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No. 2.

DISCUSSIONS ON FRUIT GROWING.

Western New York is, in soil and climate, similar to Western Canada. Most fruits that ripen there, may be grown to advantage in Canada. The Fruit-Growers' Association of Western New York, — why have we not such an association in Canada? — holds frequent meetings for discussing matters pertaining to their business. Much useful information as to best varieties of fruit trees; mode of culture; profits, &c., result from these discussions; and the unprofessional, or amateur fruit-grower, may thereby learn what to choose, what to avoid, and what to *do* after he has made his selections at the nursery. As an example worthy of imitation here, as well as on account of the information it communicates, we give a brief report of the remarks made at the last meeting of the Fruit Growers' Association of Western New York, held at Rochester on the 7th January. We are indebted to the Rochester *New Yorker*, for this report.

"A committee having been appointed to propose subjects for discussion, made a report of the following questions, which were discussed in the order reported, except No. 5, which was passed by for want of time.

1. Small Fruits.—Can any of them be grown on an extensive scale, profitably?
2. Shelter for Orchards and Fruit Gardens.—Is it important, and if so, what trees or shrubs are most suitable; and what the best method of planting to accomplish the object?
3. Hardy Grapes.—Can their culture in the open air be made profitable?
4. Is it better to Top Graft old apple trees than to plant new ones?
5. Is it a good practice to renew Peach Trees by heading them down.
6. Can Winter Pears be grown profitably?

1. Small Fruits.—Several members of the Convention thought the Currant might be grown extensively, both for sale, and for making wine.

Mr. Barry being called upon to state some of the best varieties, recommended the *Cherry Currant*, the *White Grape* and the *Victoria*, the two latter excellent bearers, the *Cherry Currant*, not quite so good, though very fair, and the *Victoria* valuable on account of its lateness.

Mr. Warren, of Genesee Co., found the *Cherry Currant* very productive, more so than any other variety.

At this stage of the discussion, Mr. Ellwanger presented to the Convention several bottles of *White Currant Wine*, made from the *White Grape Currant*. It was tasted by the members, and pronounced excellent. The flavor was fine, but as this wine was made the last summer, it of course needed age to be fairly tested.

Dr. Moses Long found the *Black Currant* to make the best wine, as good as *Port wine*,

and very much resembling it, and exceedingly valuable for medical purposes. The Doctor strongly recommended the growth and use of the *Black Currant*

Mr. Barry had been informed that all the *Black Currants* grown in the vicinity of New York, had been bought up by the wine dealers in that city, for the purpose of making Port wine. If this is so, the wine makers must be getting more conscientious, and it will undoubtedly have an effect upon the price of logwood.

The Raspberry was recommended by Mr. Burtis and others as worthy of extensive cultivation;

Mr. H. E. Hooker said the fruit growers in the neighborhood of Cincinnati had cultivated the *Black Raspberry* for market. It would bear shipment without injury. The *Antwerp* and other varieties would spoil in twelve hours after picking.

Col. Hodge, of Buffalo, had found the common *Black Raspberry*, or *Black Cap*, as it is generally called, the most hardy, and take it altogether, the best for general cultivation. The *Antwerps* were tender unless grown among trees, which would afford sufficient protection. Covering the plants in the fall was troublesome and expensive. The *Allen* is a variety much grown around Buffalo, and is a native of Ohio. It is of a reddish black, and a superior fruit.

Mr. Barry said the growing of the *Antwerps* and other good varieties is profitable near large cities. The *Red Antwerp* is the variety grown so extensively on the Hudson river, for the New York market. His practice was, in the fall, to bend the tops down and throw a spade full of earth over them. The snow soon covers them. The *Antwerps* are far superior in flavor to the native varieties mentioned—so in the Orange, and other varieties that might be named—they are the Raspberry in perfection. The *Red Antwerp* is hardy in the gardens about this city, requiring no protection.

Mr. H. E. Hooker observed that the *Black Raspberry* would usually sell higher than other varieties, being much sought after for preserving. The foreign varieties ripened very fast, and in a few hours were over-ripe, so that they required to be watched, or a portion of the crop was destroyed. This was not so with the *Black*. It would keep in good condition several days.

Mr. A. Stone, of Oswego, thought it worthy of notice that the *Black Raspberry* was not attacked by worms when ripe like other varieties.

Mr. Barry considered this a bad sign, as insects were good judges of fruit.

If the people want *Black Raspberry*, and are willing to pay more for them than for a better sort, so as to make their growth more profitable, of course fruit growers would do well to raise them. But, when all the pains necessary to grow better kinds is a slight protection in winter, in exposed localities, no one should allow the trouble to frighten them from their culture. This would be *progress* in the wrong direction. The *Black Raspberry* is too woody for our fancy. If we were obliged to eat a certain amount of wood, we should prefer to have it separate from the fruit.

GOOSEBERRIES.—Mr. H. E. Hooker thought *Gooseberries* a very profitable crop for market, if they could be grown free from mildew. Had raised some for market which he sold at 18 cents per quart, and considered it a ridiculous high price.

Mr. Geo. Ellwanger had found that the *Crown Bob*, *White Smith*, and other strong growing varieties, were not apt to mildew.

Mr. Hooker on light soils never got a good berry, even with thorough mulching. Had no trouble in growing *Gooseberries* free from mildew on a heavy soil. Houghton's Seedling had never mildewed with him.

Mr. Ellwanger had never known Houghton's Seedling to mildew, even on the lightest soil.

Mr. Benj. Hodge cultivated twenty varieties.—Found that after two or three years the mildew entirely destroyed them. Does better in a heavy soil, but even then mildews. Heavy pruning and a stiff soil is the best preventives. Never recollected seeing mildew on Houghton's Seedling.

Mr. Barry said the *Gooseberry* required a cool, moist soil. In Lower Canada, Maine, and in the northern part of this State it succeeded almost as well as in the cool, moist climate of England.

Mr. Warren, of Gen. Co., had raised the *Gooseberries* without trouble from mildew, in a light soil, on the north side of a board fence.

2. SHELTER.—Benj. Hodge thought this subject very important. Shelter was essential to the growth of fruit in many localities. Peaches could not be raised at Buffalo—not on account of severe frosts, as many thought, but because of the cold, bleak winds. At the

lower end of Grand Island is a tract of land called Peach Haven. It is protected from the west winds by a natural forest. There the peach succeeds well. Would advise the planting of the *Norway Spruce*; it grows quick and will afford good shelter.

Mr. H. E. Hooker said many fruit growers thought the principal injury to the peach was from the cold north-easterly winds in the spring, just after blossoming.

Mr. L. Burtis, of Rochester, would prefer the coldest, bleakest hill for a peach orchard, so that the ground would freeze deep, and thus keep the trees back in the spring.

Mr. Benj. Fish, of Rochester, found by experience that when the peach crop failed it was in almost every case in consequence of extreme cold in winter.

Dr. Roach, of Ontario Co., has two peach orchards of about 200 trees each. One is exposed to the west wind, and the other pretty well sheltered. From the exposed orchard he gathered about a peck of peaches last season, and from the other 150 baskets.

Mr. Barry had no doubt but exposure to the west winds was very injurious. The winter before last the west sides of hemlock trees, standing in the natural forest, were injured by the cold of the winter, as were the west side of Privet hedges, and other hardy plants, plainly showing the evil effects of continued cold blasts from the west.—Pear plantations that were exposed bore but little. Mr. Barry agreed with Mr. Hodge that the *Norway Spruce* should be recommended as a suitable tree to plant for sheltering orchards. For small gardens the *Arbor Vitæ* would be suitable.

Mr. H. N. Langworthy had cultivated the peach for twenty-five years somewhat as a profession.—He found that both the east and west winds destroyed a good deal of fruit. As a general rule the rows of trees on the east and west ends of the orchards bear but little, while those in the other parts of the orchard bear well.

Of the value of *shelter* for the orchard there can be but one opinion. Those who have travelled over the Western prairies, and noticed the effects of the tremendous winds that prevail there on fruit trees, must *feel* the importance of shelter. Were we to plant an orchard on the prairies, we would almost surround it with a belt of Norways.

3. HARDY GRAPES.—H. N. Langworthy would like to have gentlemen talk freely about the best method of cultivating the Grape. The finest grapes, he often observed, were those that were grown on part of vines that had run up among the branches of some neighboring apple, or other tree, where they seemed to fully ripen in the shade.—From this he argued that the sun was not necessary to ripen the grape—it seemed to require warm air.

Mr. Hodge hardly thought the Isabella grape would ripen well in the neighborhood of Rochester, in ordinary seasons.

Mr. Barry thought with proper culture the Isabella grape could be ripened in Rochester almost every season. He referred to the beautiful, well-ripened Isabellas raised by Mr. McKay, of Naples, Ontario Co., and called upon Mr. Johnson, who resided in the neighborhood of Mr. McKay, to give the meeting some information as to his mode of culture, profits, &c.

