage—besides, there was not space enough to arrange them to appear well. We regretted to see good things crowded off the stands to make way for mere rubbish, and to see valuable space occupied with objects *mis*-called floral ornaments, anything but ornamental.

Of vegetables there were a few small collections. The best were from THEODORE BACKUS, of Rochester; N. CULVER, of Wayne county; and P. REILLY, gardener to J. B. FINLEY, Esq., of Saratoga. Mr. CROSSMAN, of Rochester, sent a good collection, but they never reached the show grounds.

We must say for the Superintendent of the Floral tent, Mr. A. F. CHATFIELD, of Albany, that he did all in his power for the convenience of exhibitors, and the general good of exhibitors. The fault was not his that arrangements were not more satisfactory.

THE ROSY HISPA AND THE DROP-WORM.*

In the latter part of the month of August we were traveling through Jefferson county, N. Y., and observed through the whole country that the Basswood trees, which are very abundant in that part of the country, looked as brown and dry as though some terrible blight had struck them all dead. On examination we found this appearance was owing to the leaves being all devoured, leaving but the skeleton of fibres; not a leaf had escaped throughout the immense forests which we passed on a journey of some thirty miles or more. The insects had mostly disappeared, but after a long and eager search we found one tree, the leaves of which, though reduced to skeletons, were yet thickly covered with the insects. We immediately sent specimens to Prof. HARRIS, requesting such information as he possessed respecting them, and he has very kindly complied. Insects that appear in such swarms, and commit such havoc, should be known. The other insect, the "Drop-worm," described by Prof. HARRIS below, was sent us from Tennessee by Mr. ROBERT MESTON.

* From the Horticulturist for October.

Among the leaf-beetles that are injurious to vegetation are those belonging to the tribe called *HISPAE*. Such are the little insects which you lately sent me, which you found to have destroyed the foliage of the Basswood, or American Linden (*Tilia Americana*), in Jefferson county, N. Y. A variety of the same insect attacks the leaves of the White Oak, and occasionally those of the Apple tree, also. These leaf-beetles are described in the second edition of my Treatise, pp. 105 to 107; and a more full account of them, with figures of the grub and chrysalis, will be found in the first volume of the *Boston Journal of Natural History*, pp. 141 to 151.

The day before your letter came to hand, I found one of these beetles, which had just emerged from a leaf of the Linden, and I saw several other leaves on the same tree that had been eaten by insects of this kind. In the summer of 1851 the White Oaks in some parts of Long Island suffered very much from their attacks; and, with this communication, you will receive one of the leaves, showing in what way and to what extent they were affected.*

Your insect is the Rosy Hispa, or *Hispa rosea*, of WEBER, otherwise called *Hispa quadrata* by FABRICIUS, and *Hispa marginata* by SAY. The accompanying rude and very magnified sketch will give an idea of the form of this pretty leaf-beetle, and the line at the side of it indicates its natural size, which rarely exceeds one-fifth of an inch in length. Its body is light red above, ornamented with short blood-red lines, and is mostly blackish beneath. The antennæ are black, and the legs are reddish-yellow. The thorax is rough with small indentations, or punctures, as they are called; the wing-covers are notched around the outer edges, have raised ribs upon them, and deep punctures in the intervals. The Rosy Hispa may be found abundantly in May and June on the leaves of the Shad-bush, or *Amelanchier Canadensis*, and on other shrubs of the same family, the leaves of which it devours. The variety which inhabits the Oak differs in being of a reddish yellow color, ornamented with blackish-red lines. This difference may be occasioned by its food, or by other causes of an accidental nature.



The female Hispa deposits her eggs, for the most part, singly, on the upper surface of the leaves. These eggs are glued fast to the leaves, and are covered with rough, blackish crust. The grubs, hatched from the eggs, immediately penetrate into the pulpy substance of the leaf, which they devour, leaving the cuticle, or skin of the leaf, both above and beneath, untouched. The part of the leaf thus, as it were, undermined, becomes dry and brown, and through the semi-transparent cuticle, when held between the eye and the light, the grub may be seen in its burrow. The grub comes to its growth toward the end of July, and then measures from one-fifth to one-quarter of an inch in length. It is somewhat flattened, and tapers toward the hinder extremity. Its color is yellowish-white, except the head, the first segment, and the tail, which are blackish. It has six legs, a pair beneath the first, second, and third segments; and on each of the remaining segments, both above and beneath, except the last, there is a transverse horny spot, which is rough, like a rasp. The sides of these segments, also, are prominent, and are surmounted each with a little brownish tubercle, or wart. Early in August the grub is transformed to a chrysalis within its retreat. The chrysalis, which is whitish at first, finally becomes brown. Like the grub, the sides of its body are prominent, and there are transverse rasps on the back and belly. In about one week afterward the insect casts off its pupa skin, and comes out a fully formed beetle, which has only to force a passage through the thin cuticle of the leaf in order to escape into the open air. The insect probably passes the winter in the beetle form in some place of concealment. Such is briefly a history of the transformations of this little *Hispa*.

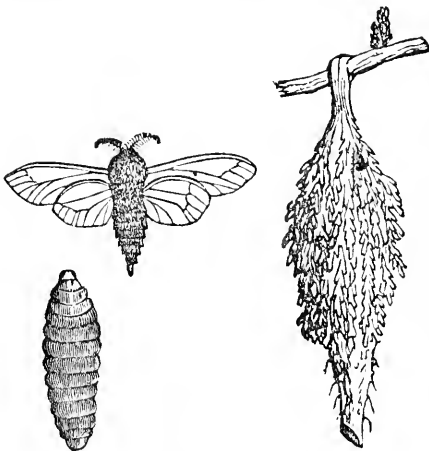
The caterpillars, which, together with their cocoons, you sent to me, with the information that they were very destructive to the Arbor Vitæ, Cedar, and other resinous plants in Tennessee, are drop-worms, or basket-worms, referred to on page 319 of my Treatise. To their destructive powers I can testify from my own sorrowful experience; a fine Arbor Vitæ tree, on which I had placed, in May, 1850, some of the cocoons received during the previous autumn from Philadelphia, not having yet recovered from the effects of the ravages of the insects, though the latter were limited to one summer. These drop-worms are exceedingly curious and interesting in all their habits and transformations, the history of which might form the subject of a long memoir. But neither time nor space will permit me to offer any more than a very short sketch of their history, which is drawn up from notes written in the years 1849 and 1850, when I had a colony of the living insects in keeping.

These insects inhabit the Swamp Cedar (*Cypressus Thyoides*), Arbor Vitæ (*Thuja occidentalis*), Larch (*Larix Americana*), and Hemlock (*Abies Canadensis*), with other resinous trees; but occasionally they attack the Linden, the Maple, and even fruit trees. They are common in the Middle and Southern States, and probably most of the Western States also; but hitherto they have not been discovered in New England. They belong to Mr. GULDING's American genus *Oiketicus*; and, as they do not seem to have received a scientific name, I shall venture to give them that of *Oiketicus coniferarum*, from their preference to the trees of the cone-bearing tribe. The species is probably the same as the one noticed by my lamented friend, the late Mr. EDWARD DOUBLEDAY, in *Newman's Entomologist*, No. 7, pp. 97-98; but the male insect does not agree with the figure, copied from one

* Quite similar to the manner in which the Basswood leaves are eaten.—Ed.

of ABBOT'S drawings in the same work, nor does it correspond any better to GULDING'S figure of *Oiketicus McCayi*, though about the same size.

As soon as the drop-worms are hatched, they make and conceal themselves in little silken cases, open at each end, and covered externally with bits of leaves, twigs, &c. These cases are enlarged, as the insect increases in size, by the addition of more materials within and without, and finally become oblong oval pods, with long somewhat cylindrical extremities. The inhabitant carries its house about on its back, as a snail does its shell, when it is moving and feeding; fastens it by a few threads when it wishes to rest; or lets it drop by a thread when it wishes to descend from one branch to another: hence, in Philadelphia, where these insects are abundant, they have acquired the name of drop-worms. These worms attain their full size by the middle of September, and then fasten the upper end of their cases to a twig of the tree by a strong silken band. The weight of the case, with its elasticity, closes the upper orifice, from which the worm has been accustomed to protrude its head and fore legs when feeding; the insect then turns round within its pod, so as to direct its head toward the lower cylindrical orifice, and thus awaits its change to a chrysalis. The worms which produce the female insects are much larger than those of the males, and there is the same difference in the size of their pods and of their chrysalids. Female worms attain the length of one inch and a half, those of the males only about one inch. The head and fore part of the body are white, spotted with black; the rest of the body is livid or blackish. The first three segments are each provided with a pair of stout jointed claw-like legs. The tail and four intermediate segments are furnished with a pair of very short holders, or prop-legs. The male chrysalis is a little more than six-tenths of an inch long, of a dark brown color, and exhibits the sheaths of the wings, and limbs of the future moth, which escapes from it toward the end of September or early in October, immediately before which the chrysalis forces itself half way out of the lower end of its case. The female chrysalis is nine-tenths of an inch long, or more, of the same color as that of the males, but without any vestige of wing-sheaths or limbs. There is a prominent ridge over the fore part of the body. When the included female is matured, the skin of the chrysalis splits at the ridge, so as to form an opening in the shape of the letter T, and through this opening the approaches of the male moth are made, the female remaining all the while not only enclosed in her pod, but also encased in the skin of the chrysalis. In this skin, also, she lays her numerous eggs, gradually withdrawing her emaciated body as she fills the pupa skin, and finally closing the upper part of the skin with a thick layer of fawn-colored down, stripped from her own body. Having finished her labors, she crawls out of the pod, entirely shriveled up, drops off and dies, or more rarely perishes at the mouth of the pod. She is found to be entirely destitute of wings, and her legs are extremely minute, and resemble little tubercles. The male moth on the contrary, is fully provided with wings and limbs. Its body, which measures rather more than half an inch in length, is covered with long blackish-brown down. Its wings are semi-transparent, and are very scantily clothed with blackish scales, which are thickest on the margins and veins. The white spot, represented by Mr. ABBOT on the fore wings of his figure, is entirely wanting in all the males that I have seen. The antennae are curved at the tips, and are doubly feathered from the base to beyond the middle. The tongue is not visible. The wings expand one inch and one-tenth, or more. The male moths are very impatient of confinement, and keep in constant motion, which renders it very difficult to obtain perfect or unrubbed specimens. The eggs remain secure in the shell of the skin of the female chrysalis, enclosed in the suspended pods, through the winter, and are hatched in the spring when the trees are well clothed with leaves, upon which the little worms, having left the pods, immediately disappear, and each one begins to cover its tender body with a silken and leafy case. The figure represents one



of the pods or cocoons, suspended by a twig, when the insect has prepared for its final transformation; also a male moth, both of the natural size.

THE LATE PROFESSOR ADRIEN DE JUSSIEU.—Advices from Paris mention the decease of this distinguished botanist, upon whom the mantle of his great ancestors may be said to have fallen. Among the most conscientious and exact of systematical writers he also ranked high as a physiologist, as his well known elementary work has shown the world. For many years his health had been delicate, and of late had been deplorable. By his decease a vacancy occurs in the President's chair of the French Institute, in that of Professor of Rural Botany in the *Jardin des Plantes* (which, it is said, will not be filled up), and among the twenty foreign members of the Horticultural Society of London.—*J. L., in London Gardeners' Chronicle.*

Editor's Table.

THE STATE FAIRS.—The State Fairs the present year have generally been well attended, and, as a general thing, the exhibitions have not been as good as in former years. This was the case in Ohio and in this State. The almost incessant rain did much to injure the Fairs, especially the Vermont State Fair, which, we learn, was almost a failure in consequence. At the New York Fair at Saratoga the exhibition of stock was excellent, as well as of fruit; but in other respects the Fair did not equal many of its predecessors.

A few fine wool sheep were shown. In quality and numbers, the Fairs at Rochester and Utica were much the best. F. W. DEAN, West Cornwall Vt., exhibited some good Spanish ewes, and a very large Spanish Merino buck. JOSEPH HASWELL, Hoosic, N. Y., also showed some fine ewes of this breed. French Merinos were poorly represented. G. W. MCKEE, Cambridge, Washington county, exhibited three very superior bucks. A two year old, bought of Maj. SANFORD, Vt., was a perfect beauty. A first rate three year old from JEWETT, Vt.; another, a yearling, was a very good sheep. FELIX WEEPEN, Preston Hollow, Albany county, showed a good buck and ewe.

The mutton sheep were well represented—not so many from Canada as in former shows, but from our own State. We are sorry to miss the fine animals of our Canadian brethren, but at the same time we are very glad to see that New York farmers are entering with their usual energy and go-a-headativeness into the breeding of superior mutton sheep.

Of Leicesters, J. A. and S. N. RATBONE showed some very fine animals. HUNGERFORD and BRODIE, Jefferson county, were the largest exhibitors. Seven yearling ewes, recently imported, are excellent, as are also the six two year old ewes which took the first prize as yearlings last year. Their imported buck did not please us, but the yearling bucks are first rate—one of them is very superior. One fat ewe—a beauty—was sold for \$30 to go to Kentucky. One of the buck lambs shown bids fair to be a fine fellow.

South-Downs were shown in fine perfection. L. G. MORRIS, Mt. Fordham, N. Y., exhibited a recently imported buck from JONAS WEBB, which for one of his stock, struck us as rather coarse, but it had a corresponding degree of strength and masculinity, and is on the whole an animal

of rare merit. Z. B. WAKEMAN, of Herkimer, exhibited a large number of superior South-Downs.

There were but seven animals of the Cotswold and New Oxfordshire breeds exhibited, at least that we saw. E. GAZLEY, Clinton, showed four splendid bucks of the Cotswold breed. WYANT and YOUNGHAMS, Sand Lake, Rensselaer county, exhibited three New Oxfordshire sheep, which we took for good Cotswolds.

Swine.—In this department the exhibition has never been excelled. L. G. MORRIS showed some splendid Berkshires; quite a number of FISHER HOBBS' Black Essex, and some very superior Suffolks. Those who have a prejudice against color will not like the Essex so well as the Suffolks or Middlesex; they are nevertheless a remarkable breed, fattening with great rapidity and maturing early. Suffolks were well and largely represented. This breed evidently stands high in public estimation. Beside the fine animals of L. G. MORRIS, NELSON RICHARDS, Vergennes, Vt., showed a superior two year old boar of the Stiekney breed. LE ROY MOWRY, Union Village, Washington county, and ZOAR RIDER, Washington county, exhibited good two year old boars.—Other exhibitors deserve mention, but our space forbids. SETH WHALEN, West Milton, Saratoga county, exhibited nine very good shoats of the White Leicester breed. Z. B. WAKEMAN, Herkimer, showed a boar, a cross of the celebrated Leicester and Berkshire breeds, of enormous size. B. DAVIS, Vernon, also exhibited a very good six months old boar and sow. There were no Chinese, Middlesex, or Yorkshire pigs exhibited.

Horses.—Owing to the number of Black Hawks brought from Vermont and other States, the show of horses was the best ever witnessed in this State. The old original Black Hawk, twenty-two years old, was on the ground, as active and sprightly and at the same time more compact and powerful than many of his colts. This breed, unsurpassed in the world, is exposed to deterioration from the go-a-head tendencies of the age. The mares and colts were a sorry set. Many mares were exhibited that had evidently been selected as breeders, because they were good for nothing else. We suppose the object of the exhibitors was to show how good a colt a poor mare might be made to produce.

Cattle.—The show of Short-horns, though not large, was never so good in quality at any previous Fair. MORRIS and BECAR, of New York, exhibited twenty-eight head. Their recently imported four year old bull, "Balco" (not shown for a premium), is one of the finest animals we ever saw. Many of the Short-horns exhibited by the same gentlemen are bad in the crop—especially is this true of the "Marquis of Carribus." "Balco," "Songstress," "Beauty," and other recently imported animals will do much to correct this deficiency. GEO. VAIL showed five head—for sale. E. J. ALDEN, Boston, showed a very good three year old bull. DAVID CALKINS, China, Wyoming county, exhibited a very good four year old bull. Mr. WM. BULLOCK, Bethlehem, Albany county, showed some fair animals. WOOD, CONVERSE, & Co., Woodville, Jefferson county, showed a first rate four year old bull.

Devons were not so well or so numerous represented as at Rochester. There were, however, some splendid animals exhibited. Those of W. G. FAILE, West Farms, and of the Messrs. WAINWRIGHT, Rhinebeck, particularly pleased us. L. G. MORRIS had some very good animals. J. B. TUCKERMAN, Riehfield, Otsego county, showed a very good two year old bull. GEO. VAIL, Troy, showed some good animals, but not quite what we should expect from so celebrated and skillful a breeder.

The largest breeder of Herefords in the State, WM. H. SOTHAM, Piffard, Livingston county, did not exhibit in consequence of the points of excellence adopted by the Society. Nevertheless there was a good show, indicating that this breed is looking up. E. CORNING, Jr., Albany, showed fourteen very superior animals—a three year old bull, a yearling bull, and two cows particularly pleased us. REMINGTON & BOWEN, Sennett, Cayuga county, exhibited some first rate animals, bought of Mr. SOTHAM.

For the shambles and the dairy the Ayrshire breed is unsurpassed, yet it was poorly represented. E. P. PRENTICE, Albany, and HUNGERFORD & BOBIE, Jefferson county, were about the only exhibitors. The animals of Mr. PRENTICE are well known—they have few superiors. The other gentlemen showed a two year old bull, an imported and very superior animal, and also a very pretty heifer, with the milking points well developed.

In grade animals there was rather a meager show. There was, however, some very fair animals exhibited. There was a tolerably good herd of fat cattle from Kentucky on the ground.—

Working oxen were well represented, and what is better were *well trained*. ELON SHELDON, Sennett, showed fourteen yoke.

AGRICULTURAL FAIRS IN MASSACHUSETTS.—So far as our observations have extended, and we have witnessed agricultural exhibitions in a number of States, Massachusetts farmers excel all others in the art and skill with which they manage these rural festivals. With them a Fair is anything but *fair* without a good public dinner, at which farmers and their wives, sons and daughters, sit down by hundreds at several tables in a magnificent hall, where food for the body and food for the mind are served up in profusion, and all are filled, joyous, instructed, and happy. This practice has a most auspicious influence on the family circle. It brings fathers, mothers, brothers, and sisters together from all parts of a county, all of whom are polished, to a certain extent, by this social attrition, which is too much denied to the comparatively isolated families in rural districts. They have very few holidays, and fewer social advantages than fall to the lot of the residents of villages and cities: hence it is eminently wise and fitting that our annual Fairs should be made schools for social improvement, where new and valuable acquaintances may be formed, old friendships rejuvenated, and all sympathise more cordially and earnestly with whatever is good in civilized communities. Man should not degrade himself into a mere machine for tilling the ground, with no higher objects in this life than to feed a mortal body, and lay up gold and silver for heirs to dissipate in idleness and extravagance. Cultivation, in its broadest and best sense, needs to be fostered by the owners of American soil. Many a farmer, and many a farmer's wife, have felt the want of that ease, self-possession, and happy polish, which inferior minds often possess by reason of having mingled more in cultivated society. Constant isolation on the farm or elsewhere has an unhappy, an anti-humanising influence on one of the strongest natural functions of the human heart. By nature we are social beings; and this nature needs proper development in all woman-born.