Mr. Johnson had been somewhat interested with Mr. McKay in the culture of the grape. He pruned very close every season, and trained his vines on wire trellises some seven feet high. The lower branches were trained very near the ground. The vines were one rod apart each way, making one hundred and sixty to the acre. He thoroughly manured. The fruit ripened every season perfectly. The soil is gravelly, with a clay sub-soil, and a north-eastern exposure. The product is about \$1,200 per acre. Mostly sold at 15 cents per lb.

Mr. Flower of Syracuse, stated that a gentleman near Syracuse had sold \$800 worth of grapes from half an acre.

Mr. Hodge was acquainted with Mr. McKay's Grapes. They are ripe Grapes—a beautiful black. Not one quarter of the people of Buffalo ever saw a ripe Isabella Grape.

Mr. Ainsworth, of Bloomfield, was acquainted with Mr. McKay's Grapes. He has a favourable situation. He prunes very thoroughly both in the winter and summer, and thus the shade is lessened, and the fruit exposed to the light and air. Cultivated the Grape pretty largely himself, and with entire success. Got a fair crop the third year after planting. At present prices the cultivator can depend upon from \$500 to \$800 per acre profit.

Mr. Barry thought that this discussion must have convinced all that the Isabella Grape will ripen here every season; and that the raising of hardy Grapes is not only profitable, but exceedingly so.

4. GRAFTING OLD APPLE TREES.—Mr. Hodge said if trees were healthy and vigorous, it would be wise to graft; if old and sickly, it would be much better to cut them down,

and plant out young trees. Some years since a gentleman in his neighbourhood wished him to send men to graft an old orchard on his place. Mr. H. advised him to cut down his old trees and plant a young orchard. He found some itinerant grafters that did the work. In three years he was so sick of the operation that he cut the whole down, and planted young trees. If the ground is well prepared by thorough deep plowing and manuring, and the trees well cultivated, young trees will bear so early as to astonish those who plant. In 1848, he furnished a gentleman with one hundred apple trees. From these trees in the fall of 1854 was picked 120 barrels of apples. They were mostly Baldwin and Greenings. Two Baldwin trees bore three barrels each.

Mr. Barber, of Ontario county, had considerable experience in grafting old orchards. He did not graft in the tops of trees, but cut off large limbs six or ten inches in diameter, or more, as the case may be. Then put in good strong scions, of some quick growing varieties, all around the limb, as thick as they can set,—about an inch apart. This must be done very early, before the sap starts. These scions grow and form a lip all around the limb of the tree, and the more feeble of these scions can be cut away. Trees treated in this way had produced three barrels the third year. Had grafted apple trees in this manner that had been broken off, leaving nothing but a stump, and pear trees that had lost the entire head by blight, and never failed to get a good top. If the grafting was done early a lot of shoots would soon appear, and furnish leaves enough to elaborate the sap.

Mr. H. E. Hooker had pursued a similar method with Pear trees that had been destroyed with blight, and with success. Also, with apple trees in a few cases.—The wood of the large limb became discolored, and showed signs of decay.

Benj. Fish thought there was no general rule for grafting old trees. If a tree had been well pruned, and well cared for, it would be grafted with success; but as farmers generally treat their trees, pruning them with an axe, they became diseased, and when a large limb of such a tree is grafted the wood decays, and the tree becomes hollow and worthless.

T. C. Maxwell said there were a number of old apple trees near Geneva, planted in the olden time, by the Indians. As the story goes, these trees were cut down by General Sullivan, on his expedition to drive the Indians from this section of the country. They show signs of having been cut down, as many of them have two trunks. These trees were grafted fifteen years since, and are now profitable trees.

Mr. Ainsworth could not approve the system pursued by Mr. Barber. The large limbs cut off for grafting would soon decay. The scions, set so thick around the limb or trunk, would form a cup where the water would remain; the wood would rot, and the tree be destroyed. Three barrels of apples from a tree the third year after grafting, he thought a pretty tough story. Always found that after a few years the fruit of a grafted tree depreciated, and the tree itself soon decayed.

Mr. Barry thought Mr. Barber showed some knowledge of Vegetable Physiology in his remarks. He was opposed, however, to grafting old trees, when in a state of decline, except in special cases—as when a person takes possession of a farm destitute of good fruit, with a few old apple trees growing. In such a case it would be well to graft, so as to have fruit enough for family use as soon as possible.

6. WINTER PEARS.—Mr. R. Robinson Scott, hoped that when gentlemen made statements in regard to Pears; their product, value, &c., they would let it be known whether such statements were *real* or *imaginary*, as an old Horticultural journal charged the members with making false statements at the last meeting. It would be well, therefore, for members who make statements to let it be understood whether they were *real* or *figurative*.

Mr. Barry said that the growing of *Winter Pears* was yet a new business. *Winter Pears* could be grown as easily as fall Pears—the only difference is the trouble of keeping the winter pears until they ripen. Most of the winter varieties will keep and ripen in barrels in the cellar, as well as apples. He had been surprised to find how little care and trouble they required. The *Easter Buerre*, *Lawrence*, and *Vicar of Winkfield* may be grown and ripened here as easily as Baldwin apples.

At this stage of the meeting Mr. Barry presented to the Convention a fine dish of *Easter Buerre Pears*, kept in a barrel in the cellar until taken out to bring to the meeting. They were tasted by members generally; and as a fine one fell to our lot, we were so much absorbed in discussing this particular pear on our own account, that we undoubtedly lost many valuable remarks that should have been noted down. When we awoke to a sense of duty, Mr. Hodge was observing that in selecting pears for market culture it was

important not only to get pears of good quality, but those that bear large crops. As to making pear culture pay, there could be no question about that. A pear tree in Mr. H.'s vicinity, bore 40 bushels last season, and another belonging to his brother bore 20 bushels, which were sold at \$2 per bushel. This was an inferior variety.

Mr. Hooker found Winter Pears quite variable as to quality. Had no trouble in ripening them—the trouble was to grow them good. If well grown they would ripen well.

Mr. Barry observed that trees of Winter pears did not bear fine fruit until they attained some age. The *Glout Morceau* did not bear fine fruit, even on the quince, until eight or ten years old.—Winter Pears must be well grown. Imperfect, poor specimens will never ripen.

**A FAMOUS AMERICAN HORSE.**—We learn from the *Country Gentleman*, that Black Hawk a celebrated horse to whom the whole race of Morgan horses are greatly indebted for their notoriety, died at the stable of his owner, David Hill, in Bridport, Vt., on the 1st of Dec., at the age of 23 years, Black Hawk was sired by Sherman Morgan, and he by the original Justin Morgan horse. He was foaled the property of Ezekiel Twombly in Durham, N. H., in 1833. By the death of Mr. T. he "passed into the hands of his nephew, by whom he was sold, when four years old, to A. R. Mathes, who sold him to Brown & Thurston, then of Haverhill, Mass. Mr. Thurston, (Benj. Thurston, now of Lowell) subsequently became his sole owner, and in 1844 sold him to Mr. Hill, by whom he has since been kept till the time of his death." The *Spirit of the Times* says;—

Black Hawk was a little less than 15 hands high, and weighed about 1000 pounds. His color was black, like that of his dam, and his colts have been black, bay, or chesnut, with hardly an exception. He possessed the character of the Morgan family of horses in an eminent degree. He was symmetrical, muscular, and compact in his form, and his elastic style of action, speed, and endurance, which qualities he imparted in a remarkable degree to his progeny, rendered him one of the most valuable stock horses ever owned in this country. Black Hawk could trot his single mile in 2:40, and exhibited considerable bottom in longer races. In 1842 he won a match for \$1000, by trotting on the Cambridge Track five miles inside of sixteen minutes. Oct. 3, 1843, he won a race of two mile heats, beating two competitors easily in 5:43—5:48—5:47. Black Hawk was the sire of several of the fastest trotting horses on the turf, among which are Ethan Allan, the best trotting stallion in the world; of *Lancet*, who has beaten the best time of *Lady Suffolk*; of *Black Ralph*, *Belle of Saratoga*, *Black Hawk Maid*, &c. He was not only a fortune for his owner, but the value of his stock has added much to the wealth of the State where he was kept. Mr. Hill has received for his services over forty thousand dollars; his last season netted seven thousand dollars, and he was already booked in advance for five thousand dollars. His owner obtained insurance on his life until he arrived at an age when the premium charged was necessarily very high and he died uninsured.

It has been aptly suggested, says the *Country Gentleman*, that "the skin of Black Hawk be preserved by some skilful taxidermist, in such a manner as to represent with the greatest practicable accuracy, the body it originally covered. We may add the hope that our State Ag. Society will in this case, procure it for permanent exhibition in our New Museum, where it could but be a matter of great interest to every visitor. For ourselves we should look at it with peculiar pleasure, as it was through our columns as above stated, that this celebrated horse first became more generally famous, and through them that his true history was originally elicited and published."

**A COLT FROM A MULE.**—Mr. John D. Pitts of San Marcos, Texas, writes the *Spirit of the Times* as follows:—"I have a mule that I raised, three years old in June last, that now has a colt by her side. Please say what I must call it. Its ears are not like the mule nor the horse. In other respects it resembles the mule. If any one disputes it, I have the mule and her colt in my lot; the doubting Thomases can see for themselves."

**ONE ADVANTAGE OF AGRICULTURAL SOCIETIES.**—In the course of the address which was delivered before the Penn. State Ag Society, at Pittsburg, by Hon. George H. Woodward, we find, here and there, some suggestions which seem well worthy of consideration, and well adapted to promote the interests of the agricultural fraternity at large. We propose to copy, or condense, a few of the more important of these suggestions for the benefit of our readers.

## METEOROLOGY FOR FARMERS.

BY LIEUT. M. F. MAURY.

This is an interesting subject to all, and to Farmers one of great practical importance. We intend to treat it at some length, for we are very utilitarian in our notions. We shall aim first to show the advantages which should ensue from a properly conducted system of Meteorological Observations, not only to the Army and Navy—but to hygiene, to the great industrial pursuits of the country, to the public convenience, and to the advancement of science. Having done this we shall develop a very simple and economical plan for conducting these investigations, and thereby afford to the farmers—to whom we especially appeal, because they have the “deepest stake in the hedge”—an opportunity to lend us their countenance and support in getting these investigations under way. We do not ask them for money, but for good words and a friendly co-operation.

There are no political divisions in the atmosphere—and to understand its movements and the laws which govern them, we must overleap State lines in search of facts; we must study it as a whole, and observe its phenomena both by sea and land. The influence of Canada upon the weather is felt in New York, Pennsylvania, Ohio, and other States just as much as it is in the Gut of Canso. The great chain of the American lakes which contains more than one-third of all the fresh water that is found on the surface of our planet, impresses peculiar features upon the climatology of the lake States, and exerts a marked influence upon the meteorology of an extensive region of this country. Many of the storms of the Mississippi Valley feel the Meteorological force of the Gulf Stream, and show signs of its influence far away towards the Rocky Mountains. And could we trace the snow which now covers the fields of many of our readers with its protecting and fructifying mantle, to the place whence the thirsty winds sucked it up as vapor, when last it was in the sea,—we should find, perhaps, that it came from regions far away in the Pacific Ocean, where it had been feeding the corallines with lime, which at a previous period, it had washed away from the moribund caves of India, the silver mines of Potosi, or the white quarries of Carara marble.

The winds which brought this vapor from the sea, and deposited it as snow before our doors, did it in obedience to laws that are as fixed as those which regulate the seasons and bring about seed time and harvest—and, therefore, to understand the Meteorology of our own country and comprehend the laws which are expressed in its climates we must understand the movements of the great aerial ocean which envelops the earth, and to do this we must push our researches far away into distant lands and establish our observations on the sea as well as the land.

The sea is already thickly studded with floating observatories—and those who do business upon its great waters, are the unpaid volunteer co-operatives in this system of research which we now propose to extend to the land, and on account of which we appeal to the farmers for help of a like sort. We will explain how the co-operation of sea-faring people was obtained, and then it will be easy to show how we propose to obtain that of the agriculturists and landmen generally.

The Superintendent of the National Observatory, being duly authorized, appealed to the ship masters and owners for co-operation, and invited all under the American flag to send to the Observatory, abstracts of their log books, showing for every day during the voyage, the latitude and longitude of the ship at sea, the direction and force of the winds, the strength and set of the currents, with the temperature of the air and water, and the height of the Barometer.

From these materials, thus obtained, the celebrated “Wind and Current Charts” were constructed. Thus the observations were made gratuitously, and the data furnished by individuals without cost, while the government undertook the expense of collaboration and publication. In acknowledgment of such service, and for encouragement, every Navigator who had contributed observations, was furnished gratuitously with blank forms for records and a copy of the work which the observations contributed by him, had helped to make.

By this simple and economical plan, the ocean in a little time, was dotted over with floating meteorological stations, from which sea and air were watched day and night, and the phenomena presented by them carefully observed and noted.

Among the immediate results of this undertaking, passages were shortened, the dangers of the sea were lessened, navigation was improved, commerce was benefited, and

remote corners of the earth lifted up as it were, and set down nearer to our own doors by many days' sail than they were before. The commercial distance *via*. Cape Horn to California was reduced from a voyage of upwards of six months on the average to one of a little over four months, and by a similar process the golden colony of Australia was placed just one month nearer to the ports of the mother country than it was before; the saving this effected to British commerce alone has been estimated in England to be worth to the merchants and people of that country not less than ten millions of dollars a year. Now mind, gentle, prudent, and cautious farmers, the sea captains and merchants to realize these gains did not have to incur any additional outlay—all the costs to them was in the pens and ink necessary for recording the observations they were requested to make. The instruments used were required for the proper navigation of the ship at any rate. And the necessary instruments for the observations now required to be made on land, are such as every good farmer ought to have also at any rate. Thus was commenced the first systematic attempt to study the Meteorology of the sea and to investigate by an extensive co-operation among mariners, the laws which govern the movements of sea and air.

Other maritime nations, foreseeing the benefits arising from this plan, signified a desire to take part in this system of research as co-laborers.—Accordingly the leading powers of Europe, sent their own chief hydrographers, being officers noted for their accomplishments in the walks of science, to meet the Superintendent of the Washington Observatory in conference, and to consult together as to the best plan of a general and uniform system of Meteorological Observatories at sea.

These officers met in Brussels about three years ago, and there devised a plan of physical research for the sea, which at their recommendation, has been adopted by sea-going people generally. The observations that are made on board English ships are sent to an office, that has been established in London for the purpose, where, at the expense of the crown, they are discussed and published for the benefit of the sea-faring world, as they are in Washington, and also in Holland, Denmark, Russia, and other countries.

This beautiful system of research, with its magnificent results which are estimated to be worth millions annually to the people of this country and their factors, is carried on under an annual appropriation by Congress of less than twenty thousand dollars.

Thus we have two-thirds of the surface of our planet already occupied by meteorological stations and we appeal to the farmers and to the lovers of science to help us to occupy the other third.—The Brussels conference advised that it should be so extended, and held that the laws which govern movements of the air can neither be thoroughly, studied nor understood until the land should also be included as part of the system.

There are in this country men enough—amateur meteorologists—already engaged in making, each for his own satisfaction, observations that would suffice for extending this system over the United States. All that remains to be done thus to extend it, is to organize these observers into a corps, so that they may co-operate and observe according to the same plan; and that they should be so organized and set to work, it is only necessary that the friends of the measure generally, and the farmers in particular, should so exert their influence, that Congress may give the Superintendent of the National Observatory authority for such extension of his researches, with the means of collaborating the observations to be procured, and of publishing for the benefit of the whole human family the results to be obtained therefrom—for, where is the man, woman or child, that is not concerned in the laws that govern this wonderful machinery, which we call the atmosphere.

We appeal to the farmers especially to use their influence to procure the requisite votes in Congress, because the benefits which agriculturists would secure from the plan, are paramount. The whole business of Agriculture is, to a certain extent, an affair of meteorology—of wet and dry, hot and cold, cloud and sunshine,—and the convenience of the public is to be affected, and the business of the people in a great measure regulated and controlled, by the weather we shall have to-morrow. We cannot pretend to specify the results that the spreading out of this system of meteorological research over the land would give.

But it is obvious that our observers must cover the land as well as the sea, and that in order to study the operations of this atmospherical machine, and comprehend its movements, we must treat it as a whole.

HUMBOLDT and DOVE, KRIEL, QUETELET, KUPFFER, JOMARD and LE VERRIER, with a host of other lights of science in Europe, stand ready to co-operate with us in maturing

and inaugurating such extensions of our marine observations. Indeed, Europe is waiting for America to make the move in this matter. We may be permitted to make an extract bearing on the subject from a letter received by the writer, no longer ago than the beginning of the winter, from M. QUETELET—the Astronomer Royal of Belgium, the preceptor of Prince-Albert, and one of the most accomplished scientific men of the age.—QUETELET has done more for vegetable meteorology, perhaps, than any other man living; and, owing in no small degree to the scientific aid which he has rendered, and the skill which he has done so much to develop, Belgium is, perhaps, in a higher state of cultivation and agricultural improvement, than any other country in the world.

This letter is dated 10th Dec., 1856, and says:

“Happily, you are not of a character to hesitate, and you will do very wrong to abandon the enterprise of extending your meteorological system of research from sea to land, to England, to France, and to Russia. It is plainly necessary that it should proceed. This grand undertaking is entirely honorable, and your country should not lose the honor of having been the first to suggest it. There is a certain boldness and zeal necessary, which is better suited to a young country than to our old climates—nevertheless, we are not altogether to be disdained, and in many respects we may, by following, gain the palm. But real merit is in every age the same in individuals as in nations. In your proposition America has found a great idea, which should be altogether her own property, and should not be abandoned, because our continents wish to march in the same route but should be accomplished in a firm manner by herself. Our Europe is too contracted, and her governments too jealous of their respective influences, to allow one of the principal nations to take peace of the other. They all will aid voluntarily, when the appeal comes from without, and each can give an equal part without chance that any rival can attain an advantage over the other. Hold, then, firmly to your propositions—endeavour to overcome hesitancy in America, and thus she shall render an immense service to science, and nobly accomplish a career which she commenced. I say nothing, my dear friend, of yourself, because I know well that you regard always the general welfare and not your own. But listen to me; strive to obtain this last conquest. No one shall applaud more sincerely your success than myself, and I am also ready to second you with all the resources which I have. Age advances, difficulties augment, but we have as yet no cause to recede. Every year lost is a considerable loss. It was necessary to give way to the Russian war, but at present there are no such motives to excuse inaction.—It is necessary to make another effort, and fortune will reward us.”