This train of thought and remark has been suggested by attending a County Fair at Greenfield, in Massachusetts, at which every thing of a social and intellectual character excited our admiration. The President of the Society, the Hon. Mr. CUSHMAN, was perfectly at home at the dinner table, where plates were provided for three hundred guests. We took no minutes of

the many good things that were said by Mr. C. and the gentlemen present. All, however, felt happy that so many ladies graced and honored the festival by their presence; while the ladies, in turn, evinced equal pleasure in listening to the spirited and important discussions on rural topics appropriate to the occasion, carried on with animation, and in the most amiable temper. There was no wine or other intoxicating beverage present; and we are confident there was none the less wit on that account. That better and purer spirit than alcohol in any of its forms—the spirit of good feeling and good will among farmers and all others, is what we desire to commend, and thank the men of Massachusetts for their labors to cultivate.

PROVINCIAL FAIR OF CANADA WEST.—This Fair took place at Hamilton October 5th, 6th, 7th, and 8th. There were not so many entries as at Toronto last year, yet, on the whole, it was the best Fair the Society has ever had. The show of Durham and Ayrshire cattle, Leicester sheep, and Yorkshire hogs, was uncommonly large and good. The show of fruit and vegetables was remarkably good, and they were arranged in admirable taste. In implements the show was good, especially of Canadian manufacture. There were many English and Scotch implements, particularly scarifiers, grubbers, subsoil plows, and cultivators. J. RAPALJE & Co., of Rochester, exhibited a very large number of Yankee implements, from thermometer churns to reaping machines. The attendance was unusually large; 20,000 shilling tickets were sold on Thursday.

The crop of wheat has been unusually good in Canada this year, and it is now nearly as high as with us; so that the farmers are enjoying unwonted prosperity, and spent their money during the Fair like princes.

THE SCIENCE OF BEE-CULTURE.—The culture of bees, and the economical production of honey, are objects of considerable interest to many of our readers. To manage bees successfully, one needs an intimate acquaintance with their wants, habits, capabilities, and natural enemies. They suffer mainly from a deficiency of suitable food, from bad hives that subject the colony to all extremes of heat in summer, and cold in winter, and from the depredations of moths, mice, and robber-bees. Independently of the value of pure honey which may be obtained in any desirable quantities, bees deserve our care and study as objects illustrative of industry, frugality, and foresight, in providing

a rich store of delicious food long in advance of its needful consumption.

Mr. LANGSTROTH, of Greenfield, Mass., whose apiary we recently visited, is the most scientific and successful cultivator of this valuable insect we have ever seen. A clergyman of sufficient leisure to make extensive observations, a gentleman of education, and familiar with the best works of European and American authors, he has brought to the task all the devotion, singleness of purpose, and enthusiasm of the genuine naturalist; and, consequently, has produced a Manual on this branch of rural economy alike distinguished for originality of thought and research, and the directness and simplicity of all its teachings. Our numerous duties have not permitted us to study Mr. L.'s book of 384 pages devoted to the elucidation of the natural history of the honey-bee, and the best methods of treating them for profit, as we intend to study it; but we have read enough to warrant us in pronouncing it worthy of a place in every farmer's and gardener's library in the United States. Our opportunities for seeing patent bee hives during four years employment in the Patent office and elsewhere have been ample, and we do not hesitate to give the preference to that of the Rev. Mr. LANGSTROTH over all others. Without cutting or breaking the comb in the least, each comb can be taken out of the hive at any time and not seriously disturb the bees, or affect in the least the honey that remains. Tumblers and larger glass vessels, as we have before seen elsewhere, are filled with honey by the bees by placing them over holes in the tops of the hives, and covering the whole with an outside case. Mr. L. uses double hives—a great advantage, for in winter the space between the two is filled with fine straw, chaff, or rowen hay, which greatly protects the colony from extreme cold. The sides of the inner hive are mostly of glass, which costs only twenty-five cents a hive. By having glass on the top and four sides of the inner hive, one can see the condition of the bees at any time by simply removing the outer box, on all sides except the bottom. Mr. L., however, exhibited to us a curious "observing hive," invented and used by him to study the domestic economy of bees, in which only one piece of comb is formed, and that is extended between two plates of glass, so that the cells in which the common workers, the drones, and queen bees, and the development of these several members of the family, may be witnessed with the utmost satisfaction.

The queen outlives several generations of her offspring, and what is still more remarkable, a single impregnation made at her first maturity

suffices not merely for the 12,000 or 15,000 eggs she may lay for a single new colony, but for ten or more such broods which she may live to give birth to. In addition to ovaria for the bountiful elaboration of eggs, the queen is provided with a seminal sack in which fertilizing atoms derived from the blood of the drone or male are stored up for use during her life time. Female hornets, wasps, and humble-bees begin their labors in the spring without mates.

As the starting point in bee-culture one should study the anatomy and physiology of the insect, and the laws of animal life generally. With this information, instead of starving to death so many colonies in winter for the want of proper protection from cold, they would be wintered safely on half the honey now consumed, and the balance might be sold or used in the family of the apiarian. Nor is it so difficult, on most farms, to provide bee-pastures as one might imagine. White clover blossoms yield the finest honey; and this is an indigenous plant from Maine to Texas. In the best season for collecting honey two thousand swarms kept at one apiary in Germany have all found an abundance of honey. Most Americans have yet to learn how to use the honey bee to the best advantage.

THE HORTICULTURIST AND JOURNAL OF RURAL ART AND RURAL TASTE.—This valuable Horticultural Journal was never better, and never better appreciated than during the present year. Although it may have lost some of that exquisite taste that characterized the writings of the lamented DOWNING, it is far more practical, and consequently more useful, and exactly meets the growing wants of the thousands who are engaged in the culture of fruit. Every page is filled with practical matter, of the utmost importance to fruit growers—its illustrations are beautiful—the paper and printing equal to our best monthlies—and yet, we are sorry to say, some of these monthlies, purchased and read for amusement, circulate by hundreds of thousands, while really valuable and equally beautiful journals, like the *Horticulturist*, only number a few thousands. Farmers, these things ought not to be so, and we speak them to your shame. Let all who cultivate fruit or flowers—all those who design to improve their homes—send for the *Horticulturist*. It merits, and should receive, a large circulation. Edited by P. BARRY. Published by JAMES VICK, Jr., Rochester, N. Y., at \$2 per year. Specimen numbers sent to all who apply by mail. A new volume will commence on the first of January next. Let all who want the *Horticulturist* for next year send in their orders early. See page 358.

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Inquiries and Answers.

(J. RANDALL, Masonville, N. Y.) The shrub of which you sent specimens of the leaves, is the Mountain Sumach (*Rhus copallina*.) It is found in dry, hilly situations in various parts of the United States and Canada.

Chinese Fowls.

FOR SALE, a number of pairs of genuine Black Shanghai Chickens, strongly marked, and embracing all the fine points of Chinese fowls. No one wishing a superior breed of fowls for laying or for the table, will be disappointed by procuring this variety. Also, a few pairs of the celebrated Brahma Pootra stock.

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CHAS. W. SEELYE.

LIVER COMPLAINT.

THE only remedy ever offered to the public that has never failed to cure, when directions are followed, is McLane's Liver Pill. It has been several years before the public, and has been introduced in all sections of the Union. Where it has been used, it has had the most triumphant success, and has actually driven out of use all other medicines. It has been tried under all the different phases of Hepatitis, and has been found equally efficacious in all.

Purchasers will be careful to ask for Dr. McLane's Celebrated Liver Pills, and take none else. There are other Pills, purporting to be Liver Pills, now before the public. Dr. McLane's Liver Pills, also his Celebrated Vermifuge, can now be had at all respectable Drug Stores in the United States and Canada.

Evergreen Trees,

OF the following kinds and sizes, we can supply to Nurserymen and others to a large amount, and at very low prices:

Norway Spruce Fir, from 8 inches to 6 feet.

Black Spruce Fir, from 8 inches to 6 feet.

European Silver Fir, from 6 inches to 4 feet.

Balsam Fir, from 1 foot to 12 feet.

Hemlock, from 1 foot to 4 feet.

Scotch Fir, from 6 inches to 8 feet.

Austrian Pine, from 6 inches to 8 feet.

White Pine, from 1 foot to 12 feet.

American Arbor Vitae, from 1 foot to 5 feet.

Siberian Arbor Vitae, from 6 inches to 4 feet.

Red Cedar, from 1 foot to 7 feet.

Libanon Cedar, from 6 inches to 2 feet.

Those who wish for any of the above-named articles, can learn our exact prices by addressing us, and stating the number they wish to purchase. To large buyers we make a proper discount. Orders received early we can fulfill most perfectly, while if they are late we may not be able to do so well by them. D. S. MANLEY & BROTHER.

Buffalo, October 1, 1853.—24.

PREMIUMS FOR 1854.

The Proprietor of the GENESEE FARMER, encouraged by the liberal support long extended to this journal by its friends and patrons, announces that the FIFTEENTH VOLUME of the present series, to commence in January, 1854, will contain a quarter more reading matter than any of its predecessors, and be otherwise much improved, without any increase in price.

To enlarge the usefulness by extending the circulation of the GENESEE FARMER, the undersigned will pay the following premiums on subscriptions to his next volume:

1. FIFTY DOLLARS, in CASH, to the person who shall procure the largest number of subscribers in any County or District in the United States or Canadas, at the club prices, before the 1st day of April next.
2. FORTY DOLLARS in CASH to the one who shall procure the second largest list as above.
3. THIRTY DOLLARS, in CASH, to the one procuring the third largest list.
4. TWENTY DOLLARS, in CASH, to the one procuring the fourth largest list.
5. TEN DOLLARS, in CASH, to the one procuring the fifth largest list.

In order to reward every one of the friends of the GENESEE FARMER for his exertions in its behalf, we will give to those not entitled to either of the above premiums, the following Books, free of postage, or Extra Papers, as may be preferred:

1. To every person who sends SIXTEEN subscribers, at the club terms of thirty-seven cents each, one extra copy of the Farmer.
2. To every person sending for TWENTY-FOUR copies, as above, any Agricultural Book valued at fifty cents, or two extra copies of the Farmer.
3. To every person ordering THIRTY-TWO copies, any Agricultural Book worth seventy-five cents, or three extra copies of the Farmer.
4. For FORTY, any Agricultural Book valued at \$1, or four extra copies of the Farmer.
5. For FORTY-EIGHT, any Agricultural Book worth \$1.25, or five extra copies.

For larger numbers, books or papers given in the same proportion. To save cost to our friends, we pre-pay postage on all books sent as premiums. Persons entitled will please state whether they wish books or extra papers, and make their selection when they send orders, if they desire books; or if they have not obtained as many subscribers as they intend to, we will delay sending until the club is full, if so requested. We do not require that all the papers of a club should be sent to one Post Office. If necessary for the convenience of subscribers, we are willing to send to as many different Offices as there are members of the club. We write the names on each paper, when a number are sent to the same Office, if so desired; but when convenient, Post-Masters would confer a favor by having the whole number ordered at their own Office, sent to their own address.

As all subscriptions commence anew with the year, places where the FARMER was never before taken will stand an equal chance in the competition for premiums.

BACK VOLUMES of the Farmer will be furnished, if desired, and counted the same as new subscribers. We shall keep a correct account of the subscribers sent by each person, and in the May number we shall announce the premiums.

☞ Specimen numbers, show-bills, &c., sent to all post-paying applicants. All letters must be paid or free. Subscription money, if properly enclosed, may be mailed at our risk.

The volume for 1854 will be printed on good paper, with new type bought expressly for it. A gentleman, graduate of the University of Vienna, who is familiar with the languages of those nations in which the science of agriculture is most cultivated, will aid us in translating for the FARMER whatever can instruct or interest its readers. This gentleman is by profession a Civil Engineer and Architect—branches of knowledge intimately connected with the progress of rural arts and sciences. The general character of our paper is thus pithily stated by the Hon. MARSHALL P. WILDER, President of the Massachusetts Board of Agriculture, and of the United States Horticultural and Agricultural Societies, in a letter now on our table, which closes as follows:

"I have always had the GENESEE FARMER. *It is, without favor or affectation, the best paper in the country.* MARSHALL P. WILDER."

As our club price to each subscriber is only thirty-seven cents a year, no matter how many other agricultural journals one may take, to patronise the FARMER can not impoverish him.

DANIEL LEE.

THE

HORTICULTURIST,

And Journal of Rural Art and Rural Taste.

EDITED BY P. BARRY, AUTHOR OF THE "FRUIT GARDEN."

THE HORTICULTURIST, as its name implies, is devoted to Horticulture and its kindred arts, Rural Architecture and Landscape Gardening, and will keep its readers advised of every thing new on the subject, either in Europe or America. It is a Monthly Journal of forty-eight pages of reading matter, beautifully printed on the finest paper, and elegantly illustrated. In addition to numerous wood engravings, each number contains a full page engraving on stone, of some new, rare, and valuable fruit or flower, and is at least one of the most beautiful Journals in the country; and the publisher will not rest satisfied until the HORTICULTURIST, AND JOURNAL OF RURAL ART AND RURAL TASTE, is acknowledged to be the best Horticultural Journal in the world. The honor of AMERICAN HORTICULTURE requires this—interest and patriotism alike demand it. With proper support from the Horticulturists of the country, I have full confidence this point can be reached. To accomplish this desirable end, the publisher has determined to devote his whole time and attention to this work, and his connection with the *Genesee Farmer* as one of its editors (and in reality its publisher), which post he has filled since 1849, will therefore cease with the present volume.

Mr. BARRY, so long and so favorably known as the Horticultural editor of the *Genesee Farmer*, is the editor of this work; and those who wish to continue to receive the benefit of his valuable instructions in Fruit Growing, can do so by subscribing for the HORTICULTURIST, and in no other way.

The new volume will commence on the first of January. The January number will be ready to deliver to subscribers by the 10th or 12th of December.

We shall take pleasure in sending specimen numbers to all who desire to inspect them, or show them to their friends.

Many would do themselves and their neighbors good service by becoming agents, and obtaining subscribers among their friends and neighbors. No man who raises Fruit or Trees can afford to do without the Horticulturist. Agents will be allowed a commission of 25 per cent.

TERMS—\$2 per year, in advance.

JAMES VICK, Jr., Publisher, Rochester, N. Y.

☞ We subjoin a few notices by the press, showing the estimation in which the work is held by our editorial brethren:

We are glad the work has fallen into such excellent hands.—*Louisville Journal*.

Its contents are spirited and various, the selections judicious, the illustrations elaborate.—*New York Daily Times*.

A standard work of authority upon all subjects discussed or explained in it.—*Vicksburg Whig*.

There is no work in this country of greater value to the cultivator of fruits.—*Inquirer, Portland, Me.*

We congratulate the public on having so valuable a periodical as the Horticulturist within their reach.—*New York Day Book*.

This periodical is got up in excellent style, and well sustains its former reputation under its present management.—*Middlebury (Vt.) Register*.

We feel that we are doing our readers a real service when we urge them to subscribe for this invaluable monthly.—*Weekly Democratic Press, Chicago*.

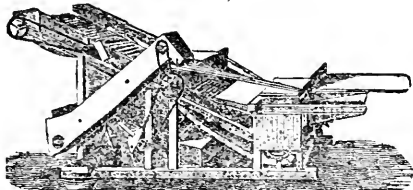
It is well got up; its articles able, various, and appropriate.—*Genesee Courier*.

The plates alone are worth the year's subscription. The letter press is of a highly instructive character, and embraces a variety of topics. None who have a taste for the beautiful in nature should be without such a valuable publication.—*Hamilton (C. W.) Spectator*.

There is substantial profit as well as pleasure in cultivating taste in buildings, yards, gardens, &c., and the subscription price would be capital well invested by those who will attend to the contents of the Horticulturist.—*Daily Courier, Zanesville, Ohio*.

We are quite satisfied with the work, and are inclined to believe that, to the mass of readers, the work will be even more acceptable than it was under the charge of the accomplished Downing. We recommend the work cordially to the patronage of our friends and the public.—*Massachusetts Spy*.

AGRICULTURAL IMPLEMENT MANUFACTORY,
CORNER OF CAROLINE & THIRD STREET,
BUFFALO, N. Y.



**Pitts' Patent Separator—Improved Double Pin-
ion Horse Power—Pitts' Corn & Cob Mills, &c.**

I HEREBY give notice that since the extension of the patent right on my Machine for Threshing and Cleaning Grain, I have removed to Buffalo, N. Y., where I have permanently located, and erected a large establishment for the future manufacture of the above Machines.

The Separator has been enlarged, improved, and rendered more permanent and durable in all its parts, while the Horse Power for strength, ease, durability and cheapness of repair is not surpassed by any in the United States. This Power is warranted to stand the full strength of eight horses—also to give as much effective or useful power when driven by one or two horses as any other Horse Power, whether constructed on the endless chain or lever principle. It was put on trial at the great exhibition of Horse Powers and Threshing Machines at Geneva, July last, 1852, where it received the New York State Agricultural Society's First Premium "for the best Horse Power for general purposes." The Separator, at the same trial, also received the Society's First Premium.

My Machines will thresh and clean from three to five hundred bushels of wheat per day, and other grain in proportion.

Two hundred of the above Machines are for sale at the Agricultural Works of the subscriber in this city, all warranted to be a better article than can be purchased at any other shop, and if they do not prove on trial to be so, I will take them off the hands of the purchasers at the price they may pay me for them.

I further notify all persons who are purchasing Horse Powers and Separators to be used in California or Oregon, that I will hold them accountable for any infringements of the rights secured to me by letters patent in the above Machines, as I am manufacturing a Horse Power and Separator expressly designed for that section.

All orders for the above Machines hereafter addressed to JOHN A. PITTS, Buffalo, N. Y., will receive prompt attention.

May, 1853—4t

JOHN A. PITTS,
Buffalo, N. Y.

French Zinc Paint.

THIS new and beautiful article of Paint is now offered to the trade and public, ground in prepared linseed oil, for the first time in this country. It has been used successfully in France for the last five years, where it has superseded white Lead as a paint.

The French Zinc when properly prepared and used, makes the most brilliant and durable white in use, and is entirely free from all poisonous qualities.

The French Zinc is not more expensive than white lead, and is prepared in such a manner that it requires no farther preparation for use, than to thin it with Turpentine or raw Oil to the consistency of white lead paint.

The French Zinc is very much whiter, and has a better body, than the New Jersey Zinc.

The French Zinc is offered dry, and prepared as above, in quantities to suit purchasers, at the Manufacturer's Depot, No. 17 Buffalo st., Rochester, N. Y.

July, 1852.

M. F. REYNOLDS.

Superphosphate.

NO expense has been spared in the combination of this most fertilizing manure, which contains all the nutritive properties of all plants. It is superior to most of the articles offered for sale under the same name, and is inferior to none, although sold at a much lower price. Put up in bags at \$40 per ton of 2000 lbs., cash.

Office of the New York Superphosphate Manufacturing Company, No. 139 West street, New York.

VICTOR R. KNOWLES, Agent.

September 1, 1851.—3t.

BUFFALO NURSERY.

P. S. MANLEY & BROTHER, PROPRIETORS.

Situated on Main Street, two miles above the American Hotel.

WE wish to call the attention of the public to our Nursery of FRUIT AND ORNAMENTAL TREES, SHRUBS, AND PLANTS, of all that is grown in the best establishments in the country. Persons wishing to buy any of the articles named below, can do no better than to buy of us.

Standard Apples, Pears, Cherries, Plums, Peaches, of all the best varieties—fine trees, from one to five years old.
Dwarf Apples, worked on Paradise and Doucin stocks.
Dwarf Pear Trees, worked on Angers Quince stocks, of all the desirable kinds. Trees from one to three years old can be furnished by the hundred or by the thousand.