We shall continue this subject in our next article. We shall show its importance to the Army and Navy, that the Government and Legislators may, with a clear conscience, do their part towards the great object we have in view; and then we shall show the plan of observations and satisfy our readers that it is neither elaborate, complex or difficult. On the contrary the observations at the commencement are few and simple, and neither do they require any very great skill or amount of labor to make them. It should be begun in a very simple and plain way, and then, as its usefulness and importance are developed, it may be extended.—*R. New Yorker.*

Poultry need warm and comfortable quarters these cold nights, and you will find that there will be a saving of corn or a proportionate increase of fat, if they, chickens, turkeys and all, are made to come off from the apple trees, and roost in the poultry house.

TRAPPING MICE.—The number of mice may be very materially reduced by trapping them. The little wooden traps, with a spring yoke rising over a round hole in the side, can be bought very cheaply. They are retailed for about three cents each, when having but one hole, and for six cents with two holes. Two or three dollars will purchase a hundred of single hole traps. These baited with a bit of cheese, or cheese rind, and distributed around an orchard, will thin out the mice very rapidly. We have a lot of them about the dwelling, garden, &c., and find them more effectual, and less annoying, (especially of nights,) than cats.—*Am. Agriculturist.*

DUTIES OF CATTLE JUDGES.—A correspondent of the Ohio Farmer says:—Their duty to the Society and the public requires that they should accurately note down, and specify in their reports, the individual merits and demerits of the competing animals, and clearly point out the points in which the preferred animal excels. You thus systemise and establish permanent rules governing your awards, which must give more general satisfaction to the public and breeders of fine stock.

## SUGAR: ITS QUALITIES; AND WHICH IS THE CHEAPEST.

If cane sugar was the article intended by Hebrew *René* (translated *calamus* and *sweet cane*)—and this is at the least quite doubtful—then the oldest mention of this now common sweet is to be found in Exodus, thirtieth chapter, and twenty-third verse. But the first mention of sugar, relative to which there can be no question, is found in Herodotus, about B. C., 445. The Greeks called the article at first the *honey of canes*, *Indian salt*, and *saccharon* or sugar. The term "Indian salt" is noticeable. It seems, besides pointing to India as the original country of the cane, to show that sugar had been in a high degree clarified and crystalized even then; as it could not otherwise be compared to salt. Galen very gravely prescribes sugar as an internal remedy in some diseases! It was not known to Germany and Britain until the Crusades; nor was it considered a necessary of life until tea and coffee had come into general use.

The Arabs have the credit of first concentrating the juice of sugar by boiling. And the process of sugar-refining was communicated to the people of Europe, in 1503 by a Venetian—probably borrowed by him from the Chinese. The lovers of *candy* will be surprised to hear that, in the present sense of the word, it did not exist until more than a century after the discovery of America by Columbus! Our ancestors had not the privilege of killing time by mumbling *gum-drops*, *lozenges*, and *cream-sticks minus the cream*; but then they saved their teeth, temper, and stomachs for more substantial occasions.

There are many species of sugar—some of them obtained from a variety of sources. The most common—*CANE-SUGAR*—is found also in the beet, and some other roots; in the sap of the maple, walnut and birch; and in small quantity in grains. What is this sugar? Chemistry kindly steps in and informs us that it is made up, in its purest forms, of *twelve parts coal-dust, combined with eleven parts water*—nothing more, and nothing less! A *gr* at drives off the water, leaving the coal in a black mass.

*GRAPE-SUG* is that found in rasins, and of course in the juice of the grape, as well as in other fruits, and in honey. It is *composed of twelve parts, water twelve parts*, and is less sweet and crystalline than the former variety. Another form of sugar is found in the drug *manna*; a fourth in the *licorice* root; a fifth in *mushrooms*; a sixth in *animal muscle*, and so on.

The juice pressed from the sugar-cane is a solution of sugar in water, with various vegetable and mineral impurities, such as would naturally be found in the sap of plants. The process of manufacture has two objects: to get rid of the water not held in combination in the sugar itself; and to get rid of the impurities of the juice. It is seldom that either of these ends is attained on the sugar-plantations. Owing also to the speedy fermentation of the juice, if neglected, to too long and frequent exposure to the air, and to burning, much material which might afford an article of the first quality, is turned out deteriorated and greatly inferior; so that a writer has styled the common boiling process "an elaborate and effectual means of converting pure sugar into *molasses and scum*."

It is generally known that *molasses* consists of the drainings from the sugar after it has undergone crystallisation. It necessarily contains a larger share of impure matters than any sugar; although many of the lower grades of the latter, as is easily seen, are still full of molasses, and are very far from being pure. The improved methods now adopted by some of the planters, both secure a larger percentage of sugar from the juice, and that of a better quality. The following is a good rule for judging of the grade and value of the article as it is imported, that is, of *raw or muscovado sugar*; namely, "The more coarsely granular, the harder, drier, and whiter, the greater the value of the sugar." Of all the grades the white Havana is best, being almost as pure as that which has been refined.

In refining, the sugar is re-dissolved, purified by filtering through bones burned and crushed, then again concentrated, but by means of a "vacuum apparatus," and therefore at a low degree of heat. The syrup is then poured into moulds, crystallises, is drained (the drainings furnishing the syrups" now so much in vogue), and the crystalline mass is dried; when it is ready for the market.

If it be sold as loaf, the mass as it comes from the mould, is wrapped in purple paper, and then forms one of those pendulous cones of sweetness that in days of yore were wont to ornament the grocer's ceiling; though, now, alas! rapidly giving place to the barrels of "coffees," "crushed," etc., that disfigure his floor. Much of the loaf is now broken up in a coarse mill, thus forming the "crushed" article. If this is cracked up into its individual crystals, and then sifted free from the finer dust, it gives the "granulated"

sugar; if ground to a fine flour the "pulverized." The first of these two is certainly a pure and convenient form for use; the second looks as if it afforded an excellent chance for adulteration. "Coffee" sugars are made from poorer stock—that which can not be made into a dry and perfect-grained sugar—or from such stock mixed with the heaviest portions of the syrup obtained from previous processes. Its value is according to its whiteness and "grain."

Since we took up our pen on this subject, our attention has been called to a *novelty* in the way of refined sugars, in which doubtless the public will be interested. The common "crushed" article has always proved quite intractable to the sugar-tongs. To remedy the inconvenience, a member of the firm of "Havemeyer & Moller," N. Y. city, has invented and patented what may be called a *blocking*—instead of a *crushing* apparatus, and which the firm have now in operation. In this, a loaf is first cut up by a number of circular saws into slices of a suitable thickness. These are then passed between two rollers studded with knife-blades, which cut the whole into tolerably regular and squarish blocks of different sizes, but averaging cubes of about *three quarters of an inch* in each dimension. The product they have denominated "*block crushed*." Its introduction to the tea-table will, we think, be marked by an "era of good feeling," and by a largely increased security in—the management of the tongs. Discreet house-keepers we are sure, will not fail to be furnished with the genuine "block crushed," that is, as soon as the market is supplied.

We are now prepared for a speedy solution of the question as to which is the most economical sugar. It has been seen that no sugar is *pure* until it has been refined; and even then only the *best* refined article is so. This forms a clear, dry grain, is strong—is sugar, and nothing else. *Pure sugar is pure white*, never of any shade beneath this: *and this, and this only, is pure sweet*. "The raw sugar of commerce," says Tomlinson, in his *Cyclopedia of Useful Arts*," really consists of a crystalline flour of pure sugar, moistened throughout with molasses, *often to the extent of one third of its weight*, and often more than the crystals can contain;" and elsewhere he adds, "mineral and vegetable impurities." But molasses is more than half water and impurities. Now water is not sugar—it is not sweet, and cannot be. Impurities are not sugar—dirt has no sweetening property.

The smallest insight into the chemistry of sugar, and into its relation to all forms of foreign matter with which it may be intermixed, would convince the "old ladies" of both sexes that they are wholly self-deceived when they assert that brown sugars are more sweetening than white. They are deceived *in this way*: the brown sugar is part molasses, hence part water, and also contains a little acid from the original cane-juice. So it is already partly dissolved, and imparts its taste at once to the tongue; in addition to the fact that that taste is a rather *strong one*, for sundry good reasons already shown. But pure sugar-crystals, which are sweetness, and nothing else, still do not dissolve instantly: they are slow, when taken on the tongue, to yield the sweet they possess; and therefore they have been set aside on the plea that they are destitute of sweetness? As well pronounce impure salt the *more salt*, as impure sugar the more sweet. But the housewife says the "strength" is "taken out" of the refined sugar; and so she uses a mixture of sugar, and water, and filth, *because* pure sugar is not sweet enough! And so, too, she buys water and filth in her sugar, *because* she lacks faith in the real sugar itself! Is she ready to apply the same principle to her flour, and prefer that which is liberally compounded with cockle, chaff, and dirt, *because*—pure flour is not strong and nourishing enough? Wax can add nothing to the sweetness of honey, and therefore honey can lose no sweetness by being freed from wax. Sugar, so long as it will crystallize perfectly, can no more lose its sweetness, than gold can cease to be gold. But as never so much copper in gold, is no addition to its value, so is never so much of foreign matters in sugar wholly unavailing to increase its strength or sweetness. The cheapest sugar is therefore the driest, the purest, the best quality.