Quinces—Good strong plants, in any quantity.
Hardy Grapes—Plants of all the finest varieties, of one, two, and three years of age.

Foreign Grapes—A very good selection.
Courants, of all the new and old kinds—a very fine stock of one and two year old plants.

Raspberries, of the best kinds, and very good plants, in any quantity.

Gooseberries—A first rate assortment of varieties, and capital plants.

Strawberries—An excellent selection of the best sorts—a very general assortment.

Rhubarb, or Pie Plant—A good stock of Tobolsk, Victoria, Downing's Colossal, Giant Hybrid, Wisconsin Mammoth, &c.

Asparagus—Good one and two year old plants.

Incisuous Ornamental Trees—We have a fine stock, consisting of the best of European, American, and Asiatic kinds.

Evergreen Trees—Perhaps the most excellent and desirable stock in the country for size and shape. Trees from six inches to ten feet in height, we can furnish, of many kinds.

Ornamental Shrubs—We have a very large stock of Ornamental Shrubs, and can supply most any quantity, of any variety, and the plants are very fine indeed.

Evergreen Shrubs—Not a large but an excellent stock, consisting of such varieties as are found by experience to be desirable in this climate.

Climbing Shrubs—The utmost pains have been taken to propagate all of the varieties of Climbing Shrubs which succeed in this latitude, and now we have an excellent stock.

Roses—A stock of sufficient variety, and of surpassing merit. A stock of over a hundred of the very best kinds cultivated in Europe or America, propagated with the utmost care, and in every way worthy of attention from the most critical in Rose culture.

Dahlias—Our Dahlias—say eighty varieties—are undoubtably as fine as can be found in this country.

Paeonies—Twenty varieties of these most desirable plants. Several varieties of the splendid CHINESE TREE PÆONIES.

Strangers to our locality are referred to Messrs. Jewett & Thomas' Directory and Map of the city of Buffalo, for the year 1853. Our residence and Nursery Grounds are exactly delineated on their map.

We furnish Catalogues to all who apply for them. From the extensive increase which we are making in our plantations, it is quite necessary that our business should be done on cash principles. All orders sent to us by mail will receive perfectly prompt attention, and when persons do not know exactly what they want they had best leave selections with us. Our packing is done in the best manner, and all goods carefully shipped as directed in orders. The strictest care is used to ensure exactness in all our business transactions.

WORMS! WORMS!

VARIOUS theories have been started relative to the origin of intestinal worms, and yet the question is still a vexed one among medical authorities. Of one fact, however, all are informed, and in which all agree—the fatal nature of the influence they exert on children. At this season of the year the attacks of worms are most frequent, as well as most dangerous. We take great pleasure in directing the attention of parents to the Vermifuge of Dr. McLane. It is one of the most extraordinary medicines ever introduced to the public, and has never failed of success when tried.

Purchasers will please be careful to ask for Dr. McLane's Celebrated Vermifuge, and take none else. All other Vermifuges, in comparison are worthless. Dr. McLane's genuine Vermifuge, also his Celebrated Liver Pills, can now be had at all respectable Drug Stores in the United States and Canada.

100,000 Cherry Seedlings,

FINE one year old, for sale by
J. C. CAMPBELL, Rochester, N. Y.
November 1, 1853.

Choice Poultry for Sale.

THE SUBSCRIBER offers for sale one hundred pairs of
Brahma Pootras; also, Shanghaes, Cochin Chinas, and Bol-
ton Grays; all warranted pure. THOS. WRIGHT,
Utica, N. Y., Oct. 1, 1853.—3L

New York Agricultural Warehouse.

HORSE POWERS, Threshers, Fan Mills, Smut Machines,
Grain Drills, Hay Presses, Grain Mills, Corn and Cob
Crushers, Cider Mills, and a large assortment of Plows, and
all kinds of Agricultural and Horticultural Implements.
Peruvian Guano, Superphosphate of Lime, Bone Dust,
and other fertilizers, of the most superior kinds.

R. L. ALLEN,
Sept. 1, 1853. 189 and 191 Water street, New York.

1000 Book Agents Wanted.

INTELLIGENT and industrious men wanted in every
part of the United States, to engage in the sale of the best
assortment of ILLUSTRATED POPULAR AND USE-
FUL BOOKS published in the country.

Men of good address, having a small capital of \$25 to
\$100, can do well by engaging in this business, as the in-
ducements offered are of the most liberal character.

For further particulars, address (postage paid)
ROBERT SEARS, Publisher,
October 1, 1853.—2t 151 William st., New York.

Improved Fowls for Sale.

HAVING kept for several years the very best fowls to be
procured, and having the past season added to my stock
some exceedingly beautiful specimens, I have now a great
number of fine young pairs, certainly as good as can be
found in the country, which I will sell at a much lower
price than that charged by fowl-dealers. I will sell the fol-
lowing varieties at five dollars per pair:

*White Shanghae, Black Shanghae, Buff Shanghae, and
Cochin China; and Brahma Pootra, and Speckled Shang-
ghas (a very beautiful bird),* at ten dollars per pair.

These fowls will be ready for delivery by the first of Sep-
tember, and I will coop them carefully, with feed, water,
&c., and send by railroad or express, as desired, without
charge, and warrant every fowl sent to be pure and fine.
Orders are solicited. W. M. VICK,
Rochester, N. Y., August 1, 1853.

PERUVIAN GUANO.

WE are receiving our supply of Peruvian Guano, per ships
"Blanchard," "Senator," and "Gray Feather," from the
Chincha Islands, and are now prepared to make contracts
for the spring supply. As the demand is large, we would
advise all who may be in want of this valuable manure to
make early application. Price, \$15 per ton of 2000 pounds.
Be particular to observe that every bag is branded—

No. 1.
WARRANTED PERUVIAN
GUANO.
IMPORTED INTO THE UNITED STATES BY
P. BARREDA BROTHERS,
FOR THE PERUVIAN GOVERNMENT.

LONGETT & GRIFFING,
State Agricultural Warehouse, 25 Cliff St., New York.
November 1, 1853.—3t.

Albany Drain Tile Works,

No. 60 Lancaster Street, Albany, West of Medical College.

THE SUBSCRIBER, successor to JOHN GORT, formerly
A. S. BARCOCK & Co., is prepared to furnish Draining Tile,
of both Horse-shoe and Sole patterns, at from \$12 to \$18
per thousand pieces. The Tile are more than a foot in
length, and fully equal to any of American or foreign man-
ufacture. They are so formed as to admit water at every
joint, and drain the land perfectly from twelve to twenty
feet on each side, according to the nature of the soil.

Also, Large Tile, for drains about dwellings, yards, &c.,
at from \$1 to \$8 per one-hundred pieces. These are cheaper
and more durable than brick drains.

Full directions for preparing ditches, laying Tile, &c.,
will be sent free to those addressing the subscriber, post-
paid. The Tiles can be sent safely any distance. Orders
are respectfully solicited. DAVID CALLANAN,
October 1, 1853.—2t Albany, N. Y.

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Clarke's Excelsior Churn.

Premium Churn of the New York State Fair of 1851!
SHOPMEN and Manufacturing Companies will find this
new Churn more saleable than others have been, and can
obtain State or County Rights, where not yet sold, on the
most liberal terms. Splendid MODEL EXCELSIOR
CHURNS furnished in perfect working order, with set
of castings for patterns, to those who purchase territory. Dairy-
men will be furnished with favorite sizes, warranted to work
easier, and to make more butter from a given quantity of
cream (1½ lbs. in 20 lbs.), than the common Crank or Float
Churn. Apply to GEO. B. CLARKE, Patentee,
November 1, 1853.—1t* Leonardsville, N. Y.

The Practical and Scientific Farmer's own Paper.**THE GENESEE FARMER,**

A MONTHLY JOURNAL OF

AGRICULTURE AND HORTICULTURE,

ILLUSTRATED WITH NUMEROUS ENGRAVINGS OF
Farm Buildings, Domestic Animals, Implements, &c.

VOLUME XIV, FOR 1853.

DANIEL LEE, JAMES VICK, JR., & JOSEPH
HARRIS, EDITORS.

P. BARRY, Conductor of Horticultural Department.

Fifty Cents a Year, in Advance.

Five Copies for \$2—Eight Copies for \$3, and any larger
number at the same rate.

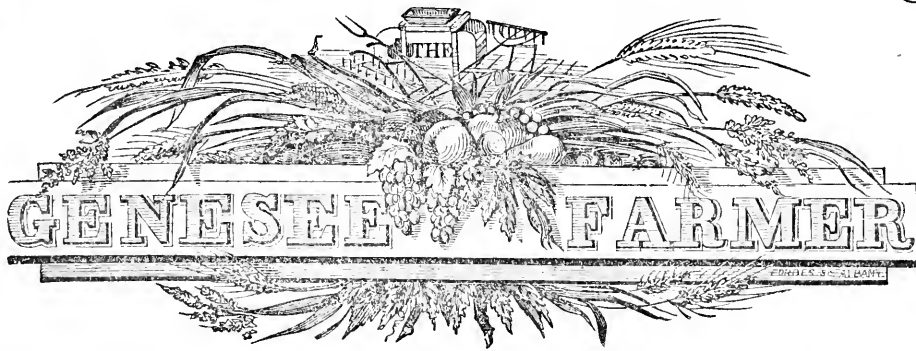
All subscriptions to commence with the year, and
the entire volume supplied to all subscribers.

Post-MASTERS, FARMERS, and all friends of improve-
ment, are respectfully solicited to obtain and forward sub-
scriptions.

Subscription money, if properly enclosed, may be sent
(post-paid or free) at the risk of the Publisher. Address to
DANIEL LEE,
November, 1852. Rochester, N. Y.

POSTAGE LAW.—By the new Postage Law,
which took effect on the 1st of September last, the
postage on the *Genesee Farmer* for one year is as
follows,—when paid quarterly in advance:

Any wherein the State of New York, . . . 3 cts.
Anywhere in the United States, 6 cts.



Vol. XIV.

ROCHESTER, N. Y., DECEMBER, 1853.

No. XII.

AN ADDRESS

DELIVERED BEFORE THE AGRICULTURAL SOCIETY OF FRANKLIN COUNTY, MASSACHUSETTS,
OCT. 7, 1853,

BY DANIEL LEE, M. D.

MR. PRESIDENT AND GENTLEMEN:—You cultivate the soil in Massachusetts; I cultivate it in the District of Columbia; and as one farmer talks to another, so shall I speak to you on the present occasion.

It has given me great pleasure, Mr. President, to witness your exhibition of neat stock, particularly the long lines of well-matched, well-trained working oxen. New England farmers have long excelled in the production of these useful animals; while your horses show by their action, spirit, and muscular development, that the breeding, rearing, and breaking to the harness and saddle of this favorite quadruped, are pretty well understood in Franklin county. In skillful hands, nothing pays better than the production of first rate horses; for the demand for them considerably exceeds the supply, and it is likely to do so for many years to come. At the last United States census, the six New England States contained 212,274 horses. The State of New York contained 447,014; being something more than twice the number in the first-named States.

You exhibited some excellent milch cows. The dairy business is now more profitable than I have known it for thirty years. It is, however, a branch of husbandry not generally well understood, and therefore one that is susceptible of much improvement in all parts of our extended country. New England farmers reported at the last census 618,237 cows; while the farmers of New York reported 931,324. These figures, copied from official sources, show that New York contains fifty per cent. more cows than New England; while the acres of improved land in each are: New England, 11,140,564; New York, 12,408,968.

Sheep husbandry and wool growing are, apparently, on the decline here, as well as in the valley of the Genesee. This whole State contained only 188,651 sheep in June, 1850; while in 1845, the two counties of Monroe and Livingston, in Western New York, contained 392,210. In 1850, these counties had reduced their flocks to 259,143; and to indicate the rapid decline of this branch of rural industry in five years, I will remark that New York contained 6,443,855 sheep in 1845, and only 3,453,251 in 1850—decrease, 2,990,614. This is a greater falling off in five years than the whole number of sheep kept in New England; which was in 1850, 2,163,453.

In studying the agricultural statistics of Massachusetts and other States with some care, as I have done, I have been most surprised at the small number of swine which you keep. This State had but 81,119 in 1850; and all New England but 361,463. In 1845, New York had 1,584,344; or more than four times as many as the six New

England States. But swine culture, like sheep husbandry, has also declined; so that New York contained fewer hogs in 1850 than it did in 1845, by 566,092. The reason why we can not keep so many hogs, nor so many sheep, nor cattle, nor dairy cows, nor horses, now, as we did eight years ago, in the State of New York, although we have 1,000,000 acres more under improvement, *is our bad system of tillage and husbandry*, by which the land is sadly impoverished. I do not say that every farm in New York parts with more of the elements of grass and grain than it can lose without deterioration; for I hope that one-fifth, perhaps one-fourth, of the farmers in that large and populous State, so cultivate their land as to increase rather than diminish its fruitfulness. Full three-fourths, I am sorry to say, make no adequate restitution to their plowed fields, meadows, and pastures, for the constituents of plants removed therefrom. With a higher price and surer sale for all the good horses they can rear; with a million more acres of improved land on which to keep them; with fewer sheep by 3,000,000, and fewer swine by 600,000; with fewer neat cattle by 200,000; and less land devoted to the culture of potatoes, flax, and other crops; is it not a significant and monitory fact, that New York farmers have found it necessary to rear and keep fewer horses by 100,000 than they did eight years ago?

These statistics are derived, primarily, from our whole rural population, and no one questions their general accuracy.

The agricultural statistics of Massachusetts are not less condemnatory of your treatment of the soil. Allow me to appeal to your official records for additional evidence on this point. Your State Board of Agriculture unanimously adopted the following resolution:

Resolved, That the necessity for this improvement (agricultural education), is apparent from the report of the valuation committee to the last legislature, by which it will be seen that, although there have been added to the lands under improvement since 1840, more than three hundred thousand acres, and although the upland and other mowing lands have been increased more than ninety thousand acres, or nearly fifteen per cent., yet the hay crops have been increased only about three per cent., showing a relative depreciation of *twelve per cent.*; and although the tillage lands have been increased more than forty thousand acres in the same period, yet there has been *no increase of grain crops*, but an absolute falling off of more than *six hundred thousand bushels*; and although the pasturage lands have been increased more than one hundred thousand acres, yet there has been scarcely any augmentation of neat cattle, while in sheep there has been a reduction of more than one hundred and sixty thousand, and in swine of more than seventeen thousand.

I have long believed, and earnestly contended, that our present means and facilities for acquiring a timely and thorough knowledge of the true principles of agriculture are inefficient—are nearly worthless, without additions thereto. Advantages of a more instructive and practical character are not only needed, but absolutely indispensable to enable us to learn the rudiments of our profession. In producing a bushel of grain, or one hundred pounds of hay, we take something from the soil. Our common sense and long experience teach us this; but have they ever taught us how much of the substance of the earth is consumed in forming a bushel of corn, or wheat, or one hundred pounds of hay? So far as grass, grain, or root crops draw their aliment from water and the atmosphere, no restitution to the land from which we remove agricultural plants is necessary. This is an important fact, and leads at once to the inquiry, What elements of fertility, and how much of each does a fair crop of corn or wheat take from an acre of ground? Wholly irrespective of all crops, does not tillage, the frequent stirring of vegetable mold by the plow, harrow, cultivator, or hoe, operate to consume said mold, and dissipate its atoms in the air, just as the frequent turning of a compost heap diminishes its bulk, consumes its substance, and fills the atmosphere with offensive gases? When the fertile prairies of Illinois are first broken up, and their virgin mold rots in the sun, an increase of sickness marks the increase of malaria, or pestiferous organic atoms in the atmosphere. While tillage may consume and discharge into the air all the volatile constituents of our crops, whether they grow or not, who can say

that frequent washing rains and melting snow, may not dissolve every mineral atom available in plowed and hoed earth as food for plants, and convey it into ditches, swamps, creeks, springs, wells, and rivers? Of all the myriads of species of animals on the globe, man alone impoverishes the ground; and he alone cultivates it. If this cultivation be unwisely performed, the soil's natural fruitfulness will be consumed and wasted as certainly as fire will consume dry stubble when kindled into a blaze. Everything turns on the pivot of wise or unwise cultivation. In order to practice the one and avoid the other, we are required to solve this problem: How can a farmer grow large and remunerative crops with the least injury to the land, and the smallest outlay for manure? Before this problem can be fairly solved, one needs a critical knowledge of the vital force in all seeds sown or planted; and also a knowledge of the various atoms imbibed and organized in living, growing germs, by which they increase in weight and substance, and finally reach full and perfect maturity, with ample provision for the next generation of living plants. Nor is it enough to be able to measure with accuracy the vital force of different seeds, and understand the elements of the food of all agricultural beings, whether vegetable or animal. Every atom of this food, and every living cell and tissue, no matter how organized, is subjected at all times to unbending and never ending natural laws.

Before we, as practical farmers, can deal wisely with the things that really form our meat, butter, cheese, wool, fruit, grain, and vegetables, it is indispensable that we study those fixed laws which God established to govern the minerals in our soils, and the increase and decrease of mold and fertility on the surface of the earth. Were I called upon to write an agricultural catechism, law and order in farming, based, not on the doubtful precepts of man, but the laws of his Creator would be the first words to be committed to memory, and the first principles to be mastered by the pupil. As a plain, working cultivator of the soil, I believe in the systematic study of all the substances and forces, whether vital or physical, with which we have to do; but outside of and beyond all these, I recognise a law which binds the mineral to the vegetable kingdom, the vegetable to the animal kingdom, and the animal to both of the others, in a way that makes a knowledge of this law the most important and useful element in a farmer's education. Those atoms which you toil so long and anxiously to make appear in the form and condition which you see them in this ear of corn, this potato, and this apple [the speaker showing them], bear peculiar relations to each other as the representatives of the three great kingdoms of Nature. Although the seeds of this maize contain only about one per cent. of incombustible earthy matter, and the potato and apple not far from the same quantity, yet there is abundant reason to believe that not only our crops depend, in a good degree, on the presence of these incombustible atoms in a soluble state, in the soil, but the agricultural value of its mold is governed by the presence or absence of the same earthy atoms. It is the relations that parent rocks bear to soils, and the plants that naturally grow thereon, as well as the relations which subsist between sunshine, solar heat, frost, atmospheric gases, rain, and dew, and all agricultural plants and animals, that limit the rewards of rural industry. Increase your knowledge of these relations, for nothing is easier than to study them, and the return for your labor and capital will increase in the same ratio.

Suppose you were to look over the 125,000,000 acres of improved land in the United States and find the 500,000 acres which, according to the last census, produce the most value in crops; in what part of the republic, think you, they would be found? Not in Massachusetts, nor in New England—not in the neighborhood of any great city, nor in any of the southern or western States; but in Western New York and the Valley of the Genesee. In 1850, the farmers of the six New England States reported to the Marshals that they raised 1,080,874 bushels of wheat. The few farmers of Monroe county in which I reside, reported, at the same census, 1,441,653 bushels as their last crop,

being over 400,000 bushels more than was grown in all New England. Now, the climate of the Genesee valley differs but little from that of the Connecticut valley; the annual fall of rain is about the same in both regions, and the atmosphere, with all its aliment for wheat plants, is probably as favorable in one valley as the other; while wheat in New England has been worth, on an average, some fifty per cent. more for the last ten years than in Western New York. With such powerful inducements to grow wheat in New England, how does it happen that a county 360 miles west of you, which now annually produces a million bushels of corn, a half million bushels of oats, 120,000 bushels of barley, 500,000 bushels of potatoes, 300,000 pounds of wool, 65,000 tons of hay, not to name dairy products, pork, fruit, peas, beans, and vegetables, grows also a third more wheat than Vermont, New Hampshire, Maine, Massachusetts, Connecticut, and Rhode Island put together? There is a law that governs this matter, not written in any of your statute books—not taught nor studied in one New England school, which is sadly overlooked by all our agricultural societies—a law that must, nevertheless, be generally understood before American agriculture can rise to be anything more than a mere empirical art. If New England farmers say in their hearts, “We will not cultivate agricultural science,” tell me candidly, whether they may reasonably expect the fruits of this science?