Finally, sugar, pure or impure, may easily be used too freely, especially in the warm season, and by persons of bilious habit, or those who take too little active exercise. Many dyspepsias, liver complaints, bilious attacks, fevers, neuralgias, rheumatisms, urinary and cutaneous disorders, are mainly the product of too free use of sugar and other concentrated foods, for the exercise and the air that are taken by the consumer.—*Life Illust.*

BIRDS.—The editor of the *Farmers Journal* says, that, aside from the invaluable services of birds in keeping injurious insects in check, they amply compensate the farmer for their share of his grain and small fruits, by eating the seeds of weeds that are allowed to mature, and that those sportsmen who shoot the birds in his fields, are entitled to the same respect as is due to those who rob his hen-roosts.

## FENCING IN CANADA.

In our last volume we devoted a good deal of space to the subject of fencing. We believe the discussion, communications, &c., resulted in much good to the community. Many persons have been prevented from undertaking costly experiments which would have proved a failure, as they had already done in the hands of persons well qualified to conduct them properly. Hints and suggestions were also thrown out which have led to trials and experiments in the right direction. We do not propose to give so much attention to the subject of fencing—although none can be more important—in the present volume. The following observations, however, from a member of the Louth Farmers Club, are so much to the point, that we willingly make room for them. Mr. Philip Gregory addressed the Club as follows :

*Mr. President and Gentlemen*—At our last Meeting I was caught and harnessed, not very willingly you recollect, to open the discussion at this meeting of our Club, and a subject named for me—not a subject of my own selection, but rather pressed on me—and should I inflict a punishment on you, by listening to me without a corresponding benefit to you, you must not charge it to my vanity, but to my ignorance, and a natural disposition to try and add something to the common stock, from which I have so far only been a recipient.

The subject of Fencing is one of great importance, and much more might be said on it than my humble ability will admit of, or time allow to go into detail; so that I shall occupy but little time, being persuaded that there are others here that can do so to a better purpose. There is no need of telling you how our fathers built the log fences that enclosed their first turnip or potatoe patches in Canada: it is a thing of the past, and in less time than has elapsed since the log fence fell into disuse, it will not be necessary to tell you how the rail fence that succeeded it is erected. At this time, however, the rail fence that we all know how to make, and what it costs, is the fence for the time; but as rails have risen in price from less than \$10 the 1000 to \$30 and upwards in a very few years, so that before many years pass we need not calculate to buy them at any reasonable price. That rails might be more economically used than is commonly done there is no doubt, and let it be but to ever so small an extent, the aggregate on the fences of Canada would be no inconsiderable amount saved.

I saw a fence not far from London this fall, made of posts and three rails set in, and on an embankment mostly thrown up with the plough. I believe it to be a cheap and good fence, and, being straight, occupies but little ground; but I saw its defects also—in the spring and early summer, before the ground becomes dry and solid, the hogs had commenced rooting in the side of the embankment, and finally went through it in several places. It appeared to me that the embankment was not thick enough in proportion to its height. It, however, made a formidable looking fence, and no doubt would be very durable. Mr. R. L. Dennison, of Toronto, said he made a piece of fence on this plan some years ago, and he considered it the best fence he ever made. The embankment was about two feet high, and three feet at the base. He used two boards instead of rails to finish his fence. He thinks the ditch no evil but a benefit; nothing ever got through this fence. He said he intended to make some of the same kind of fence next season, but will use rails instead of boards.

As timber becomes more scarce and dearer, the board fence will replace the common rail fence; but it is much dearer now, and more subject to decay. Cedar posts are said to be very durable in a fence. There are so few used here, and those so recently planted, that I can say but little as to the economy of using them, as they would have to be brought from some distant part of the country, while we have oak and chestnut at hand, and both make very good posts. Chestnut is a timber of very rapid growth, is easily worked, holds a nail exceedingly well; and a chestnut pole, the size of a common rail, will last as long as a split rail from a full grown tree.

I have taken some pains, but without any satisfactory results, to ascertain what would be the probable expense of live fences, and also of stone. The best treatise on growing a hedge that I have met with is by a gentleman calling himself Caleb Kirk, in the *Albany*

*Cultivator.* He premises that it will take thirteen years to bring a hedge to maturity, and in a detailed account makes the cost of planting and dressing for that time to be \$29 50 cents for 60 rods. The calculation seems to embrace all that would be necessary; but I am afraid it would be like the French Engineer, that was called on to examine the estimate for building a house, who said, "it was all correct, but we must add \$1000 for *dumting dat got no name.*"

I have had a little experience myself in hedging, and I find that the cost of raising hedge fences consists in the length of time the plant takes to form a fence, and the careful watching and weeding it requires during that time, and in replacing any dead sets, and in erecting an external fence of some kind, to keep off the cattle and sheep until the plant has attained to a sufficient vigor to protect itself; and the farmer who is not prepared to incur the cost and trouble of performing all that faithfully, I would strongly advise not to meddle with planting hedges, as, without the requirements I have mentioned, he could not succeed in raising a hedge fence of any value.

I have read the arguments for and against a great variety of hedge plants, but public opinion seems to settle down on our native thorn, as a hedge plant for Canada. It, however, is slow of growth, and difficult to obtain in sufficient quantity for extensive planting. A Mr. Bècket, in answering queries proposed by Mr. McDougall, for the information of the Agricultural and Horticultural Central Club, says, "It is surprising that the native thorn has not long since been brought into general use as a fence, and any farmer who is desirous of fencing off his fields with quick-set fences, cannot, in my opinion, do better than confine his selection to the native plant." So far I would agree with him; but he goes on to say, "All he (the farmer) has to do is collect the ripe berries in the fall; put them in a heap in the earth during winter, that they may ferment and pulp; take them up and sow them in drills in the spring, and in two years from that date they will be fit for transplanting into hedge rows." He may have been fortunate enough to have found berries the seed of which would vegetate with so little trouble and so soon. If he has, he is more fortunate than myself, or any other that I have heard beside him, who have attempted to raise plants from the berries.

Some four or five years ago I collected about a peck of thorn-berries in the fall, and fermented them, so that I could pulp them. I then subjected them to alternate freezing and thawing several times through the winter. In the spring I saw no signs of vegetation, and still left them in the box, where they had been previously mixed with good soil, until the next spring. Some of the capules then began to burst, and I then planted them in a seed bed; but only about one hundred plants made their appearance above ground; and I believe that Dr. Beadle tried them on a much larger scale with about the same success. There would be about eight thousand berries in a bushel, and on an average there was not more than one germ in a berry in any that I examined. The capule that encloses the seed is one of the hardest, if not the hardest, vegetable substance that grows, and requires more than one season to soften it sufficiently to give the seed a chance to vegetate; hence the reason of so few of them growing.

The Niagara District, and indeed the most of Canada, can never be hard set for a material to build fences of, while inexhaustible quarries of stone are often found on the farm, or within a few miles of any farm where other material could not be had. In any locality where stone could be laid on the line of a fence, at a price not exceeding \$4 per cord, a stone fence in twenty years would be a cheaper fence than one made of posts and boards. The material of a board fence in that time would be useless, while the stone would be available for all time to come. There are but few farmers in Louth that could not, if they willed it, haul 20 cords of stone in a winter. Our teams must be kept, at any rate, and are often lying idle, while a job of that kind would give employment in the winter to a hand that we would not otherwise need, and have him by us when work of a more pressing nature would require additional help.

**CHERRY STONES.**—J. C. Holmes, after stating the well known fact that cherry pits must be buried while yet fresh, said that he planted them at once, spreading tan-bark over them if the season was dry. The following spring they came up through the tan-bark, and do much better than if planted in spring. To which we may add, that if cherries are planted in the autumn, with an earth covering merely, a serious difficulty often occurs, in the hard crust formed on the surface, through which the young cherry plants find it sometimes impossible to penetrate. The tan-bark obviates that difficulty—finely pulverized stable manure, and perhaps peat or leaf mould, would do the same.—*Country Gentleman.*

## CHINESE SUGAR CANE.

Considerable attention has been bestowed upon the culture of this newly imported plant, in the United States, during the last two years. Some trials have also been made in Canada with fair success. From the accounts we have read in our exchanges, we would not advise our readers to make a trial on a large scale until its utilities are better understood. The following letter from Mr Chas. Eliot, of Sandwich, C. W., has appeared in the *Colonist* of this city. We have not the pleasure of this gentleman's acquaintance, but presume his statements may be relied on:—

Sir,—I have lately seen in your *Colonist*, some remarks respecting the Chinese Sugar-cane, *Sorghum Saccharatum*. Although my knowledge of this plant is but limited, I can still perceive that it possesses qualities, which would assuredly render it a very valuable acquisition, and well worthy of extensive cultivation, not only for fodder, but for the more important purpose of manufacturing sugar. I sowed it this year, as late as the 26th of May, in hills three feet apart by two and a half feet; a great portion of the seed, which it produces in great profusion, fully ripened. In the hill, at the first hoeing, I thinned out to six or seven stalks; they attained a height of from twelve to fifteen feet, with a diameter of about an inch near the ground, abundantly furnished with long succulent leaves. This Sugar-cane is readily mistaken for Broom Corn, which it closely resembles, differing only in the color of its seed; that of the Chinese being jet black. Of course, a practised eye will discover many other distinctions, but I allude to ordinary observation.