Whatever you may say on this subject, I feel it to be my duty to tell you, as I do all others, that American planting at the South, and American farming at the North, are the most destructive to the land under cultivation of any that can be found in the wide world. Americans do not see this, simply because they refuse to study their agricultural statistics, and compare them carefully with the statistics of other nations. Having a whole continent to desolate by taking every thing out of the soil that can be by any possibility form cotton, tobacco, grain, and provisions, which Nature placed there, our people never stop to consider the fact that the best soils rarely contain more than one part in a thousand of the atoms that make their daily bread. After these shall have been removed in grass, grain, cotton, tobacco, wool, and the flesh of animals, and thoughtlessly wasted in cities and elsewhere, is it not obvious that general sterility will prevail over the face of the republic? Now, it contains a fair supply of the raw material for making human food and raiment; but the fact is not to be disguised that we employ five million laborers, and five thousand million dollars capital in the great work of taking from the virgin lands of the United States their elements of fertility, and sending them to distant or home markets, regardless of the interest which the next and all succeeding generations have in the enduring fruitfulness of the earth. We say that posterity has done nothing for us, and therefore we are under no obligation to those that come after us. This is false reasoning; for posterity may properly expect that every generation shall leave the earth, which is to feed all and clothe all, as rich in the elements of grain and other crops as they found it. What harm have persons yet unborn done to the twenty-five millions now in the United States, that we should impoverish one acre of ground to their obvious injury, seeing that in twenty-five years fifty millions of people will need twice as much of the fruits of the earth as we now do in the States where we reside? Conceding that we may innocently do all we can to consume and waste the few precious atoms at and near the surface of the ground which render it productive, are we under no obligation to establish institutions designed to teach our children and grand-children a better system of tillage and husbandry than that which impoverishes four-fifths of the soil now under the plow? If we find it somewhat difficult to command a full supply of manure with all our present large resources, how are succeeding generations to meet their vastly larger wants from the same area, after the land has parted with all the raw material of crops on which we now draw so liberally for our annual harvests? Will not their difficulties be ten-fold greater than our's, unless their superior knowledge shall give them the command of agricultural

resources wholly unknown to the farmers of our time? Having an excellent market at your very doors for all that your best skill and industry can produce, you seem to have the strongest incentives to improve your farms, and double their products. To do this in the most economical way, allow me to suggest that you ought to study the latent powers of naturally poor soils for the cheap production of grass and grain. Suppose I were to investigate a fair sample of the arated soil of this county, and compare it with the soil in Western New York which produces the largest crops grown in the United States. What, think you, would be the essential difference between the two? It may be presumptuous in me to hazard an opinion on so important a question, on general principles, without a special examination of the land in this region. But you have the old red sand-stone here precisely as it is found in the District of Columbia; you have soft water here as it is there, and your land here, as it is there, is better adapted to corn than wheat. During the last six years I have had ample opportunities for the critical study of the free-stone and granitic soils of the South, as I had previously to investigate the lime-stone soils of Western New York. When rain water passes through the latter and appears in wells and springs, it is uniformly charged with salts of lime and magnesia, and rarely fails to contain salts of soda and potash in sensible quantities. Take a gallon of your well water and evaporate it to dryness, and it will not often yield more than a half grain of the carbonate of lime; while a gallon of the well water of Monroe county on our best wheat soils contains fifteen grains of carbonate of lime, and ten grains of the sulphate, or gypsum. It also contains from five to ten grains of Epsom salts, or sulphate of magnesia; several grains of common salt, particularly on the Onondaga salt group, which extend from Madison county through Onondaga, Cayuga, Wayne, Monroe, Orleans, and Niagara into Canada. It is the various salts which abound in the rocks of Western New York that impart to its soil unequaled agricultural capabilities; and yet, I have analysed more than a hundred samples of the richest farming lands in that region, and never found over two per cent. of lime in any soil. When you see 100 pounds of gypsum applied to an acre, add a ton of clover hay to the crop, although this salt of lime applied as a fertilizer adds only one part in twenty thousand to the soil, estimated to the depth of only ten inches, you have demonstrated the great value of a little of "the salt of the earth," where it is really needed. In a like manner, the salts of ammonia, and phosphates of lime, soda, magnesia, and potash found in guano, demonstrate in the most satisfactory manner the extraordinary power of a very little food of plants in augmenting to their growth on poor land. Under favorable circumstances, 100 pounds of Peruvian guano add from 400 to 600 pounds of merchantable shelled corn to the crop. To understand how so little manure produces so large a result, we must bear in mind that in 100 pounds of the seeds of maize there are 97 pounds of carbon and the elements of water, and only three pounds of the constituents that impart peculiar value to guano. It is not because wheat plants extract any considerable amount of lime from the soil, that limestone lands are uniformly the best for this grain. A reasonable amount of the calcareous element enables stable manure to produce more than it would without any lime in the soil. This is a curious fact, but I am unable to state the minimum quantity of the carbonate of lime that will suffice for all useful purposes. I am confident that two per cent. is the maximum quantity needed to grow wheat under the most favorable auspices; but whether one part in 100, or one in 500, or 1000, will answer equally well, I have never been able to satisfy myself. All farming lands that yield soft well and spring water need lime; and they very often lack other ingredients quite as much, which the application of lime will not supply.

To be continued.

NATIONAL HORSE EXHIBITION.

A FEW gentlemen of Springfield, Mass., acting on the suggestion of Mr. GEORGE M. ATWATER, a citizen of that city, and in conjunction with the Hampden County Agricultural Society, took the initiatory steps last May to hold a grand National Exhibition of Horses in Springfield in October of the present year. At the request of the promoters of the enterprise, the President, the Hon. M. P. WILDER, and other officers of the United States Agricultural Society, co-operated in the same, and by their joint efforts an exhibition was gotten up which appears to have given much pleasure to all that participated in the novel festival.

We have a full report of the proceedings in the *Springfield Republican*, which is entitled to especial commendation for the well executed labor it has performed to secure the most creditable and liberal arrangements in everything undertaken by the managers of the show. The entries for competition were forty-eight breeding mares, and nine additional ones with foal at side. The Morgan horses were numerous represented.

Board of Judges on breeding mares were B. V. FRENCH, of Braintree, Mass.; W. H. LADD, of Richmond, Ohio; MARTIN GOWDY, of Martinsburg, N. Y.; WM. PYNCHON, of Springfield; and THOMAS MOTLEY, Jr., of Jamaica Plains (Roxbury), Mass.

THOROUGH-BREDS.—*Board of Judges.*—Col. T. P. ANDREWS, U. S. A.; JOSEPH H. BILLINGS, of West Roxbury, Mass.; G. A. AUSTIN, of Vermont; and JOSEPH H. GODWIN, of New York.

The number of thorough-bred animals was not large, but among them were several choice specimens, of which may be mentioned Lady Digby, Jenny Lind, and Young Messenger. The following is the list of entries:

No. 1. Topsey, 7 years, 16 hands, 1180 pounds, bay, raised in England, and owned by C. A. CUTHBUT, Canada.

No. 2. Jehu Cricket, standard height, imported, sire unknown, dam dead, owned by amateur association in Springfield.

No. 3. Utah, 5 years, 16½ hands, 1350 pounds, dapple bay, owned by A. HOBBS, Boston, Mass.

No. 4. Bob Logic, 10 years, 15½ hands, 975 pounds, dark bay, owned by J. R. HUTCHINS, of Montreal, Canada.

No. 5. Lady Digby, 11 years, 15½ hands, chestnut, owned by L. JAMES TURNER, of Boston, Mass.

No. 6. Jenny Lind, 6 years, 15 hands, black, owned by A. L. BRAGEN, of Cornwall, Vermont.

No. 7. Lady Sussex, 6 years, 16¼ hands, 1100 pounds, bay, owned by Dr. J. G. BUNTING, of Lewis county, N. Y.

STALLIONS OF SEVEN YEARS OLD AND UPWARDS.—Under this head there were 56 entries, and remarks too voluminous for our limited space.

PONIES.—Twenty-one ponies were entered, and some discussion was had as to "what constitutes a pony."

MATCHED HORSES.—*Board of Judges.*—CHAUNCEY P. HOLCOMB, of Newcastle, Del.; J. D. WESTON, of Washington, D. C.; JOSEPH WARTON, of Albany; EDWARD HARRIS, of Morristown, N. J.; and HORATIO SARGEANT, of Springfield.

There were 33 entries of matched horses.

COLTS, INCLUDING STALLIONS, THREE YEARS OLD AND UNDER.—Under this head 17 three years old stallions, 5 two years old, and 7 one year old were entered. Only two fillies of three years old, and one of one year old, were entered.

Board of Judges.—DR. E. HOLMES, of Maine; SHIELDON P. LEAVITT, of New York; GEORGE D. WHEELER, of Deposit, N. Y.; and J. W. PROCTOR, of Massachusetts.

FANCY MATCHED HORSES came on at 12 o'clock, and the following was the *Board of Judges*.—EX-GOV. ANTHONY COLBY, of New Hampshire; Dr. MEADE, of Providence, R. I.; HENRY FULLER, of Springfield; CHARLES H. CHILDS, of Georgia; GEORGE J. POMPELY, of Oswego, N. Y.; and BENJAMIN WHEELER, of Danvers, Mass.

Sixteen pairs were entered for premiums, and several others were exhibited.

STALLIONS FROM FOUR TO SEVEN YEARS OLD.—*Board of Judges*.—MOSES NEWELL, of West Newbury, Mass.; JAMES M. WAYNE, of Georgia, Judge of U. S. Supreme Court; BENJ. THURSTON, of Lowell, Mass.; WARREN DELANO, JR., of New York; JAS. DEWOLF PERRY, of Bristol, R. I.

In this department the exhibition was fine, and there were 33 entries.

GELDINGS.—*Board of Judges*.—WM. S. KING, of Boston, Mass.; JOHN S. WALKER, of New Hampshire; J. S. F. HUDDLESTON, of Mass.; ALBERT S. GALLUP, of Rhode Island.

The entries under this head appear to have been more numerous than any other, being 109.

Few, if any, of the best horses were sold, and such as were fetched prices far below what is paid for premium neat cattle.

The following premiums were awarded :

STALLIONS OF SEVEN YEARS AND OLDER.—First premium, of \$200, to "Cassius M. Clay," owned by J. H. Goodwin, of New York.

Second Premium, of \$100, to Morrill horse, owned by F. Morrill, of Danville, Vt.

Third premium, of \$50, to "Bush Messenger," owned by Hiram Reed, of Augusta, Me.

Fourth premium, of \$25, to "Black Morgan," owned by Francis Twichell, Jr., of Petersham, Mass.

THOROUGH-BRED HORSES.—*Stallions*.—First and only premium, of \$100, to "Bob Legie," owned by J. R. Hutchins, of Montreal, Canada.

Brood Mares.—First premium, of \$100, to "Lady Digby," owned by James Turner, of Boston.

Second premium, of \$50, to "Lady Sussex," owned by Dr. J. G. Bunting, of Lewis county, N. Y.

Third premium, of \$25, to "Jenny Lind," owned by A. L. Bingham, of West Cornwall, Vt.

GELDINGS OF FOUR YEARS AND OVER.—First premium, of \$100, to Ebenezer Flagg, of Worcester.

Second Premium, of \$50, to A. F. Smith, of New England Village, Mass.

Third premium, of \$25, to Francis Twichell, Jr., of Petersham, Mass.

Fourth premium, of \$20, to George R. Wesson, of Worcester.

MATCHED HORSES.—First premium, of \$100, to Lewis Gale, of Barre, Vt.

Second premium, of \$50, to L. B. Chapman, of Windsor Locks, Conn.

Third premium, of \$25, to M. H. Griffin, of Middletown, Conn., for his New Jersey bred horses.

Fourth premium, of \$20, to S. C. Hall, of Manchester, N. H.

Fifth (extra) premium, of \$20, to T. J. Shepard, of Springfield, Mass., for his Genesee county horses.

STALLIONS OF FOUR TO SEVEN YEARS.—First premium, of \$100, to "Paul Clifford," owned by Hunsdon & Wilcox, Vermont.

Second premium, of \$50, to "Flying Morgan," owned by John Chamberlain and Hiram Gibbs, of Massachusetts.

Third premium, of \$25, to "Young Black Hawk," owned by F. B. Halsey, of Austerlitz, N. Y.

A gratuity of \$15 to "Flying Cloud," owned by Timothy T. Jackson, of Flushing, L. I.

A gratuity of \$10 to "Canadian Leopard," owned by Ira Griffin, of Massachusetts.

A gratuity of \$10 to "Raven," owned by Robbins Battell, of Norwalk, Conn.

FANCY MATCHED HORSES.—First premium, of \$100, to D. Sanderson, Somerville, N. J.

Second premium, of \$50, to Doty & Hubbard, Montpelier, Vt.

Third premium, of \$25, to Francis T. Cordis, of Longmeadow, Mass.

BREEDING MARES.—First premium, of \$100, to Charles W. Sherman, of Vergennes, Vt.

Second premium, of \$50, to J. F. DeWolf, of Bristol, R. I.

Third premium, of \$25, to Geo. A. Kibbe, of Springfield.

Fourth premium, of \$20, to Amos Felch, of Limerick, Me.

BREEDING MARES WITH FOAL BY THEIR SIDE.—First premium, of \$100, to R. S. Denny, of Clapville, Mass.

Second premium, of \$50, to Judson Nichols, of Flushing, N. Y.

Third premium, of \$20, to Robert Pomeroy, of Pittsfield, Mass.

COLTS.—*Stallions of Three Years Old*.—First premium, of \$50, to John R. Briggs, of Cheshire, Mass.

Second premium, of \$25, to Levi Cole, of Middletown, Conn.

Third premium, of \$20, to Barnes Davis, of Vernon, N. Y.

FARM OR DRAUGHT HORSES.—*Pairs of Horses*.—First premium, of \$50, to C. Fonda, of Clifton Park, N. Y.

Second premium, of \$25, to H. S. Chapin, of Springfield.

RECENTLY DISCOVERED GUANO ISLANDS IN THE INDIAN OCEAN.—Much has been said of the recently discovered guano islands in the Indian Ocean; and farmers in England have been encouraged to believe that the price of this highly concentrated manure was about to fall, so that its cheapness would place its consumption within the reach of every cultivator of the soil. We regret to learn that the several analyses of the new guano made by Dr. ANDERSON, chemist to the Highland and Agricultural Society of Scotland, and Prof. WAY, chemist to the Royal Agricultural Society of England, do not sustain these sanguine expectations. There are before us tables giving the results of the analyses of nine samples of this lately discovered fertilizer by the chemists named, and in not one of them is there so much as two per cent. of ammonia. The highest yield was 1.87, and the lowest .77 per cent, or three-fourths of one per cent. In phosphates they are richer than the best Peruvian guano on an average; the maximum yield was 80.33 per cent.; the smallest 21.88; and the average about 60 per cent. Should this manure come into our seaports as cheaply as is expected, it will take the place of ground bones and superphosphate of lime, rather than that of the best guanoes now in use. We have the analyses of thirty two samples of Peruvian guano, in which was found an average of 17.41 per cent. of ammonia, and 24.12 of phosphate of lime. The reason why the latter contains ten times more ammonia than the other is, doubtless, because no water ever falls on the Peruvian guano, while the other is exposed to the washings of rains.

A MODEL FARM.—At Myremin, in Ayreshire, Scotland, Mr. KENNEDY feeds under cover in the summer months, 220 large oxen, 460 sheep, 20 horses, 150 store pigs, on 90 acres of Italian rye grass. Last summer his house-fed sheep fattened better than in the field, and were kept on Italian rye grass four months, at the rate of 56 head per acre! They likewise received a daily supply of steamed food. But, allowing for this, we find that on this farm each acre of grass keeps about four times as much live stock as the average of cultivated land of similar quality in England. Mr. KENNEDY has attained this high state of fertility by the use of liquid manure, distributed over the farm in pipes, and applied to the surface by the force of steam in a jet like a shower of rain. To use Mr. MECUM's graphic words, he can "increase his wet days" as he finds it necessary; and when other people's fields are parched with drouth, his are glistening with perennial verdure. Having an unfailing supply of water, he can either mix it in his manure tank with a more enriching substance, and so shower it over the land, or he can sow guano broadcast over the grass, and then wash it in dissolved; or if nothing but moisture is needed, he applies that only.

BUFFALOES.—A member of Governor STEVENS' northern route exploring party, in a long communication to the *St. Louis Republican*, written from the head of Yellow Stone, relates the following among many other "sights and incidents" of the party thus far:

On Sunday, after a march of some ten miles, the buffaloes were reached. They were before and on each side of the train. For miles ahead it seemed one vast drove yard. They were estimated by some as high as 500,000—200,000 is considered a very low estimate. Drawing up the train at our usual halt at noon, a large herd were about half a mile ahead. The hunters, six in number, were immediately despatched, well mounted on spare horses reserved for that especial purpose, and the whole train had an opportunity of witnessing a buffalo hunt. The hunters dashed in among the herd, picked out the fattest of the cows, and then separating the selected ones from the herd, soon despatched them. In less than an hour the wagons were sent but a small distance from the route to receive the choicest pieces of the buffalo.

In the next two days' march the hunters were kept some distance ahead, to keep off the buffaloes; it was the only way the safe passage of the train could be insured through this sea of flesh. The pack mules and spare animals following on in the train, too numerous to be separately led, were hard to control; and despite every precaution and care, one horse and four mules were lost, they getting mingled with a herd of buffaloes. Every effort was made to reclaim them—hours spent in their attempted recovery. The efforts were entirely useless.

SHORT-HORN BREEDERS IN ENGLAND.—We put on record the following remarks on Short-horn breeders in England, copied from the *London Agricultural Gazette* of August 27th, for future reference :

Short-horn breeders have hitherto dated from CHARLES COLLING's sale, October 11, 1810; or from that of his brother, Mr. ROBERT COLLING's stock, some seven years later; or much later still, perhaps from the sale at Wiseton of Lord SPENCER's herd, on the 11th of September, 1846; or from the sale of the celebrated Kirkleavington herd, on the 9th of May, 1850. These have all been great eras in the history of the Durham breed, but none of them, it may safely be said, has exceeded in importance that which has occurred in Gloucestershire. We look back upon the first of these events as on the birth-day of that more general interest which now so widely prevails in the fortunes of this undoubtedly the dominant breed of cattle in this or any other country. It was, as it were, the expiry of some patent or monopoly of immense public value, or rather the sale of it in parts to a more numerous proprietary. The results of that patient skill and perseverance exhibited for so many years by the father of Short-horn breeders, were then distributed and scattered, and become the means, in the hands of others, of extending the improvements which he had originated. The local name become lost in the more general one, and people no longer spoke of the "Teeswater," but of the "Short-horn" blood.

It is curious, however, to observe that the influence of that event still exists, and that in the disguise or diluted form in which, after the lapse of nearly half a century, one might expect to find it, but in particular instances as intense and definitely marked as on the day when it first made itself known. The high average price that was fetched by the stock at Tortworth last Wednesday, was due not merely to the number whose descent was traceable directly from Mr. CHARLES COLLING's herd, but to the especial value placed upon a particular tribe descended from a particular animal in that herd. From Young Dutchess, one of the seven heifers then sold, there has descended a family bearing her name, in which the merits of the original, due to Mr. COLLING, have, in the hands of Mr. BATES, and latterly of Lord DUCIE, been not merely enduring, but increasing, with the lapse of time, and of course with the number of the individuals inheriting them. The original Dutchess fetched 183 guineas, 42 years ago; and now Dutchess 59 (6 years old), of the 8th generation from her, fetches 350 guineas; Dutchess 64 (4 years old), of the 7th generation, fetches 600 guineas; Dutchess 66, of the same generation (hardly 3 years old), fetches the extraordinary price of 700 guineas; Dutchess 67, of the 9th generation (15 months old), fetches 350 guineas; Dutchess 68, of the 8th generation (11 months old), fetches 300 guineas; Dutchess 69, of the 9th generation (5 months old), fetches 400 guineas; and Dutchess 70, of the 8th generation (calved about six weeks ago), fetched 310 guineas. This last was the calf of Dutchess 66, so that cow and calf fetched the altogether unparalleled sum of one thousand and ten guineas! [over \$5000.] Beside these, there were offered for sale two bulls, descended from Dutchess No. 1—the Duke of Gloucester (nearly 3 years old) sold for 650 guineas; and the fourth Duke of York (nearly 7 years old) fetched 500 guineas. Excluding one cow of this family, which we have not named—as owing to some doubts whether she would breed she fetched but a low price—the nine animals descended from CHARLES COLLING's Young Dutchess (three of them being calves) fetched the enormous sum of 4160 guineas, averaging 462 guineas a piece.

An English guinea is not far from five dollars our currency. The facts stated above are interesting, as showing the value of blood equally sustained through nine successive generations, and now more sought after than ever. Blood in Dutchesses and Dukes is often badly managed; but results prove that, under the control of such breeders as Mr. COLLING and Mr. BATES, it is as susceptible of improvement as of deterioration. There are at this time not far from twenty million head of neat cattle in the United States; and no other nation ever presented so wide and inviting a field for the full and profitable development of the art and the science of producing domestic animals of the highest possible excellence. In the FIFTEENTH VOLUME, second series, of this standard work, commencing in January, we shall discuss the principles of stock growing more thoroughly and elaborately than has ever been done in this country.

HOW TO ENRICH THE SOIL.—"If farmers would only make an agreement with their friends in town, that all the beef, mutton, butter, and eggs which they send should be duly returned, after they were done with them, for the restoration and renovation of land from which they came, they would be pursuing the plan which I have adopted."

Thus spoke Mr. MENCH, in his address to the members of the Royal Northern Agricultural Society, at its recent meeting in Aberdeen. The principle advanced is not only sound, but of the highest importance to all classes of the community. To farmers,

because restitution of the fertilizing atoms removed in crops is an axiom in husbandry that no time can change. To the inhabitants of cities and villages, because the offal from human food, the food of horses and other domestic animals, kept in cities, is a most prolific source of pestilence, suffering, and premature death.

Thirty years ago, when we commenced the practice of medicine, our attention was called, professionally, to the sources of most of the maladies that afflict the residents of cities; and while bad habits, poverty, and a thousand other unhappy influences, may co-operate in deranging the human system, the contamination of the air constantly respired, and of the water daily consumed in drink and in food, by decaying vegetable and animal substances, was found to be the most common and fatal cause of sickness.

Let us now see the practical result of Mr. MECHE's principle, and we will let him state the case in his own language:

I have a field of five acres, which used to starve a couple of cows. Last year, in May, I began to work it with *liquid manure*, and continued through the winter; and now it is covered with the finest grasses. I keep ten head of cattle and three horses on it, and they never eat it down. In root crops the same result takes place.

By liquifying night-soil and guano, this enterprising farmer gets double the effect from the manure that can be obtained by applying either in a solid form. He says:

Suppose I wanted to put guano on my field: I would put it into the *tank*, agitate it by an air pump, and in a quarter of an hour you would see it pass out in a stream, going down into the sub-soil to the roots of the plants. The great advantage is, that you absolutely fertilize the bottom soil, while with the plow you can not get down above two and a half feet. We put on one hundred gallons a minute all day long, and all night long; we do not even stop at dinner time. Fortunately for me, I obtained a little bog land, and there I got plenty of water that now is a great source of fertility; in fact, I would not give it for £3,000 (\$15,000), because I can make a better use of it than I could of the money.

Facts like the above possess a deep interest.

A LANCASTERIAN SCHOOL.—Hon. WILLIAM C. RIVES, in his late Address at Saratoga says:

"There is no branch of human knowledge in which so much is taught by *example*, as agriculture. The practice of the best farmers, it has been well said by the leading agricultural writer of England, Mr. PREECE, is the accumulated and varied science of ages. Acknowledging, as I do with gratitude, and in the most unreserved terms the obligations of agriculture to professional science, I must yet say that farmers are in the main the best teachers of farmers, and that through the medium of agricultural societies and agricultural journals they have been organized into a great Lancasterian school, in which the system of mutual instruction has received its highest development and most useful application."

The idea which the honorable speaker intended to convey is alike true and beautiful, but expressed in terms chosen with less care than a question of science demands. If our present "system of mutual instruction has received its highest development," then further improvement in said system is impossible. So far short of perfection is this system, as now practised, that it is but the living germ in an acorn compared with the mighty oak, whose highest development can only be consummated by the steady annual growth of centuries. Our agricultural journals are good seed sown with a liberal hand, but much of it falls on barren ground. Not one farmer in a thousand, take the whole United States together, labors to teach his brother farmers all he can, and studies cheerfully and earnestly the great book of Nature that he may be able to instruct every member of his noble profession. To enlarge and elevate this system of mutual instruction, the *Genesee Farmer* was made the first fifty cent agricultural journal in America; and it has been steadily kept at that low price to meet the economical notions of the million, while its conductors have given away about \$800 worth of agricultural books a year to create a popular taste for rural literature and science throughout the country.

Friends! write for your own paper—extend its circulation and usefulness.

"FARMERS AND MANUFACTURERS."—In the last *Farmer*, under the above heading, our worthy friend, JASON SMITH, bespeaks more encouragement for the manufacturer, that he may be able to consume the products of the farmer, who is now dependent on a foreign market. This, I take it, is rather obsolete political economy, since the permanent prosperity and unprecedented increase of our manufacturers has already brought about the result which our friend SMITH now hopes for. It is admitted that at this time no country on the earth's surface can boast of a more successful or increasing manufacturing industry than these United States; and what is most singular, the iron interest, which Mr. SMITH adverts to—an interest that has clamored louder than any other for more protection against foreign competition—is now more prosperous, and in a greater state of progress, than any other branch of domestic industry.

Mr. SMITH's remarks on the importance of keeping young stock well fed and growing until they reach maturity, are founded on that good economy which characterizes Mr. SMITH's farming, but which is sadly neglected by farmers generally; and doubtless the tempting price offered by the distillers for their corn, is at the bottom of the evil. But every good farmer should contrive, by extra pains, in making, saving, and applying his manure, to have extra grain or other food sufficient to keep his animals well, after selling the greater portion of his cereal crop. It is true, as Mr. SMITH says, that the pork of the distillery comes in competition with that of the farmer, and reduces his profits on that article; but the distiller more than makes up for his competition in the pork market, by the increased price he pays for the farmer's corn. Last winter the farmers of Seneca and Wayne sold their very large crops of corn to the distilleries at 68½ cents the bushel, while no produce buyer in these counties would pay over fifty cents a bushel for corn to send to the New York market. It is also true, as Mr. SMITH asserts, that the waste of manure by the distillers of Seneca county is a crying evil, and a manifest cheat upon the vegetable kingdom, which she will not fail to retaliate upon the animal creation. But these things are managed better elsewhere. At the distilleries in Oneida and Madison counties, the pens and stalls for cattle and hogs are cleaned daily, and the manure, liquid and solid, is all sold to the corn and hop growing farmers in those counties, at the rate of 25 cents a two-horse load. At the great distilleries around New York, the slop is all appropriated, and the manure returned to the hungry soil in its rural vicinity.

If it was my purpose to vindicate the distilleries, I should not attempt it now, when the mania for Maine law turns every head. But it is susceptible of proof, that the cooked slop of the distillery will fatten as many animals as the raw corn would have done before it was ground and passed through the still; and if the manure is saved and applied to the soil, nothing is lost—and I trust it will be admitted that the alcohol converted into burning fluid, and for medicinal purposes, is something gained.

Mr. SMITH refers to JOSEPH HARRIS' articles in the *Farmer*, entitled "The Farm as a Manufactory." I hope Mr. H. will continue the discussion of the subject, to show that if the "making of manure follows the making of pork, beef, mutton, butter, cheese, &c.," the product is but too often wasted to the winds, and rarely, if ever, thoroughly saved and economically applied, at least on this side of the Atlantic. S. W.

CALIFORNIA FARMING.—The following is an extract from a letter to Rev. C. WOODWARD, of this village, written by a gentleman engaged in farming, in the land of gold. It bears date San Lorenzo, September 12, 1853:

"My farming operations here this season would compare favorably with some of the first-class farmers in Western New York. I have just completed the threshing of my grain, which was principally barley. The total crops of my farm amount to a little over 6,000 bushels of barley (a part of which was grown on shares), and 600 bushels of wheat. The barley grew on 88 acres of land, and the wheat on 8 acres. Some three acres of the wheat yielded above 90 bushels to the acre, a yield probably unprecedented even in this country of great things. The yield of barley, however, was nothing extraordinary for this country. In addition to my grain crops, I have about 60 acres of potatoes, which will average 200 bushels to the acre; also 2 or 3 acres of cabbages or pumpkins. My total crop will be about 550 tons. This amount of produce, to a New York farmer, will seem large; but there are many farmers in this country who will triple that amount of produce this season, and some few that would not miss that amount if taken from their crop. JOHN M. HEMAN, about ten miles south of me, this season has harvested and threshed 5,000 bushels of wheat, and nearly as much barley. He has also 1,500 acres of potatoes, all of which will yield finely; and cabbages, beets, carrots, and onions, without count. In fact, California will this season about supply herself with the great staples of life."—*Seneca County Courier*.

THE WINTERING OF STOCK.

TAKING the last census as the basis of the calculation, and there are at this time about six hundred million dollars worth of live stock in the United States. Their value exceeds that of all the manufacturing establishments in the country, and also exceeds the capital employed in commerce, both inland and foreign. Live stock is an immense national interest, but one which has been sadly overlooked by American statesmen and writers on public economy. How to winter cattle, horses, hogs, sheep, and poultry in the most economical way, all things considered, is a subject on which an instructive volume might be written. The science of animal physiology sheds much light on the business of keeping live stock, both in winter and summer; and if properly studied in its bearings on this great interest, would add indefinite millions to the income of farmers, and the wealth of the nation. But how can we persuade our readers to study animal physiology in connection with the production of the flesh of their domestic animals? It is impossible to show them the valuable fruits of any science relating to husbandry before its seeds are permitted to be planted and cultivated in any State in the Union. Nevertheless, as the truths of science and the truths of empiricism never contradict each other, many learn by the latter not a little of the wisdom taught by the former. Thus science informs us *why it is* that cattle and other animals subsist on less food in winter, and keep in better order, if well stabled or housed, and regularly fed, than they will if subjected to the rigors of cold storms, snow, rain, mud, and irregular feeding. The latter system consumes both forage and flesh needlessly, and, of course, involves a prodigious loss to such as follow it. Warmth is the equivalent of food, because food is used in the bodies of all animals to generate what we call animal heat. How far warm stables will save hay, grain, roots, corn-stalks, and other food of domestic animals, is not known; but a number of experiments lead to the conclusion that one-third may thus be saved with advantage to stock. A man at work out in the cold of winter needs double the food that would serve him if he remained idle in a warm room through the winter; and the same is true of an ox or horse. A large share of all domestic animals do not work, and are kept for the production of flesh, milk, or wool. They need a reasonable amount of exercise to preserve their health, as well as good keeping in the matters of food, drink, and shelter. In wintering hogs, true economy requires that one should keep no more than will give the maximum of flesh for the food consumed. To keep a pig without his gaining in weight involves not only the loss of the food he consumes, but all the injury resulting from stunting his growth. Few are aware of the damage done to young animals by prematurely arresting the growth of their bones and muscles. A stunted pig, calf, colt, or lamb has received an irreparable injury. You can no more fully make amends for the shock given to the vital functions, than you can give a horse a new seeing eye in place of one that has been put out by violence. No after-feeding of a horse will give him a new eye; and no good keeping will develop an animal frame perfect in all its parts after it has been stunted in youth. Most farmers attempt to keep too much stock, both in winter and summer, for their food to be manufactured into flesh, dairy products, or wool. A few superior animals well housed in winter, and well fed at all times, yield the largest profit. Of course, stables should be properly ventilated that all animals may have a full supply of pure air. Most stables, and all sheds, give too much of it, especially in cold wintry weather. Look out for a plenty of straw, or other litter, to absorb all urine, unless you have a tank or other reservoir for it to run into. Manure is now as valuable as money at ten per cent. compound interest; for all the crops that manure aids so much in their annual growth sell at high prices. It costs nearly as much to plow, plant, hoe, and harvest an acre of corn to obtain 25 bushels as 50 bushels; and manure will double the crop.

FLAX-CULTURE, AND FLAX-COTTON.

MR. R. T. BROWN, of Crawfordsville, in a communication to Gov. WRIGHT, President of the Indiana State Board of Agriculture, says :

I send you enclosed a few samples of flax cotton, presented to me by the Hon. H. L. ELLSWORTH, of Lafayette.

MR. ELLSWORTH has secured the machinery necessary for the manufacture of cotton, and will have it in operation early in the season. He has on hand the "stem" grown on 120 acres last season, which, from experiments already made, will, he supposes, yield about 300 pounds per acre of cotton, similar to No. 2 of the enclosed specimens. The expense of reducing the fibre to this state, after the stem is produced, is about two cents per pound, which, at the usual price for cotton (10c.), will leave eight cents per pound, or \$24 per acre for the farmer who produces it. To this must be added the value of the seed, which will range from \$6 to \$8 per acre—giving a final result of \$20 at least for each acre. This is Mr. ELLSWORTH'S calculation; it may be too high; but if we allow for the magnifying effect of his zeal one-third, or even one-half, still flax would be as profitable a crop, in proportion to the amount of labor required to produce it, as any of the staples in the country.

We sincerely hope that the patriotic efforts of Mr. ELLSWORTH and others to render the culture and manufacture of flax more remunerative may prove successful; and to aid them in their contemplated improvements, we have had engraved, drawings of the apparatus recommended by Prof. WILSON in his recent lecture at Saratoga before the New York State Agricultural Society for steeping flax by the latest improved process, and also of the cells and fibrous tissues of the plant. This learned and interesting discourse has been neatly printed in large type by C. M. SAXTON, agricultural book publisher, of New York, in a pamphlet form; and to any one at all interested in flax-culture, it is well worth the twenty-five cents charged for it.

While we wish all possible success to this new agricultural enterprise, and will aid it in any way that we reasonably can, it is due to candor to say that the idea of transforming the vascular tissue of flax into a substance having the properties peculiar, as we believe, to the cellular tissue of cotton, is utopian and impracticable. It may not, however, be necessary to effect any such transformation to produce an article from the bark of flax that may be carded like cotton and spun by similar machinery. It is the hand-labor required in the old processes for the production of fine linen fabrics that renders them so expensive, and not the original cost of flax in the bundle. Of the latter many thousands of tons are wasted in this country, after the seed has been removed, because the lint was regarded as valueless. The quantity saved, and returned at the last United States census, was 13,391,415 pounds. The quantity of seed saved was 562,810 bushels. Of the lint saved, more than half was grown in the State of Kentucky (a curious fact), her crop being 7,793,123 pounds. Virginia is the next largest producer of flax, and New York the next. Ohio farmers produce nearly fifty per cent. more flax seed than those of Kentucky—raising the crop mainly for the seed alone. They saved only 446,937 pounds lint in 1850—about the sixteenth part of the lint manufactured in Kentucky.

The structural arrangement of the stem of the flax plant, as shown in the engraving, is copied from Dr. SCHACHT'S Treatise, entitled *Physiologische Botanik, Die Pflanzenzelle*, (Berlin, 1852.) To separate the corticle filaments of the plant from the woody part, two agents, the one mechanical and the other chemical, have been employed. The old flax-brake and other appliances for dressing lint are well known to most of our readers. With these laborious mechanical processes, chemistry had nothing to do; and yet, the retting or "rotting" of flax, as it is more commonly called in this country, effects changes in the bark of the plant which are strictly chemical in their nature. A scientific knowledge of these changes forms the basis of all recent improvements in the preparations of lint for carding, spinning, and weaving, or spinning without carding. The minute filaments, or vascular tissues that constitute the bark of flax, are glued

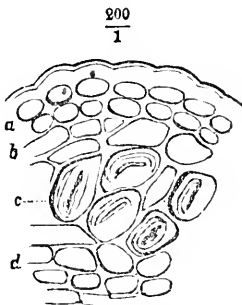
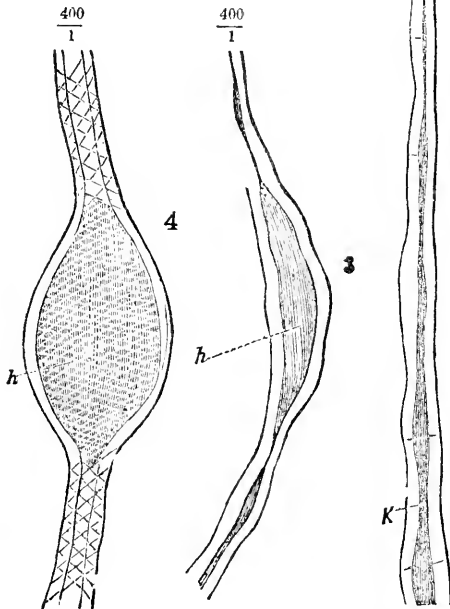


Fig. 1. Transverse Section of Straw.

a, Epidermis. b, Bark.
c, Fibres. d, Shove, or Woody center



Figs. 2, 3, 4, Longitudinal sections of Fibres—h, h, h, Cavities. Figs. 3 and 4, Ordinary Cavities. Fig. 4, Rarer kind.

together by a gummy mucilage, which needs to be dissolved out, either by exposing flax to rain and dew while spread out on the ground, or steeped in a vat or pond of water, or by the use of hot water in the manner soon to be described. The separation of this intercellular gum is very imperfect without fermentation and washing, which, when well done; render the tissue of flax as near like that of cotton as it can be. To dissolve the mucilage and remove it without damaging the filaments, by a cheap and speedy process, and without fermentation, has been the study of many ingenious chemists for the last quarter of a century.