I cannot conceive why the name should be changed into Sugar Millet. In the East Indies I have eaten the Sugar-cane of those tropics, and this Chinese one appears to contain as much saccharin property as that. Children, I know, devour it as eagerly as they do sugar, and that, I think, a pretty good criterion for forming an estimate of its lusciousness.

This vegetable will thrive wherever the Indian or Broom Corn will advance to maturity. In our county of Essex, it would prove a certain crop. Remember, I sowed it as late as the 26th of May; yet it was harvested in September. It is necessary to bear in mind, that plants, not indigenous to a country, do not prosper so well the first year as the second; but that they continue to improve, provided some little attention be devoted to them, until they become perfectly acclimated. My experience of many years verifies this—more especially with seeds imported from England and the warm latitudes of the States.

I have no hesitation in strongly advocating the introduction of this exotic, feeling convinced that sugar can be extracted from it in sufficient quantities to satisfy all our requirements. It is a sugar-cane of the Chinese, and I can see no reason why we should not convert it into ours. The leaves we might appropriate to foddering cattle, and the stalks to sweetening our hoes.

I will most willingly give some seed to any person who will bestow a little care on its growth, and will afterwards test the virtue of the plant for making sugar, which could be easily ascertained on a small scale.

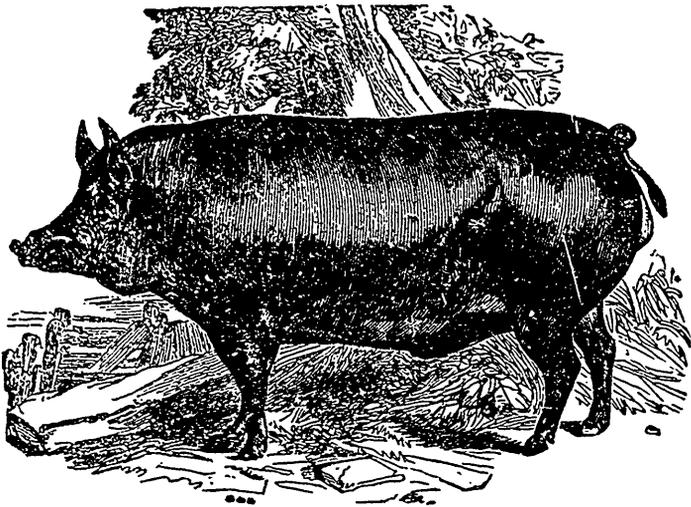
I am, Sir, your obedient servant,

CHARLES ELIOT.

**OIL OF MUSTARD IN RHEUMATISM.**—Where one third of the male population complain, to some extent, of rheumatic pains, in the fickle climate of New England, but more especially along the sea shores, physicians have it in their power to mitigate an immense amount of severe suffering by prescribing the volatile oil of mustard. It is employed as rubefacient, being first diluted in its own weight of alcohol at forty degrees. Some patients may object to its pungent odor; but that is temporary, while the remedy may in some cases prove a permanent cure. Make the application at least twice a day, and protect the part with soft flannel. Mustard mills are in operation in the cities generally, at which the oil may be procured, it being an article not much in demand in the arts. Were it not for detecting it by a pungent odor, this oil would have become a secret remedy for rheumatic pains years ago. A nostrum loses miraculous efficiency and curative powers on becoming known.—*Medical World*.

**DIOSCOREA BATATAS OR CHINESE YAM.**—My opinion coincides with that of those who think this esculent very much, if not altogether a humbug, notwithstanding the flourish of trumpet which heralded the introduction of this “celestial” stranger among us the past spring. I planted the vegetable in question here, in excellent soil, and had it planted about eighty miles south of this, on the eastern shore of this State, near Easton in Talbot County. In neither instance did the tubers increase more than two inches in length, nor were their diameters very sensibly enlarged. It would require two or three dozen of such vermin of vegetables to equal in size one respectable sweet-potato. I think the *Dioscorea batatas* may be set down as “very small potatoes and few in a hill.” E. L. R. *Baltimore, Md.*—*In Country Gentleman.*

### IMPROVED BREEDS OF PIGS.—ESSEX.

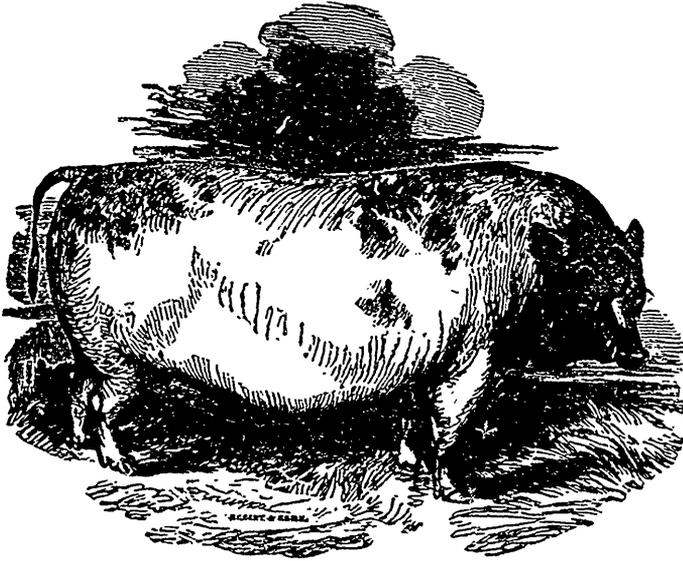


LORD WESTERN'S ESSEX BREED.

The Essex pigs, have been indebted for their improvement to crosses with the foreign breeds, and especially the Neapolitan, and with the Berkshire swine. They are mostly black and white, the head and hinder parts being black, and the back and belly white; they have smaller heads than the Berkshire pigs, and long and thin upright ears, short hair, a fine skin, good hind quarters, and a deep round carcass; they are also small-boned, and the flesh is delicate and well-favored. They produce large litters, but are bad nurses.

The most esteemed Essex breeds are entirely black, and are distinguished by having small teat-like appendages of the skin depending from the under part of the neck, which are commonly termed *wattles*. Some of these animals will attain the weight of 480 lbs., but they are not, according to some breeders, quick fatteners; while others prize them for their rapid growth and aptitude to lay on flesh, as well as for its excellence; it forms small and delicately-flavored pork. Lord Western has been the great improver of the Essex pigs, and his breed is highly esteemed throughout Great Britain.

## CHINESE SWINE.



CHINESE PIG,

From a Sow sent direct from China to William Ogilvy, Esq., in. Ser. Zool. Soc.

This breed forms one of the recognized stock breeds of England. There are two distinct varieties, the *white* and the *black*; both fatten readily, but from their diminutive size attain no great weight. They are small in limb, round in body, short in the head, wide in the cheek, and high in the chine; covered with very fine bristles growing from an exceedingly thin skin; and not peculiarly symmetrical, for, when fat, the head is so buried in the neck, that little more than the tip of the snout is visible. The pure Chinese hog is too delicate and susceptible of cold ever to become a really profitable animal in this country; it is difficult to rear, and the sows are not good nurses; but one or two judicious crosses have in a manner neutralized it.

This breed will fatten readily, and on a comparatively small quantity of food; and the flesh is exceedingly delicate, but does not make good bacon, and is often too fat and oily to be generally esteemed as pork. They are chiefly kept by those who rear sucking-pigs for the market, as they make excellent roasters at three weeks or a month old. Some authors point out five, some seven varieties of the Chinese breed, but these are doubtless the results of different crosses with our native kinds; among these are black, white, black and white, spotted, and blue and white, or sandy.—Many valuable crosses have been made with these animals; for the prevalent fault of the old English breeds having been coarseness of flesh, unwieldiness of form, and want of aptitude to fatten, an admixture of the Chinese breed has materially corrected these defects. Most of our smaller breeds are more nor less indebted to the Asiatic swine for their present compactness of form, the readiness with which they fatten on a small quantity of food, and their early maturity; but these advantages

are not considered by some persons as sufficiently great to compensate for the diminution in size, the increased delicacy of the animals, and the decrease of the number in the litters. The best cross is between the Berkshire and the Chinese.

We have been presented with a pair of improved Berkshires, from the pair to which was awarded the first prize at the New York State Fair held at Elmira. If they prove valuable, we shall be able to spare samples for breeding purposes in a few months.