The first establishment for using heated water to remove the cohesive matter from flax fibres, and facilitate the separation of the woody part, or shove, was erected at Mayo, in Ireland, in 1848; and Prof. WILSON informs us that now there are over twenty at work in different parts of Ireland, and several in England, which consume between 30,000 and 40,000 tons of straw annually. In this new and improved process fermentation is not avoided, but hastened and controlled, so that the desired result is attained much sooner, with more certainty, and less injury to the filaments. The temperature of the steep is kept between eighty and ninety degrees, and regulated at will by the attendant. On the Continent, yeast has been used to start the fermentation with advantage. In ten comparative experiments, made with nine different sorts of flax, it resulted that the average produce of 1200

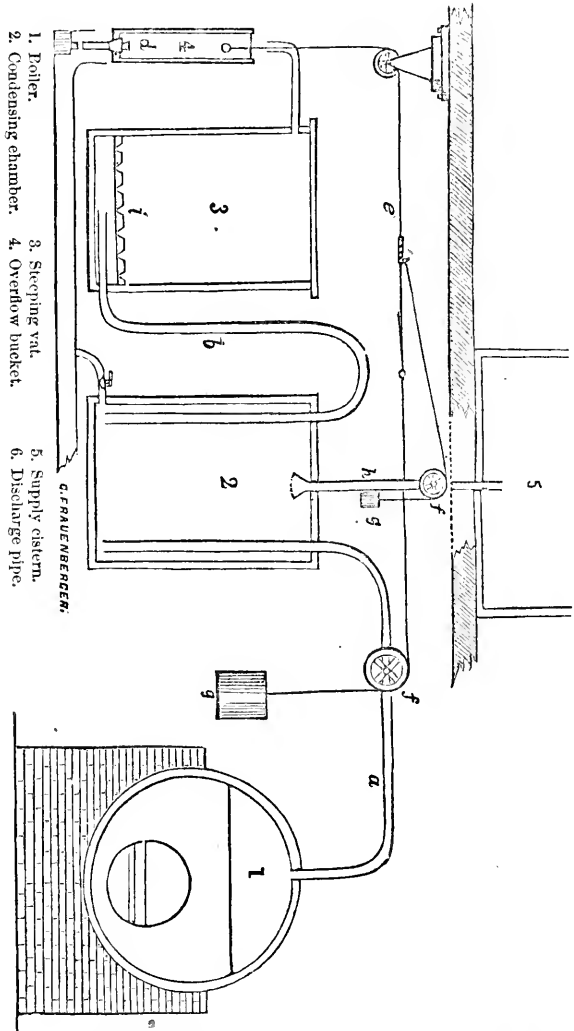
pounds of flax straw gave 144 pounds of dressed fibre in the hot steep, and only 118 pounds when steeped in the old way. In an old German process, sour whey was used with warm water for setting with decided advantage. M. CLAUSSEN uses a weak solution of potash or soda to dissolve out the nitrogenous matter in his patented process. The use of caustic potash for this purpose was tried more than a century ago; and Prof. WILSON adduces a great deal of instructive and interesting history on this branch of the art. A Mr. WATTS, of Glasgow, obtained a patent last year for an improvement in flax steeping, said to be much better than the plan of M. CLAUSSEN; and a Mr. BUCHANAN has recently patented an improvement on the plan of Mr. WATTS. This latest improvement will be given in the language of the learned lecturer, referring the reader to the lecture, as published by Mr. SAXTON, for a full and most satisfactory account of the subject.

"In this the steeping is effected by *repeated immersions* in a tank of heated water, arrangements being made by which the temperature is never allowed to exceed a certain degree—a point of great importance, both as regards the abstraction of the azotized extractive matter, and also the quality of fibre produced. It is well known that albuminous solutions, containing even a very small proportion of albumen (1 in 1000), coagulate at a temperature of 108°, and then become insoluble; and it is always considered that fibre is more or less injured if exposed beyond a certain high temperature. These two important points have been taken advantage of in BUCHANAN'S process; the temperature of the steep liquor is kept within a certain range of temperature, and the operation, both as regards time and produce, more satisfactorily performed.

The process is quite *automatic*, thus saving labor and the risks consequent upon carelessness; and the mechanical arrangements by which it is effected, are very simple and inexpensive. The accompanying diagram will, I hope, make the process clearly understood. The flax straw is placed in an open vessel (No. 3) termed the steeping vat, having a false bottom (*i*); a boiler (No. 1) generates the steam required; and between these two is placed a suitable vessel (No. 2), the condenser, of about the same capacity as No. 3, and communicating with that by the hot water pipe (*b*), and with the boiler by the steampipe (*a*). This center vessel or condensing chamber is filled with water from the cistern (No. 5), and steam is then blown in from the boiler. When the latent heat of the steam is absorbed, and condensation no longer takes place, the hot water is driven over into the steeping vat, and completely immerses its contents. The overflow pipe (*c*) then conveys a portion into the bucket (No. 4), which, overpowering the balance weights (*gg*), descends, drawing the chain (*ce*), which, being attached to the pulleys (*ff*) fixed on the cocks of the steam pipe (*a*), and of the condensing pipe (*h*), reverses their action by cutting off the steam and turning on a charge of cold water into the condenser. The steam in No. 2 is then rapidly condensed, and the liquor drawn back from the steep vat into which it had previously been forced. This completes the operation of immersion, which recommences immediately: for as soon as the overflow bucket

(No. 4) has reached a certain point in its descent, it strikes against a pin, having a screw adjustment, which causes the valve (*d*) at the bottom to open and discharge its contents into the discharge pipe (No. 6.) The bucket, then relieved of its load, resumes its original position, the balance weights (*gg*) act on the pulleys (*ff*), which again reverse the cocks, cutting off the cold water sparge, and turning on the steam to No. 2. This is repeated as often as may be required.

"So far as the experiments have gone, it has been found that by ten such immersions the whole of the coloring matter of the flax has been removed. These in practice would not occupy more than three or four hours. This, however, is subject to the test of the operations on a commercial scale which are now in progress in Scotland for carrying out the patent. [The patent for the



United States will be carried out by the American Flax Company, of which Mr. THOMAS KIMBER, Jr., of Philadelphia, is the Managing Director, to whom all applications in reference to it should be made.]

"By this process we have all the advantages obtained by WATTS—economy of products—increased economy of time, only four hours being required instead of twelve—and, in addition, great economy of labor. Another great improvement is claimed by BUCHANAN, his method of drying the steeped straw preparatory to scutching. This is usually a tedious and costly process as regards labor and arrangements. The fibre, too, is to a certain extent liable to be injured by the necessary handling. The ordinary mode is to place the flax thinly spread between two wooden laths, which, when closed by means of hooks or rings over their ends, firmly hold the stems: about fifty-six of these are required for a cwt. of flax. They are then carried to the drying shed and suspended from frames, where they remain exposed to the action of the air until they are dry. The time required depends on the weather—from three to four days to as many weeks. In WATTS' process, where steam is available, the process of manipulation is the same, but the drying is effected in a heated chamber in a much shorter time. BUCHANAN'S method is entirely different. He proposes to effect the desiccation in the same vat in which the flax was steeped, by means of dry warm air, which is driven through it in unlimited quantities, at a very little expense. The air is readily obtained in the desired state by causing it to pass through porous earthenware pipes set across the lower part of the chimney, which, while heating the air, deprive it of its moisture. These communicate on the one side with a blower driven by the engine, and on the other side with a pipe which conveys the heated air to the lower part of the vat containing the flax to be dried. This is all the arrangement needed. The blower drives the air through the earthenware pipes; its temperature is then raised, and moisture abstracted, and entering the bottom of the steeping-vat, it comes in contact with the flax and passes through it, absorbing and carrying off the moisture, and leaving the flax in a perfectly dry state. It is then ready to be rolled and scutched. The patentee's experiments induce him to believe that by this process the entire operation of converting the straw into dressed fibre may be effected in the working-day, or twelve hours; and, from the simple nature of the mechanical arrangements and of the materials required, a very moderate outlay would suffice for the formation of an establishment equal to the probable produce of a given district. The steeping process being entirely automatic, the cost of labor is very small indeed, and the whole expenses of the operation materially reduced."

AGRICULTURAL SCHOOLS.—Mr. C. L. FLEISHMAN, who was educated in one of the German agricultural schools, says :

Who is not acquainted with the history of the wars which enervated Germany—which exhausted all her pecuniary means and brought her to the verge of utter ruin? Germany was after the close of the French war in a pitiable condition; and had it not been for her kind soils, which for thousands of years enabled her to stand the severe calamities which befell her during that long period, Germany would now be a second Greece. She adopted, at an early period, various means to improve her agriculture. Professorships of Agriculture were instituted at the Universities—periodicals and journals were published to disseminate modern improvements—fairs and meetings were regularly held to encourage the farmer; but all that gave not the desired results. A thorough education was found necessary, practical and scientific education, which enables the farmer to enhance the value of his landed property, as circumstances and condition allow it, to give them the knowledge to improve and change the various modes of culture, *and to be more than a mere imitator*. Proper agricultural schools were wanted, and the monarchs of Germany spared no means to accomplish this important object. The ablest men were selected for the Institutions, and nothing was spared to induce them to take charge of them. The late King of Prussia, who like his ancestors, paid great attention to all improvements in husbandry, was the first to establish such an institution. He invited TULER, the celebrated German agriculturist, to settle within his kingdom and introduce Agricultural schools. TULER accepted his offer, and left Cella for Berlin. The other monarchs of Germany followed the example of the King of Prussia, and Germany had, in 1847, sixty-two large Institutions. With some of them Forests and Veterinary schools are connected. Austria then had 9; Prussia 12; Saxony 5; Bavaria 16; Hanover 2; Wurtemberg 8; and other States 14; in all 62.

There is a capital of \$80,000,000 invested in the culture of the cane in the States of Florida, Louisiana, and Texas. These States produce annually about 308,000,000 pounds of sugar, beside which foreign importations are made to the extent of 350,000,000 pounds. Even a short crop of sugar at the South, which reduces the usual production only 100,000,000 or 150,000,000 pounds, invariably advances the rate of sugar from one to one and a half cents per pound; which, on the entire consumption of 660,000,000, is equal at one cent to \$6,500,000, and at one and a half cents to about \$10,000,000.

Horticultural Department.

CONDUCTED BY P. BARRY.

YEARS ago horticulture was made a special department of this journal, and placed under my charge. From that time until the present my small monthly contributions have been made with great pleasure, and, I believe, with some profit, both to myself and others. I would gladly continue them, but other engagements compel me to surrender the charge to some one who may have sufficient time to do it justice. I feel quite confident that my withdrawal will be no detriment to the journal, but rather an advantage, as the publisher will be able to fill the pages I have occupied with more varied and instructive matter.

Within ten years horticulture in this country has made wonderful progress. At the time I began to contribute to this journal, gardening occupied a very small share of public attention; now, there is scarcely an individual in town or country who does not feel an interest in it. The planting of orchards, laying out gardens, and the embellishment of grounds, are among the most popular topics of the day, not even excepting *politics*. The commerce of horticulture has grown up from a petty, unnoticeable traffic, to an important pursuit, actually surprising people by the rapidity of its growth and the magnitude of its operations. Such a spectacle has never been witnessed in any other country, and nothing connected with American progress affords a more striking proof of the salutary influence of free institutions on industrial pursuits, or of the wonderful activity and enterprise of the American people.

What horticulture in this country will be twenty years hence, is an interesting inquiry. Our career in this pursuit has just commenced. Heretofore we have been laboring under serious disadvantages, the greatest of which has been inexperience. The history of almost every man's gardening efforts has been, for a long time, a series of mishaps. How to plant, what to plant, and when to plant, were all unsolved problems to the multitude. We had no books worth naming, founded on actual American practice, to guide us; like travelers in a wild, unknown land, without a guide or compass, we had to guess at the way—and after long and perplexing efforts, have frequently found ourselves, wearied and discouraged, back at our starting point. We are in this position, however, no longer. Those who now embark in gardening have the dearly bought and valuable experience of others to guide them, and they may advance with confidence and rapidity.

In parting with the readers of the *Farmer*, I may well congratulate them on such a state of things; and I cannot refrain from calling upon them to aid one another, by communicating their experience, without hesitation or delicacy, through its pages. This is the sure way to promote improvement. The results of actual practice, gathered up from various localities, whether successful or unsuccessful, are more instructive than the regular contributions of any individual, whatever his experience or capacity may be.

I part with the gentlemen with whom I have so long associated, on the most friendly terms; indeed, there has never been a single disagreeable word exchanged between either proprietors or editors and myself, from the first day I became connected with them. They personally, their journal, and its readers, have all my best wishes; and as leisure permits, I shall take occasion to communicate with them on some of the topics of the times connected with horticulture.

P. BARRY.

The reader will see by the above that our and their friend, who has so long and so ably conducted the Horticultural Department of this journal, will no longer occupy the responsible position of *Editor*; while, as heretofore, he will "take occasion to commu-

nicate" with its readers "on topics connected with horticulture." Mr. B. is a gentleman who stands highest with those who have seen most of him, and know him best. His pen has made him public property; but the public, no more than individuals, can properly urge a man to sacrifice his personal interests for their benefit. While Mr. BARRY will write less for the *Farmer* than heretofore, other able and skillful horticulturists will contribute much more to its pages. The services of such have been secured for the next and future volumes of this standard work.

DANIEL LEE.

THE FALLEN LEAVES.

PASSING along the street the other day, we saw a gentleman deliberately sweep together the leaves that had fallen around his house, and burn them on the open street, just as though they contained the germ of some fearful contagious disease. Our first impulse was to pull up and remonstrate with him on such a waste of one of the most valuable fertilizers for his trees and his garden crops that he could possibly find; but his earnest and determined air repelled us, and we hurried on, leaving him to finish his work to his own liking. We then asked ourselves what thoughts occupied this man's mind while engaged in such a curious method of dressing his grounds. Were they such as the poet or philosopher would indulge in? No, indeed! poetry and philosophy he regards as nonsense; we know the man too well to impute any such thoughts to him. He is one of the most inveterate money-makers—worth probably half a million of dollars—living in a shabby old house, on a small lot, fifty by a hundred feet, with a few miserable, neglected trees around it. Fallen leaves were to him merely a nuisance, that he must get rid of in the cheapest possible way. It cost perhaps fifty cents less to rake them together and burn them, than to put them into a cart or wheelbarrow and carry them to the manure heap. This, he said to himself, is a clear gain of fifty cents.

We have seen the same thing done on a much larger scale: a neighbor of ours, some years ago, made a practice of setting fire to the dry leaves and grass on his premises in the spring, and allowing the fire to spread all over his grounds, to the terror of the neighborhood—and all this to *save* a few dollars that it would cost to rake them up and carry them off to the manure heap. The same man purchased manure every season, at the rate of about seventy-five cents to a dollar per wagon load. It must be admitted that few people take this method of destroying their fallen leaves; but very few seem to appreciate their proper value, or turn them to proper account.

Save the fallen leaves, we say to every man who has a garden. Carry them to some corner, and mix them with a little lime, earth, or stable manure, to promote decay, and you will have a manure that may be safely applied to every tree, plant, or flower that you grow. Many gardens may be in such a condition as not to require strong stable manure, but would be greatly benefitted by vegetable mold, such as results from decayed leaves.

To fruit trees it may be applied with perfect safety; there is no danger of a surfeit, as there always is in applying powerful manures. It produces a sound, healthy, and hardy growth, inclined to fruitfulness. We have never used any material for mulching that has so well satisfied us in its results as decayed leaves. Last summer we mulched some newly-transplanted Pear trees with them, covering the ground about the trees, as far as the roots extended, three or four inches deep, and although we had a drouth of three months' duration, the trees all lived and thrived admirably.

Between the rows of Pear trees there were Strawberries planted; and as soon as the runners reached the leaf-mold they struck root into it, with the most extraordinary vigor, forming large, luxuriant plants, with roots a foot long, in the course of a few weeks; and when taken up large quantities of the mold adhered to them, so completely had

they penetrated it. A top dressing of this leaf-mold would be one of the very best applications to a Strawberry bed. No man should think of using tan bark if he can get rotten leaves; indeed, we have no faith in tan bark any way as a mulching.

In the preparation of hot-beds and forcing-pits, leaves are of great value, as they make the heat milder and more durable. One-half or one-third leaves, and the remainder stable manure, well mixed, make an excellent hot-bed.

Gardens are often ruined by the application, year after year, of one kind of manure—the soil becomes sodden and sour—and if a good dressing of rotten leaves be given occasionally, it would restore it to a more healthy and natural condition for cropping. There is not sufficient discrimination exercised in the application of manure. Most people seem to suppose that if they apply an abundance of enriching material, no matter what it be, they should secure good crops, and when they fail they are at a loss to know why. The fact is, a soil may be *worn out* by a continued application of the same kind of manure, as well as by continued cropping without manure. This every gardener knows. A change is necessary; and under all conditions leaf-mold is good. It supplies the very substances of which the soil has been deprived by previous crops, and in a state perfectly harmless.

The leisure season is at hand, and we recommend those who have gardens to devote a portion of it to the gathering up of leaves.

GARDEN HINTS FOR DECEMBER.—It often happens that even here at the north a considerable portion of this month is open, and allows out-door work to be carried on. Last year we planted trees till within a few days of Christmas. Every fine day should be improved, until the ground is frozen solid. All kitchen gardens should be spaded up in the fall, and manured. If grubs are troublesome, apply a dressing of soot and ashes.

Fruit trees should be mulched. Mulching protects the roots from frost, and renders the tree less sensible to sudden and violent changes of temperature. If the ground be already rich, and manure dangerous, mulch with leaves. Spread them about the tree six inches deep, and throw a little earth over them, to keep them from being blown away. Stake up carefully, or in some way secure, newly planted trees from being rocked about by the winds: an opening is soon made at the base of the tree, in which water lodges, and when it freezes the tree is frequently destroyed.

Cover *Strawberry beds* with leaves; some kinds are tender, and are nearly killed out by a severe winter, if there be little snow. All sorts, hardy or not, are the better for being covered. The leaves can be raked off on the opening of spring.

Raspberries should be protected, and the best way is to fasten the canes to the ground by means of a hooked peg, and cover with leaves or some earth. When the canes are much injured by winter, the crop is poor. Protection is cheap and safe.

Beds of bulbous roots, such as Hyacinths, Tulips, Japan Lilies, &c., should be covered with leaves. Carnations, and other herbaceous plants, may be nicely protected by a covering of moss from the wood.

Rare or tender evergreen trees may be very tastefully protected, by boughs of evergreens fastened around them by unobtrusive ties. This is safer than straw sheathing, and much less unsightly in the landscape.

The *fruit room* and *root cellar* will need frequent examination, to see that all decaying objects are removed promptly. Both these places should be kept uniformly cool as possible, not to freeze, and quite dry.

Dahlia roots are often lost by being housed in a damp state, and left in a cellar. They should be well dried, even if fire heat be necessary, and then put on shelves in a dry place. They must also be looked to occasionally, and moldy, decaying parts removed, and, if need be, moved to a dryer place.

Editor's Table.

THE GENESEE FARMER TO ITS READERS AND PATRONS.—At the close of the Fourteenth Volume, second series, of this standard work, it is pleasant to know that it has outlived a whole generation of men since the first *Genesee Farmer* was published in the flourishing village of Rochester.—With increasing years, and the unparalleled growth of Western New York, it has gained wisdom, strength, and every advantage to serve the great Farming Interest, disconnected from all private speculations, and with no other purpose than to benefit its Readers and Patrons by every means within the reach and scope of honorable journalism.

We hope and trust that every subscriber to the present volume will promptly send in his name and the trifle asked for the FIFTEENTH VOLUME, second series, the first number of which will be ready for mailing by the time this meets the eye of most of our friends. Grateful to you all for past favors, we ask you to bear in mind the fact, that this Journal was started at the low price of *fifty cents a year*, when there was not another cheap paper of the kind in the civilized world. A popular taste for Agricultural and Horticultural reading had to be created in this country; nor is that difficult and useful task yet fully accomplished. Much, however, has already been done; and while life lasts, we shall work on, and work ever, to learn and teach the true principles of Rural Economy. Now is the time for every friend of agriculture to aid the glorious cause by extending the circulation of the *Genesee Farmer*. It relies for support entirely on the voluntary assistance of its Readers and Patrons. Properly studied, every number we issue is worth to the subscriber the price paid for a volume. The average compensation we receive is less than three cents a number; and we are contented with oil enough to keep the wheels in motion, believing that it is better for the human brain, and human muscles, to wear out than to rust out. If circumstances prevent the accomplishment of all the good which we may desire to effectuate, that is no reason why we should not do so much good as our means and circumstances permit.

Friends, you can, if you will, render the Rural Industry of your country an essential service, by procuring more readers of, and subscribers to, this standard Journal of American Agriculture.

It is truly a national work, and one that deals only in facts and principles. It contains more reliable *Statistics* relating to Stock-growing, Sheep and Dairy Husbandry, Crops, and the Art and Science of Tillage, than can be found in any other paper published in the United States or Europe. Our object is to render the critical study of Agricultural Statistics popular with the American people. Vague generalities are devoid of instruction. If our present State and National Statistics are defective, as we know them to be, public opinion on the subject must be enlightened before a reform can be urged with success. The People must be moved before any substantial progress can be made. Friends of true progress, help us to move the People, that our Agriculture, instead of wearing out the soil, and consuming both the timber and fertility of the country, may enrich every arable acre in the Republic, and so improve its Farms and Farmers, its Gardens and Gardeners, its Fruits, Cereals, and Domestic Animals, that our noble profession may become as independent, cultivated, learned, and prosperous, as it is useful to mankind.

Brother Farmers, let us magnify our calling, by cordially uniting our best efforts for its elevation. It pre-eminently deserves more care, more study, and more mutual instruction, among the owners and cultivators of the soil. Every thing depends on your action in the premises, whether Agriculture goes up, or goes down, for the next twenty years. Rest assured, it can not rise without an earnest effort in its behalf. Prices are now most encouraging for every thing you sell; while the paper-maker, the printer, and the editor, pay more for their grain or flour—their meat, and other provisions—their vegetables, fruits, firewood, rents, and other family expenses—than ever before. Think of these things, and do not forget your old friend—THE GENESEE FARMER FOR 1854.

DEATH OF JOHN DELAFIELD.—It is our painful duty to record the death of the President of the New York State Agricultural College, the Hon. JOHN DELAFIELD, at his residence near Geneva on the 22d ultimo.

He was born in New York, 1786, and graduated at Columbia College. On leaving college he was, for a time, engaged as clerk in the counting-house of a firm largely connected with the East

India trade. It was on his father's estate, at Newton, Long Island, that, at a later period, he first exhibited that fondness for agricultural pursuits which distinguished him through life.

Shortly before the commencement of the last war, he was sent, under a commission of the United States Government, to command a fleet of merchant vessels. Soon after hostilities commenced, he was prisoner on parole, in England, having been wrecked on the British coast.—During the war he was allowed to visit the agricultural districts, and became acquainted with several eminent agriculturists. After peace was established, he was induced to remain in England, and for eight or nine years was well known in the London Exchange as the American Banker. By the influence which he thus acquired among capitalists, he was enabled to spread foreign money over the country, especially in the Southern and Western States.

It was in 1839 that he effected the loan for the State of Illinois, but the failure of payment and non-fulfilment of agreements by that State nearly proved his ruin. Although for twenty years he had conducted one of the most successful banking-houses in New York, he never lost sight of his favorite science, Agriculture; and annoyed by the failure of his monetary speculations, he resolved to withdraw from active life in the cities, and to turn farmer in earnest. In 1842 he removed to a farm which he had purchased at Rose Hill, Seneca county, near Geneva, where he gave his attention especially to the rearing of live stock. In 1851 he was elected President of the New York State Agricultural Society, and at the time of his death was President elect of the new Agricultural College.

We had the pleasure of hearing him deliver an address before the Monroe County Agricultural Society, in Rochester, a few weeks ago; and also of learning his plans for raising the funds necessary to place the Agricultural College on a firm basis. Alas, that sudden death (by a disease of the heart) should threaten to destroy this institution in its embryonic state! It has never received a dollar from the Legislature; and it can not be adequately endowed by donations from individuals, without great personal efforts on the part of its friends. Whether such efforts will now be made, we are unable to say. We had consented to go out with Mr. DELAFIELD and address meetings of farmers and others, in Monroe and the adjoining counties, to obtain subscriptions for the College. He was confident of success; one gentleman in Missouri offered him a thousand dollars. It is now thirty-two years since Judge BUEL obtained

the first charter for an Agricultural School, or College, in this State; but death has made sad inroads upon the devoted friends of this branch of useful knowledge. BUEL, GAYLORD, DOWNING, and DELAFIELD, have been cut down in the midst of their great and patriotic labors; and five hundred thousand farmers remain in the Empire State without a single school, or an acre of land, devoted to the advancement of rural arts and sciences.

ENGLISH AND AMERICAN HORSES.—Among all the speeches made by Governors, Ex-Governors, Honorables, and amateur farmers at the Springfield Horse Exhibition, no one but that of CHAUNCEY P. HOLCOMB, Esq., of Delaware, (a sensible Philadelphia lawyer turned farmer), discussed topics pertinent to the occasion. Mr. H. said that he had recently visited England, and partly for the purpose of buying a good horse, provided he could find one for sale that would be likely to improve the stock in his section of country. He returned without purchasing any, and thus comments on the English system of breeding this noble animal.

He wished to tell his brother farmers what the course of breeding was in England, and to show the result upon the stock, that no American farmer need go further in the same direction. They were aware that when the English breeders united the blood of the Barb with the Turk and the Arab, no better horses were to be found in the world. They would then run four miles and repeat in 1.40 and 1.24. Now, instead of running four miles and repeating, they only ran two or three, and did not repeat at all. It was a single dash of two, two and a half, and, at the Derby, of three miles, and that was all. He had told eminent breeders there that the horses in this country ran four miles and repeated—repeating, sometimes, two or three times. They did not doubt the fact. They said they had formerly such breeds there, but it was not so now. In corroboration of his statements, Mr. H. mentioned that in a conversation he recently had with his friend from Virginia (Mr. BORTS), he assured him that some horses of the Boston blood ran, the other day, at Richmond, four miles in 7.46, 7.46½, and 7.49. They would see in that remarkable time the last heat was run—about three seconds longer than the first. They had not got any horses like these in England; they would be very proud of them if they had.

Why was this degeneracy? In the first place, he was very much surprised, on visiting England, to find that horse-racing, if it was not the business of the nation, was a very great amusement. In every city, town, and village, they had betting-houses, where all the members of the community, the serving-maid as well as the nobleman, entered their bets, through the whole year, to be decided when the races came off. So great had this evil become, that a bill was passed at the last session of Parliament, designed to put these betting-houses down. Now, the result of this was, that every attention was paid to getting *hobs*. He had stood by the side of two year old colts, fifteen hands high and he asked his friend, Mr. JOHN DAY, how it was possible to make up those colts in that way. Mr. DAY told him that they were entered to run at two years old, three years old, and they were entered shortly after they were foaled, to run at a certain time. The dam was kept as high as possible, and in the paddock there was a little box, into which the colt could run, where oat meal was placed, and oats were always before him. They were stuffed with all the oats they could be induced to eat. The consequence was, that it was quite impossible that they should have any bone. They ran at two, three, and four years old; but at all the races which he attended, he saw but one or two entered to run even at five years old, for by that time they were broken down.

He wished to say there—since they had come together to speak out freely their opinions—what he thought. He believed that they needed to put two inches upon the height of their horses; and those two inches of height the breeders must give. They could do it. They would give them five years—ten, if they wished—but they must put their horses up two inches higher. Gentlemen might say they were tall enough for some purposes; but what he wished to do was to supply the luxuries of cities. The horse, with the citizen, was an article of luxury. They would pay almost any price, if the breeders would only get them up to the right height. "Now, gentlemen," said Mr. H., "get your Morgans and your Black Hawks up these two inches!" (Applause.)

The above remarks are practical and important, although we are inclined to believe that the popular city taste for horses well up on long legs is vicious and needs correction. All experience goes to prove the hardness of medium sized, and small, tightly-made horses; while such as have much day light under their bellies, colts that have been pushed on grain from the time they could eat oat meal, make horses with feeble constitutions, with no capacity to endure hardships, which are comparatively worthless for service.—As we have from our old colonial native stock the best cows in the world for converting grass into milk, butter, and cheese, so we have the best horses for all work that can be found in any country. These remarks are made in no boastful spirit, and their truth will be sustained by satisfactory references and authority in the next volume of this standard work on Tillage and Husbandry.

FIRST STATE FAIR IN NORTH CAROLINA.—It gives us sincere pleasure to learn that a State Agricultural Society has been organized under the most favorable auspices in the good old North State. It has a delightful climate, and more excellent farming land than it gets credit for by travelers passing through it on the great thoroughfare between the Northern and Southern States. The *Raleigh Register* gives the following animated account of the great State Fair:

Never, within our editorial experience, have we chronicled any event with more heartfelt gratification than that which we now feel in recording the complete success of the first North Carolina State Fair! We say *complete success*: for, whether we take into consideration the immense number and the high respectability of the persons present—the character of the exhibition itself—the demonstrations which met the eye at every gaze of the available and inexhaustible resources of the State—or the indications of State pride and State patriotism, which every where found vent—it was, in each and every respect, a triumph for North Carolina—a triumph which all her sons, who have her welfare and reputation at heart, may well be proud! We confess that at no previous time have we gloried more in the fact that we were a citizens of North Carolina, than when, on the opening of this fair, we beheld the evidences of a greatness, prosperity, and *progress*, that put to shame the empty derision of the wifings who have made her a butt of their ridicule. In no State of this Union has an experimental, initiatory fair, been so *successful* or so *eminently creditable*. This is the unanimous declaration of those from abroad who have favored us with their presence. Nearly every section of the State, and every industrial pursuit within its borders, were represented. The East sent its the staples and its blooded stock; the West, its splendid cattle and its rich

minerals. The farmer poured in his agricultural products—the mechanic brought forward splendid specimens of his skill—the native artist exhibited the productions of his pen or his pencil—and the ladies of the State, never behind-hand in any good work or beneficent object, crowned the excellence of the whole with the multiplied beauties which nature had yielded to their culture, and the varied and tasteful attractions which had sprung from their handiwork.

To chronicle the agricultural progress of this vast empire, we expect soon to be under the necessity of publishing another paper as large as the *Farmer* once a month, so that the readers of both may have a semi-monthly review of all the important events and markets affecting the agricultural interest.

AGRICULTURAL ADDRESSES.—We are indebted to our numerous friends and correspondents, for many favors in the way of copies of addresses delivered at the State and County Fairs during the past autumn. They evince a gratifying advance in the rural literature of the country. We have marked several passages for copying and comment in future.

Large and successful exhibitions have been held, for the first time, in Louisville, Ky., Raleigh, N. C., Richmond, Va., Springfield, Ill., and in scores of counties. Progress in agriculture, eloquent speeches, and sincere devotion to this paramount interest, are visible in nearly every State in the Union. At no distant day, all the earnest friends of rural improvement will unite their efforts, and accomplish as much in one year as they now do in ten. Harmony and co-operation are the only elements of substantial advancement that we still lack to achieve great things. Time will fuse all injurious obstacles, and bring men who really have one object in view to act in concert, and with infinitely greater effect. Agricultural addresses should tend in this direction. Isolation is weakness. If it were not so, no two families need have the least intercourse whatever, and all society be extinguished forever.

The recent great match on Long Island for \$10,000, between "Prince," a trotter, and "Hero," a pacer—distance ten miles, in harness—was won easily by the former. "Prince" is a chestnut gelding, raised in Kentucky, nearly if not quite thorough bred, of the Bertrand stock, his sire being "Woodpecker." He is the property of Dick TENBROECK, who purchased him and another at Louisville last May, for \$1,500. He has already won some \$16,000 with "Prince," and refused a cash offer of \$2,000.

In an advertisement of LONGETT & GRIFFING, last month, we made a mistake, putting guano at \$15 per ton, instead of \$45. The reader, no doubt, corrected the mistake.

ENTERPRISE IN FARMING.—In no other pursuit are enterprise and sound business energy better rewarded than in agriculture. "Slow coaches" in farming, like the old stage coaches in competition with railways and locomotives, don't pay. Time is every thing in turning capital in tillage and husbandry. Instead of keeping a pig till he is two years old before you pocket the cash for the food he eats, turn his bread and butter into money every six months, at least. In this way you will turn your labor into gold four times over, with a good profit each time, where your father and grand-father did once, with a small profit. The same principle applies to the production of beef, and every branch of husbandry.

Enterprise in farming is the order of the day; and such as cling to the effete notions of the past, refuse to read agricultural papers, and oppose all progress, will be lost and petrified as thoroughly as Lot's wife. She was unwilling to look steadily ahead, and many cultivators imitate her bad example. Such a spirit of rebellion against advancement is certainly punished, sooner or later. Blind, headlong precipitancy, is equally to be avoided. "Look before you leap" is a wise saw, venerable for its antiquity. To look closely into rural affairs, implies a good deal of thought and patient research. Knowledge never comes without labor. The most profitable study is itself nothing but honest work.

CONDENSED CORRESPONDENCE.—MR. ROSS, of London, Canada West, writes that he has been a keeper of bees for fifty years, and has had much trouble in preventing moths from injuring and destroying this valuable insect. He says that moths seek for the pollen of flowers collected by bees as suitable food for their young; and that he has trapped many of these depredators by "placing a box with its mouth open, and pieces of comb with pollen (bee-bread) in it. After sunset, as then is their time, I take a candle in my hand, and have killed a dozen at once every half hour in every trap I set. I have commenced making my boxes with double heads. The upper one lifts off at pleasure, to see if any moths are there; the under head is full of holes, one-fourth of an inch from the upper head, between which they have a quiet retreat from the bees, where they spin their web. Still, this is not sufficient. The only way to prevent their entering beehives is to see that there are no cracks or openings, and to close the entrance for the bees every night when they stop work. This is done by a fine wire cloth which admits the air when the entry is shut; then remove the wire gauze in

the morning, and the cure will be perfect." We thank Mr. Ross for his instructive suggestions, derived from long and successful experience.

A friend in Washtenaw county, Michigan, writes us at some length on the subject of the decrease in the number of sheep in this and other States, and suggests that farmers petition Congress on the subject of the present duty on imported wool. He fears, and not without reason, that the impost of 30 per cent. *ad valorem* may be reduced to 20, perhaps 15, at the next session. At present the duty on wool is five per cent. higher than on broadcloths and coarse woolens, of which manufacturers complain as a bounty against their pursuit. The subject is of considerable importance, but has two sides to it, and, unfortunately, both are political. Farmers seldom act earnestly and effectively together to advance their own interests, as manufacturers and merchants do to promote theirs.

Our correspondent adds in a postscript that autumn sown wheat "looks slim, owing to the dry weather." His last crop averaged twenty-seven bushels per acre, which we regard as an evidence of good farming. Clover, seeded last spring, and oats were poor crops; hay and corn about a fair average.

HIGH PRICE OF WHEAT.—Rochester millers are now (November 11) paying \$1.52 a bushel for wheat, and grinding thirty-seven thousand bushels a day at that. Our farmers are literally coining money, and we rejoice at their prosperity. Let every one subscribe promptly for the *Genesee Farmer*, and, our word for it, they will thank us at the close of the year for the vast fund of useful information which it has furnished them, at a mere nominal price.

Wheat-culture has been our special study for a quarter of a century, and we have facts in relation to this branch of tillage to communicate, never yet given to the public.

THE *Scientific American* says that Dr. JAMES K. DAVIS, who went out to Turkey seven or eight years ago, on invitation of the Sultan, to attempt the cultivation of cotton, failed in that enterprise, but brought back some Persian goats, which produce the cashmere wool, and from which he is raising up a flock of goats that promise to be a valuable addition to the stock of the country.

A GREAT WHEAT CROP.—The *Le Roy* (N. Y.) *Democrat* says that Hon. A. S. UPHAM, of that village, from a field of one hundred acres, has raised and gathered, in good order, three thousand six hundred bushels of wheat the present season.

MYSTERIES OF BEE-KEEPING EXPLAINED: being a complete Analysis of the whole subject. By M. QUINBY.

MR. QUINBY has evidently had large experience as a bee-keeper; and his work is at once comprehensive, plainly written, and full of original thought, prompted by personal observations of the industrious insect of which it treats. The more of such works published the better; and Mr. SAXTON is rendering the country an essential service, by making its agricultural literature more popular, instructive, and interesting. The letter-press, paper, and binding of his books, deserve commendation; and the one under consideration, which contains 376 duodecimo pages, will be sent by mail, free of postage, for a dollar.

LANDSCAPE GARDENING; OR, PARKS AND PLEASURE GROUNDS: with Practical Notes on Country Residences, Villas, Public Parks, and Gardens. By CHARLES H. SMITH, Landscape Gardener, Garden Architect, etc. With Notes and Additions, by LEWIS F. ALLEN, author of Rural Architecture, &c. Published by C. M. SAXTON, New York, Agricultural Book Publisher.

This is a reprint of an English manual on landscape gardening, written in a plain style, by an intelligent, practical man, who appears to understand his subject. It treats of planting fruit, forest, and ornamental trees, of kitchen gardens, and other matters of general interest, beside parks, villas, and landscape gardening. It is a book that ought to be read by every one who is so fortunate as to own a quarter of an acre of ground. Price, \$1.25.

ELEMENTS OF AGRICULTURAL CHEMISTRY AND GEOLOGY. By JAMES F. W. JOHNSTON, M. A., F. R. SS. L. and E. With a complete Index and Preface, by SIMON BROWN, editor of the New England Farmer.

No agricultural writer in England is better known in this country than Mr. JOHNSTON; and we are happy to see that some errors in his Lectures have been corrected in this later and more condensed work.

PRINCE'S MELODEONS.—Our readers have noticed the advertisement of GEO. W. PRINCE & Co., in previous numbers of the *Farmer*. Being well acquainted with these instruments, we can say that they are the best extant—the smaller ones just the thing for the parlor, and the large size unequalled as an instrument for small churches. Our friends would do well to note this fact.

Inquiries and Answers.

ORCHARD GRASS.—A subscriber wishes to learn if orchard grass has been much grown at the North; and we shall be thankful for any information on the subject. Our own experiments with it have not been successful. We have twice attempted to cultivate it in the District of Colum-

bia. We have, however, often seen it growing. It is, we believe, more cultivated in Pennsylvania, Ohio, and Kentucky than in more northern States. Our correspondent resides in Wayne county, New York, and desires to learn the kind of land to which it is best adapted, the quantity of seed to be sown per acre, &c.

He suggests that we should publish the *Genesee Farmer* weekly, and devote a part of the paper to the great mechanical interest of the country. The idea of a weekly paper addressed to the producing classes generally, but more especially to farmers and mechanics, we have long regarded with favor. But some how the 250,000 mechanics and 500,000 farmers in the State of New York have always been disinclined to co-operate in any way to build up their common interests. They permit a few politicians to use them as the working men of political parties from generation to generation; and what fruits which are really valuable do these partizan labors bring forth? Weigh them in an even balance, and see how little they accomplish to elevate the honest industry of the country, whether agricultural or mechanical!