**STEAM PLOUGH IN OPERATION.**—Mr. W. Smith of Wolston, England, under date of Nov. 13, thus writes to the Editor of the Mark Lane Express:

SIR—I have since harvest plowed by steam the whole of my farm, except a bit of wheat stubble left to try an experiment upon in the spring, and a bit of clover-ley plowed with horses. It may be interesting to some of your readers to know the result. I find that the implements exhibited by me at Chelmsford are perfect; that an ordinary seven-horse engine is sufficiently powerful for every useful purpose; that any clay, hilly or uneven field may be plowed: that in plowing my bean and pea stubble at a depth of six inches, I did an acre in one hour and thirteen minutes, and an average of five acres per day, including the time for shifting from field to field at an average cost of 5s. 2d. per acre, including men, coal, water, and horses for shifting; and that in plowing my wheat stubble, at a depth of eight inches on the heavy and ten inches on the light land, I did an acre in two hours, and an average of three acres per day, including time for shifting as above, at an average cost of 8s. 8d. per acre, including men, coal, &c., as above; to this must be added interest of money and wear and tear, say 1s. 6d. per acre, which will be the outside, the tackle coming in nearly as good as it went out. As to the value of the work, I give it to you in the words of practical farmers who visited me: "On the wheat stubbles the common plow is no use against yours; on heavy land the spade cannot equal yours; on bean stubbles one plowing with yours is worth more than two with the common plow."

**HOW TO FEED YOUNG HORSES.**—The adult horse does not require so much of the flesh-making principle as the young and growing animal, but he seems to require a greater variety. The adult merely requires enough to replace the waste—the wear and tear of his system. If he obtains more than this, the surplus is either excreted from the body, or else stored up within the same in the form of fat; and everybody knows that a fat horse, or a fat man, are not best adapted for a race, nor for hard labor; but all others (except those in a state of debility) they are most subject to acute disease. With the young and growing animal the case is different. Here we require bone, muscle and nerve. Oats, corn and pollard furnish the same. The colt obtains from its mother's milk all the elements of its own organization in a concentrated form—all that seems necessary for developing bodily proportions and hereditary traits—therefore, when weaned, the colt must be furnished with the same equivalents in the form of fodder, ground oats, wheat bran, and meal.

It is the young and growing animal that requires our greatest attention. If our readers desire to raise colts that shall remunerate them for the trouble and expense incurred, they must feed the same, during their minority, with a liberal hand. Any neglect at this period can never be made up in after life; the subjects will always remain lank and lean—living monuments of their master's folly, or ignorance, as the case may be. In addition to the food required for the colt's growth, we must also furnish enough to supply the waste incurred by expenditure of muscular power. We all know that the young are very active and playful. Every muscular movement involves an expenditure of vital force, and thus exhausts the system; therefore, in view of developing their full proportions, and promoting the integrity of the living mechanism, they must have nutritious food and plenty of it. They are not, however, to have a large quantity at a time, but little and often; the stomach is small, not larger than that of a man. Should it be ever distended with coarse and innutritious food, the organs of respiration and circulation become embarrassed, and the blood loaded with the carbon. They require food often, because the digestive organs are very active, and soon dispose of an ordinary meal; then comes the sensation of hunger, which every one knows is hard to bear.—*American Veterinary Journal.*

## CANADIAN STOCK AND FARMING.—A VISITOR'S OPINION.

Owego, Tioga Co., N.Y., Dec. 23, 1856.

WM. McDougall, Esq.

My Dear Sir,—When in Canada last October, I promised to give you a description of the Messrs. Millers' Farming, and Short Horns.

I was highly pleased with the quality of land in the townships of Markham and Pickering, in which they reside. I never saw soil better adapted for turnips. Messrs. Geo., Wm., and John Miller, had as fine a quality of *firm* Swedes as any farmer would wish to grow; notwithstanding the dry season, they were a good medium size. Amongst their numerous varieties, Skervings, in my opinion, was the best both in quantity and in quality.

I am undecided, from my own practice, whether Skervings or a large white firm Swede I have been in the habit of cultivating is the best—the seed of which I obtained from Mr. Wm. Hewer, Northleach, Gloucestershire, England, the well-known Hereford and Cotswold sheep breeder, and whose opinion I value highly. He seldom grows any other kind, and I have no doubt has improved the quality by raising his own seed yearly, with much care. I think the Messrs. Miller excellent farmers, as I felt assured no man can be called a good one who does not cultivate a root-crop, keeping a proper portion of stock to the number of acres he cultivates; this succulent crop adds much to the health of the stock, as well as much *juice* to the *manure heap*.

The Messrs. Miller have a fine herd of Short Horns and grades, having imported from Scotland twelve head of the former, ten of these heifers and a bull are equal to anything I ever put my hand upon—beautiful in symmetry and excellent in quality. I am very happy to meet with such a class of Short Horns, as I have never before met with so many in one herd, uniform in quality; they are truly worthy of just notoriety, and I think very hard to be beaten by any breed. The only reason I have to dislike Short Horns is, that I have found in *all breeders' herds* two, and more generally three qualities, in the same herd, and I do believe that no man can be deemed a *proper breeder*, with such disunion in his herd. But the Agricultural press has been as much to blame as “novice breeders;” it has “puffed” and portrayed second and third class animals, in the most extravagant manner, to the injury of the public. It has advertised third class bulls, to go to cows at twenty dollars per cow, when the animal itself would have been very dear indeed to a breeder to purchase at that price and who had only a few first-class females to be injured by him. Here *novice breeders* and Editors have very much lacked in judgment,—they have employed artists to make their bulls appear on paper enormous in size, and beautiful in symmetry, while the original was of the coarsest bone, and the most miserable quality of flesh, with hollow crops. These same artists being “noted novice breeders,” makes these facts, Mr. Editor, now appear more stubborn.

Now, sir, I contend that the person who bred these Short Horns of the Messrs. Miller, thoroughly understood his business, although I never before heard his name—*his hand* has governed him in the selection of his males, by which he has gained

*equality in quality*, all ranking in first-class. Such a man has never needed a "puff" and probably his name has never appeared in print as a breeder of Short Horns. When "novice judges" at our fairs get "trimmed out," such men will occupy their just and truly honorable station. Such men, in the present state of things, lay hid, or meet with a repulse from novice breeders, should they chance to offer an opinion. But, Mr. Editor, these artificial men, are beginning to find their proper level.

Examining another young bull imported by Messrs. Miller, at the same time, I found of different quality; he was leathery in his skin: finding this quality, I began to doubt whether S.Horns could be uniformly bred, but on questioning Mr. M., I found he was not bred by the same person; this again strengthened my opinion that they could be bred of first-class provided their breeders understood their business. This gentleman had searched far and wide to select the best bull he could find out of his herd, and told them he was unsatisfactory to him, although the best he could do, and that he had been five years in selecting the bull he had just purchased for himself, and he out of the hands of the butchers. Had all Short Horn breeders been as *careful* as this man has been, the breed would have formed a very different character in my estimation. Had I ten such Heifers as the Messrs. Miller, no second or third class bull, should enter my yard. Such a stock would establish any man (*truly*) as a first class breeder, provided his judgment is capable of selecting his males. Perseverance in this matter instead of puffed portraits and puffed articles in papers, is the most sure way to success, for such puffing bubbles must burst; the lenient hand of time brings such things to an end, all we require is patience.

I have seen descendants of Mr. Bates' herd, extensively exhibited at fairs in this country and Canada, many of which have gained first prizes, with flesh of second and third class quality, when it was only the *name* of a "puffed man," that gained it, and the animals have flourished on over-grown portraits, symmetrically drawn on paper, to attract all novices, and it has been upon this principle that Short Horns have gained their *assumed notoriety*; had they gained it by producing such animals as Messrs. Miller, they would have deservedly obtained first class, and it would have saved me much trouble in denouncing their evils. "Judges" have never looked sufficiently to quality—size has been their aim, and they have overshot the *right mark*; but enough of this, I have said so much on the same subject before. If the Messrs. Miller procure a *proper bull*, Canadians will find them breeders hard to be beaten.

The Messrs. Miller have a very fine flock of sheep, but not being a very strong advocate for blue-faced Leicesters, I valued their Cotswolds much higher. They have some very fine ones of the latter, and I consider the former well bred of their kind.

I was sorry to see that these spirited importers had *no taste* for gardening, but the old adage is, "a good farmer never makes a good gardener," still a little refinement in the flower and kitchen gardens, speaks well for the inmates of the house to passers by, and gives a lively appearance to the neighborhood.