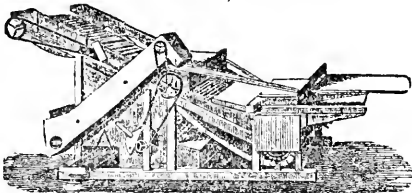
There is still great room for improvement in our farming implements, while there are many improvements already invented which are generally unknown. Inventors and manufacturers will do well to advertise their goods in agricultural papers.

VITALITY OF EGGS.—It is well known that eggs will keep a considerable time in milk of lime, or other means of entirely excluding atmosphere. We have an account of some dug out of an old wall of a sacristy, near Lago, Maygiore, quite sound, after having been encased 300 years. It becomes, then, a curious inquiry, how long the productive vitality of eggs can exist in this state of atmospheric exclusion—whether they retain it like toads, snakes, and cold-blooded animals, sometimes found in solids? Can any of your readers give or refer us to any instances respondent to the question?

The vitality of all sound and duly impregnated eggs presents a wide field for economical and scientific investigation. Why should not the egg of a crocodile (they are about the size of a goose egg, but of equal bigness at both ends), excluded from the atmosphere and kept cool, preserve its vitality unimpaired for indefinite ages? May not the eggs of our domestic poultry, and of other birds, be kept for hatching months and years in a similar manner?

Since railroads enable farmers and others who raise poultry to send their produce fresh, and frequently, to market, this branch has assumed an importance never anticipated twenty years ago. The consumption of the flesh of fowls, and other domestic birds, is enormous; and it will increase as fast as the supply.

AGRICULTURAL IMPLEMENT MANUFACTORY,
CORNER OF CAROLINE & THIRD STREET,
BUFFALO, N. Y.



Pitts' Patent Separator—Improved Double Pin-
ton Horse Power—Pitts' Corn & Cob Mills, &c.

I HEREBY give notice that since the extension of the patent right on my Machine for Threshing and Cleaning Grain, I have removed to Buffalo, N. Y., where I have permanently located, and erected a large establishment for the future manufacture of the above Machines.

The Separator has been enlarged, improved, and rendered more permanent and durable in all its parts, while the Horse Power for strength, ease, durability and cheapness of repair is not surpassed by any in the United States. This Power is warranted to stand the full strength of eight horses—also to give as much effective or useful power when driven by one or two horses as any other Horse Power, whether constructed on the endless chain or lever principle. It was put on trial at the great exhibition of Horse Powers and Threshing Machines at Geneva, July last, 1852, where it received the New York State Agricultural Society's First Premium "for the best Horse Power for general purposes." The Separator, at the same trial, also received the Society's First Premium.

My Machines will thresh and clean from three to five hundred bushels of wheat per day, and other grain in proportion.

Two hundred of the above Machines are for sale at the Agricultural Works of the subscriber in this city, all warranted to be a better article than can be purchased at any other shop, and if they do not prove on trial to be so, I will take them off the hands of the purchasers at the price they may pay me for them.

I further notify all persons who are purchasing Horse Powers and Separators to be used in California or Oregon, that I will hold them accountable for any infringements of the rights secured to me by letters patent in the above Machines, as I am manufacturing a Horse Power and Separator expressly designed for that section.

All orders for the above Machines hereafter addressed to JOHN A. PITTS, Buffalo, N. Y., will receive prompt attention.

JOHN A. PITTS,
May, 1853—1f.

JOHN A. PITTS,
Buffalo, N. Y.

HAVE YOU A DISEASED LIVER?

THE question, though startling, is sufficiently suggestive, when the fact is taken into consideration that diseases of the Liver have become most alarmingly frequent in the United States. Indeed, there are few formidable diseases that are not in some way traceable to a deranged state of that important organ. Many of the complaints usually classed under the head of Consumption, have their origin in the Liver. "Any remedy that would insure regularity and healthful action in the Liver, would be a blessing to mankind," has been the exclamation of thousands. That remedy has been found; it is safe and sure. When a fair trial has been afforded it, it has never been known to fail.

Reader, have you any disease of the Liver, or disease which you believe proceeds from hepatic derangement? Lose not a moment, but purchase a box of Dr. McLane's Pills, and they will restore you to health. It is the only remedy yet discovered, in which implicit confidence may be placed.

Purchasers will be careful to ask for Dr. McLane's Celebrated Liver Pills, and take none else. There are other Pills, purporting to be Liver Pills, now before the public. Dr. McLane's Liver Pills, also his Celebrated Vermifuge, can now be had at all respectable Drug Stores in the United States and Canada.

Improved Fowls for Sale.

HAVING kept for several years the very best fowls to be procured, and having the past season added to my stock some exceedingly beautiful specimens, I have now a great number of fine young pairs, certainly as good as can be found in the country, which I will sell at a much lower price than that charged by fowl-leaders. I will sell the following varieties at five dollars per pair:

White Shanghai, Black Shanghai, Buff Shanghai, and Cochon China, and Brahma Pootra, and Speckled Shanghais (a very beautiful bird), at ten dollars per pair.

These fowls will be ready for delivery by the first of September, and I will coop them carefully, with feed, water, &c., and send by railroad or express, as desired, without charge, and warrant every fowl sent to be pure and fine. Orders are solicited.

Wm. VICK.

Rochester, N. Y., August 1, 1853.

French Zinc Paint.

THIS new and beautiful article of Paint is now offered to the trade and public, ground in prepared linsed oil, for the first time in this country. It has been used successfully in France for the last five years, where it has superseded white Lead as a paint.

The French Zinc when properly prepared and used, makes the most brilliant and durable white in use, and is entirely free from all poisonous qualities.

The French Zinc is not more expensive than white lead, and is prepared in such a manner that it requires no farther preparation for use, than to thin it with Turpentine or raw Oil to the consistency of white lead paint.

The French Zinc is very much whiter, and has a better body, than the New Jersey Zinc.

The French Zinc is offered dry, and prepared as above, in quantities to suit purchasers, at the Manufacturer's Depot, No. 17 Buffalo st., Rochester, N. Y.

M. F. REYNOLDS.

PERUVIAN GUANO.

WE are receiving our supply of Peruvian Guano, per ships "Blanchard," "Senator," and "Gray Feather" from the Chincha Islands, and are now prepared to make contracts for the spring supply. As the demand is large, we would advise all who may be in want of this valuable manure to make early application. Price, \$45 per ton of 2000 pounds. Be particular to observe that every bag is branded—

No. 1.

WARRANTED PERUVIAN
GUANO.

IMPORTED INTO THE UNITED STATES BY
F. BARREDA BROTHERS,
FOR THE PERUVIAN GOVERNMENT.

LONGETT & GRIFFING,
State Agricultural Warehouse, 25 Cliff st., New York.
November 1, 1853.—3t.

WHAT DO THE PHYSICIANS SAY?

LISTEN to the testimony of an eminent physician in favor of McLane's Vermifuge, which is now universally acknowledged to be the best in use; even members of the medical faculty (who are so often opposed to the use of patent medicines), can not withhold their approval of this invaluable remedy:

LIND, Stark Co., Ohio Jan. 8, 1849.

I have used Dr. McLane's Worm Specific in my private practice, and am prepared to say that the unparalleled success with which I have prescribed its use, both for children and adults, induces me to say the most in its favor of any specific or patent medicine ever before brought to my notice. The mode of administration, the smallness of the dose, and the certainty of its efficacious effects, give it, in my opinion, a decided advantage over any other medicine of the kind before the public.

Purchasers will please be careful to ask for Dr. McLane's Celebrated Vermifuge, and take none else. All other Vermifuges, in comparison, are worthless. Dr. McLane's genuine Vermifuge, also his Celebrated Liver Pills, can now be had at all respectable Drug Stores in the United States and Canada.

Choice Poultry for Sale.

THE SUBSCRIBER offers for sale one hundred pairs of Brahma Pootras; also, Shanghais, Cochon Chinas, and Bolton Grays; all warranted pure.

THOS. WRIGHT.

Utica, N. Y., Oct. 1, 1853.—3t.

PREMIUMS FOR 1854.

THE Proprietor of the GENESSEE FARMER, encouraged by the liberal support long extended to this journal by its friends and patrons, announces that the FIFTEENTH VOLUME of the present series, to commence in January, 1854, will contain a quarter more reading matter than any of its predecessors, and be otherwise much improved, without any increase in price.

To enlarge the usefulness by extending the circulation of the GENESSEE FARMER, the undersigned will pay the following premiums on subscriptions to his next volume:

1. FIFTY DOLLARS, in CASH, to the person who shall procure the largest number of subscribers in any County or District in the United States or Canadas, at the club prices, before the 1st day of April next.
2. FORTY DOLLARS in CASH to the one who shall procure the second largest list as above.
3. THIRTY DOLLARS, in CASH, to the one procuring the third largest list.
4. TWENTY DOLLARS, in CASH, to the one procuring the fourth largest list.
5. TEN DOLLARS, in CASH, to the one procuring the fifth largest list.

In order to reward every one of the friends of the GENESSEE FARMER for his exertions in its behalf, we will give to those not entitled to either of the above premiums, the following Books, free of postage, or Extra Papers, as may be preferred:

1. To every person who sends SIXTEEN subscribers, at the club terms of thirty-seven cents each, one extra copy of the Farmer.
2. To every person sending for TWENTY-FOUR copies, as above, any Agricultural Book valued at fifty cents, or two extra copies of the Farmer.
3. To every person ordering THIRTY-TWO copies, any Agricultural Book worth seventy-five cents, or three extra copies of the Farmer.
4. For FORTY, any Agricultural Book valued at \$1, or four extra copies of the Farmer.
5. For FORTY-EIGHT, any Agricultural Book worth \$1.25, or five extra copies.

For larger numbers, books or papers given in the same proportion. To save cost to our friends we pre-pay postage on all books sent as premiums. Persons entitled will please state whether they wish books or extra papers, and make their selection when they send orders, if they desire books; or if they have not obtained as many subscribers as they intend to, we will delay sending until the club is full, if so requested. We do not require that all the papers of a club should be sent to one Post Office. If necessary for the convenience of subscribers, we are willing to send to as many different Offices as there are members of the club. We write the names on each paper, when a number are sent to the same Office, if so desired; but when convenient, Post-Masters would confer a favor by having the whole number ordered at their own Office, sent to their own address.

As all subscriptions commence anew with the year, places where the FARMER was never before taken will stand an equal chance in the competition for premiums.

BACK VOLUMES of the Farmer will be furnished, if desired, and counted the same as new subscribers. We shall keep a correct account of the subscribers sent by each person, and in the May number we shall announce the premiums.

Specimen numbers, show-bills, &c., sent to all post-paying applicants. All letters must be paid or free. Subscription money, if properly enclosed, may be mailed at our risk.

The volume for 1854 will be printed on good paper, with new type bought expressly for it. A gentleman, graduate of the University of Vienna, who is familiar with the languages of those nations in which the science of agriculture is most cultivated, will aid us in translating for the FARMER whatever can instruct or interest its readers. This gentleman is by profession a Civil Engineer and Architect—branches of knowledge intimately connected with the progress of rural arts and sciences. The general character of our paper is thus pithily stated by the Hon. MARSHALL P. WILDER, President of the Massachusetts Board of Agriculture, and of the United States Horticultural and Agricultural Societies, in a letter now on our table which closes as follows:

"I have always had the GENESSEE FARMER. It is, without favor or affectation, the best paper in the country. MARSHALL P. WILDER."

As our club price to each subscriber is only thirty-seven cents a year, no matter how many other agricultural journals one may take, to patronise the FARMER can not impoverish him.

DANIEL LEE.

THE HORTICULTURIST,

And Journal of Rural Art and Rural Taste.

EDITED BY P. BARRY, AUTHOR OF THE "FRUIT GARDEN."

THE HORTICULTURIST, as its name implies, is devoted to Horticulture and its kindred arts, Rural Architecture and Landscape Gardening, and will keep its readers advised of every thing new on the subject, either in Europe or America. It is a Monthly Journal of forty-eight pages of reading matter, beautifully printed on the finest paper, and elegantly illustrated. In addition to numerous wood engravings, each number contains a full page engraving on stone, of some new, rare, and valuable fruit or flower, and is at least one of the most beautiful Journals in the country; and the publisher will not rest satisfied until the HORTICULTURIST, AND JOURNAL OF RURAL ART AND RURAL TASTE, is acknowledged to be the best Horticultural Journal in the world. The honor of AMERICAN HORTICULTURE requires this—interest and patriotism alike demand it. With proper support from the Horticulturists of the country, I have full confidence this point can be reached. To accomplish this desirable end, the publisher has determined to devote his whole time and attention to this work, and his connection with the *Genesee Farmer* as one of its editors (and in reality its publisher), which post he has filled since 1849, will therefore cease with the present volume.

Mr. BARRY, so long and so favorably known as the Horticultural editor of the *Genesee Farmer*, is the editor of this work; and those who wish to continue to receive the benefit of his valuable instructions in Fruit Growing, can do so by subscribing for the HORTICULTURIST, and in no other way.

The new volume will commence on the first of January. The January number will be ready to deliver to subscribers by the 10th or 12th of December.

We shall take pleasure in sending specimen numbers to all who desire to inspect them, or show them to their friends.

Many would do themselves and their neighbors good service by becoming agents, and obtaining subscribers among their friends and neighbors. No man who raises Fruit or Trees can afford to do without the Horticulturist. Agents will be allowed a commission of 25 per cent.

TERMS—\$2 per year, in advance.

JAMES VICK, Jr., Publisher, Rochester, N. Y.

☞ We subjoin a few notices by the press, showing the estimation in which the work is held by our editorial brethren:

We are glad the work has fallen into such excellent hands.—*Louisville Journal*.

Its contents are spirited and various, the selections judicious, the illustrations elaborate.—*New York Daily Times*.

A standard work of authority upon all subjects discussed or explained in it.—*Vicksburg Whig*.

There is no work in this country of greater value to the cultivator of fruits.—*Inquirer, Portland, Me.*

We congratulate the public on having so valuable a periodical as the Horticulturist within their reach.—*New York Day Book*.

This periodical is got up in excellent style, and well sustains its former reputation under its present management.—*Middlebury (Vt.) Register*.

We feel that we are doing our readers a real service when we urge them to subscribe for this invaluable monthly.—*Weekly Democratic Press, Chicago*.

It is well got up; its articles able, various, and appropriate.—*Geneva Courier*.

The plates alone are worth the year's subscription. The letter press is of a highly instructive character, and embraces a variety of topics. None who have a taste for the beautiful in nature should be without such a valuable publication.—*Hamilton (C. W.) Spectator*.

There is substantial profit as well as pleasure in cultivating taste in buildings, yards, gardens, &c., and the subscription price would be capital well invested by those who will attend to the contents of the Horticulturist.—*Daily Courier, Zanesville, Ohio*.

We are quite satisfied with the work, and are inclined to believe that, to the mass of readers, the work will be even more acceptable than it was under the charge of the accomplished Downing. We recommend the work cordially to the patronage of our friends and the public.—*Massachusetts Spy*.

PROSPECTUS FOR 1854.

THE SATURDAY EVENING POST.

UNRIVALED ARRAY OF TALENT.

THE proprietors of the POST, in again coming before the public, would return thanks for the generous patronage which has placed them far in advance of every other Literary Weekly in America. And, as the only suitable return for such free and hearty support, their arrangements for 1854 have been made with a degree of liberality probably unequalled in the history of American newspaper literature. They have engaged as contributors for the ensuing year the following brilliant array of talent and genius:

Mrs. SOUTHWORTH, EMERSON BENNETT, Mrs. DENISON, GRACE GREENWOOD, and FANNY FERN.

In the first paper of January next, we design commencing an Original Novelet, written expressly for our columns, entitled

THE BRIDE OF THE WILDERNESS,

By EMERSON BENNETT, author of "Viola," "Clara Moreland," "The Forged Will," etc.

This Novelet, by the author of "Clara Moreland," we design following by another, called

THE STEP-MOTHER,

By Mrs. MARY A. DENISON, author of "Home Pictures," "Gertrude Russell," etc.

We have also the promise of a number of

SKETCHES BY GRACE GREENWOOD,

whose brilliant and versatile pen will be almost exclusively employed upon the Post and her own "Little Pilgrim."

Mrs. SOUTHWORTH—whose fascinating works are now being rapidly republished in England—also will maintain her old and pleasant connection with the Post. The next story from her gilded pen will be entitled

MIRIAM, THE AVENGER; OR, THE FATAL VOW, by EMMA D. E. N. SOUTHWORTH, author of "The Curse of Clifton," "The Lost Heiress," "The Deserted Wife," etc.

And last—not least—we are authorized to announce a new series of articles from one who has rapidly risen very high in popular favor. They will be entitled a

NEW SERIES OF SKETCHES, by FANNY FERN, Author of "Fern Leaves," etc.

We expect to be able to commence the Sketches by FANNY FERN—as well as the series by GRACE GREENWOOD—in the early numbers of the coming year.

Engravings, Foreign Correspondence, Agricultural Articles, The News, Congressional Reports, The Markets, etc., also shall be regularly given.

CHEAP POSTAGE.—The postage on the Post to any part of the United States, when paid quarterly in advance, is only 26 cents a year.

TERMS.—The terms of the Post are Two Dollars a year, payable in advance.

4 copies, \$5 per annum.

8 copies (and one to the getter up of the Club), \$10 per annum.

13 copies (and one to the getter up of the Club), \$15 per annum.

20 copies (and one to the getter up of the Club), \$20 per annum.

The money for Clubs always must be sent in advance. Subscriptions may be sent at our risk. When the sum is large, a draft should be procured, if possible—the cost of which may be deducted from the amount. Address, *always post-paid*,

DEACON & PETERSON,
No. 66 South Third Street, Philadelphia.

N. B.—Any person desirous of receiving a copy of the Post, as a sample, can be accommodated by notifying the publishers by letter (*post-paid*).

TO EDITORS.—Editors who give the above one insertion, or condense the material portions of it (the notices of new contributions and our terms), for their editorial columns, shall be entitled to an exchange, by sending us a marked copy of the paper containing the advertisement or notice.

December 1, 1853.—It.

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HORSE POWERS, Threshers, Fan Mills, Smut Machines, Grain Drills, Hay Presses, Grain Mills, Corn and Cob Crushers, Drier Mills, and a large assortment of Plows, and all kinds of Agricultural and Horticultural Implements.

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Sept. 1, 1853. 189 and 191 Water street, New York.

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THE GENESEE FARMER,

A MONTHLY JOURNAL OF

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Farm Buildings, Domestic Animals, Implements, &c.

VOLUME XIV, FOR 1853.

DANIEL LEE, JAMES VICK, JR., & JOSEPH

HARRIS, EDITORS.

P. BARRY, Conductor of Horticultural Department.

Fifty Cents a Year, in Advance.

Five Copies for \$2—Eight Copies for \$3, and any larger number at the same rate.

All subscriptions to commence with the year, and the entire volume supplied to all subscribers.

POST-MASTERS, FARMERS, and all friends of improvement, are respectfully solicited to obtain and forward subscriptions.

Subscription money, if properly enclosed, may be sent (post-paid or free) at the risk of the Publisher. Address to

DANIEL LEE,

November, 1852.

Rochester, N. Y.

POSTAGE LAW.—By the new Postage Law, which took effect on the 1st of September last, the postage on the *Genesee Farmer* for one year is as follows,—when paid quarterly in advance:

Any wherein the State of New York, . . . 3 ets.

Anywhere in the United States, 6 ets.

STEREOTYPED BY J. W. BROWN, ROCHESTER, N. Y.



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