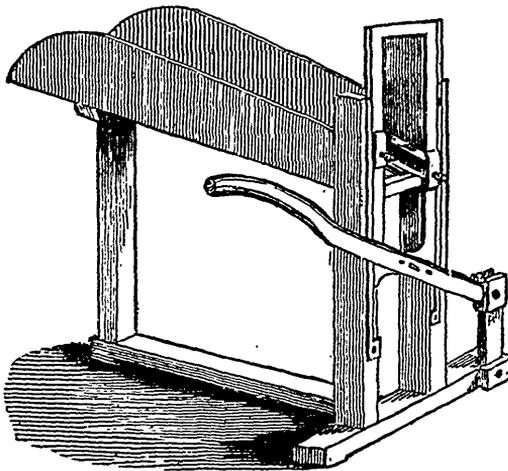
I was much amused with the description Mr. Geo. Miller gave me of the building

of his mud house. This he did with his own hands, and a three-tined dung fork. A person chopped straw with an axe, mixed it with the mud dug from the cellar, while he laid the wall, which, when sufficiently dry, he hewed in shape with a broad-axe. This he said cost in the whole, 113 days' work for one man; he being the principal operator. It was afterwards covered with small stones and lime mortar, giving it the appearance of stone. His orchard was planted and grafted by his own hands, which had the appearance of a very thrifty growth; therefore he enjoys the sweet sleep of industry.

The Messrs. Miller abound in large Clydesdale mares and colts, quite an acquisition to the country, in my opinion, and Canadians will find it to their advantage to cultivate such animals.

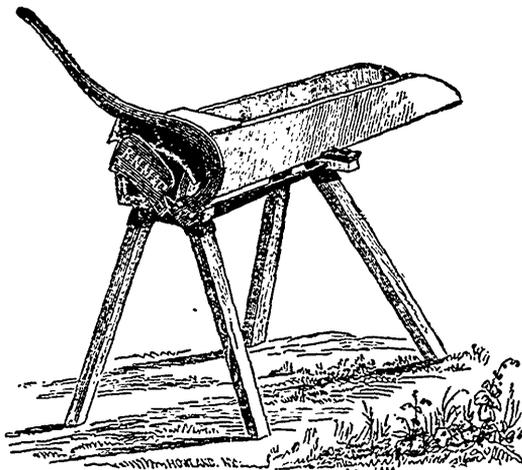
I am, Dear Sir, yours sincerely,

WM. HY. SOTHAM.



#### HAND STRAW CUTTER.

We have given descriptions of various kinds of Straw Cutters in previous numbers of the *Agriculturist*. The above cut represents one in common use in some parts of the country. When well made they answer a good purpose. The straw is moved by the hand. It is simple and cheap, but not, in our opinion, so good as the cylinder machine.



#### SMITH'S PATENT LEVER CUTTER.

This is a strong machine, well adapted for corn stalks and coarse fodder. It is not easily injured in inexperienced hands, or from exposure to weather, &c. We are not aware that any of this kind are manufactured in Canada. It is an American machine.

## BOTS IN HORSES.

*To the Editor of the Agriculturist.*

SIR,—I have received and read the December Number of the *Agriculturist* with much satisfaction.

That learned lecture delivered before the Legislators of the State of Maine, upon Colic and Bots in Horses, is worth ten years subscription for the *Agriculturist*, to any lover of that noble animal, the horse.

His description of Quacks making a "slop shop" of the horse's stomach, I believe to be perfectly true, and that many a fine animal has been killed by being drugged for Bots.

I most decidedly differ from the learned lecturer when he states that Bots are "harmless" in the stomachs of horses.

"He says he has heard some wonderful stories related of Bots burrowing through the coats of the stomach, this, he thinks, rarely takes place while the horse is alive; that cavity is the home of the Bot, its natural habitation, for he knows of no other."

I will admit the "habitation," and relate a case that came under my personal observation, and ask a few questions for information:—

More than thirty years ago, in the month of March, a man had a horse, which had been poorly wintered, taken sick at my place. The animal appeared to be in great distress; rolling, biting his flanks, stretching, and rolling again. There were many men present. Some said he had Bots, others the Colic; however, it was the general opinion that he had not stuff enough in him to produce the Colic. The pain continued about thirty hours, when he died. I had the carcase opened while warm; there was no visible sign of Colic to my dull understanding. Taking out the almost empty stomach, we saw large dark-looking spots upon it, externally covered with small black specks or points protruding through the stomach; passing my finger over the place it felt hard and rough like a grater.

Opening the stomach we discovered these dark spots to be a compact mass of bots, the largest spot the size of my hand, and two other spots each more than half as large; altogether they would form a space six inches square, and contained several hundreds of bots. They were as compact and as well fitted together as cells in honey comb, and as the Lecturer observes, they were attached to the stomach by "one end," which he does not say, and were as large as the full-grown Bot-fly. I poured strong whiskey on them, which had no visible effect. They appeared perfectly temperate. I regret that I had not turned the stomach over and poured the whiskey directly into their face and eyes, to see if that would make them wink. This made me suppose that drugs could not be given to kill Bots without killing the horse, which I verily believe is too often the case. Scraping the Bots off the stomach with a knife, to which they were firmly attached, we were astonished to find the whole inside coat of the stomach eaten up, or gone the full size of the patches covered with the Bots, with innumerable holes entirely through the stomach.

Mr. Editor, I desire to ask the learned lecturer or any one who says that Bots are *harmless*—

*First*—What caused the death of the horse above dissected ?

*Secondly*—Why is the horse afraid of the Bot-fly ?

*Thirdly*—Why does the horse during the time the fly is laying his nit or egg on the hair of the horse, so often rub with his lips and teeth the parts covered with the eggs ?—This is surely the case—and why is it so ?

*Fourthly*—The lecturer says the “stomach is the house of the Bot.” *Suppose it is*—was the horse created for the very purpose of hatching and maturing the Bot-fly ?

*Fifthly*—Here is the sum of the whole business. What does the Bot live upon in the stomach from the time it is hatched to the full-grown fly, does he eat hay second-hand from the horse ? if so, he is *harmless* ; or does he draw his nourishment from the juices of the stomach ?

*Lastly*—How was it in the case of the horse whose death I have described : the horse was poor, the stomach of course lean and dry, and the Bots numerous : would self-preservation induce the Bots to eat through the coat of the stomach ? and if so, was it any damage to the horse, to destroy a part of the inside coat of the stomach, and make an hundred holes through it ?

An answer to these several enquiries will much oblige,

Your humble servant,

Paris, Dec., 1856.

H. CAPRON.

A correspondent says that it is a well-known fact *away down East*, that cows will drop their calves in the day time, if they are milked the last time for the season on Sunday morning—try it. This is of material consequence to all who stable their cows.

#### TO PREVENT SMUT.

Put one bushel of lime to ten of wheat, clean your barn floor well, put down the desired quantity you want of lime, then stir it well, then sift over slackened lime until you get the quantity that is wanted, then wet it and stir it three times a day for eight and forty hours : twenty-four hours will help it but the other will cure it. Balded wheat is more subject to smut than the bearded wheat ; this I have observed for several years.

JOHN McCORMICK.

BURFORD, Dec. 25, 1856.

**THE MUCK BED.**—There is a “placer” too often unworked, which contains untold wealth to the farmer. It is a well-established fact, that two loads of muck, which may be had at the cost of draining, composted with one load of animal manure, furnish three loads of fertilising material equal to barn-yard manure. Let not this means of increasing the product of the farm remain unemployed. Add muck to the manure from the stables spread it over the yards, use it freely. If sufficiently dry, it forms a capital bedding material for stabled animals, absorbing the liquid manures, and becoming thoroughly incorporated with the solid.

Draining of wet lands and marshes adds to their value, by making them to produce more, and by improving the health of neighborhoods—both important considerations.

## FARM MANAGEMENT—LOSS OF MANURE.

*To the Editor of the Agriculturist.*

Credit, C. W., Jan. 17th, 1857.

Sir,—As a young farmer having everything to learn and but little to teach, it is with considerable diffidence that I take up the gauntlet thrown down to correspondents in your December number.

By bringing before your readers, what I cannot but consider two very important points in the farm management (or rather mismanagement) of this country, I hope to draw forth remarks from practical men, their opinions, and the results of their experience, here and at home; which I am convinced will be of very great benefit to the agricultural community at large.

The points to which I allude, sir, are *the great waste of cattle food, by unnecessary exposure of stock to wet and cold, and the needless loss and wasteful use of manure.* By a large proportion of our farmers the first of these is accomplished by allowing the cattle to shiver about during our biting winter in the open barnyard, with perhaps an open shed by way of shelter, and food if they get anything besides the run of the straw rick, a *little* hay or cat straw is thrown out on the ground which the strongest cattle immediately take possession of, the younger and weaker ones which require the most, getting barely enough to spoil their appetite for the straw, by which treatment even if they escape mange and other contagious diseases, resulting from such inhumanity, the whole herd becomes so disgracefully out of condition by the spring, that nearly the whole summer is required to regain their *wasted* flesh. There cannot be a second opinion as to the absurdity of allowing animals to get out of condition, as it is palpably a fact, that all the food a growing beast eats whilst declining in flesh from a given weight, as well as all he eats in regaining that weight, must be lost entirely—*wasted*. And in the case of milch cows it is well-known that if a cow be allowed to decline in her milk for a given time, it will require about double that time and an equal proportion of food to bring the yield up to the original mark, causing a waste of both food and milk, and by the same rule a cow that has been inefficiently wintered, will not only yield an unremunerate supply of milk during the winter, but her milk during a great part at least of the succeeding summer will be inferior both in *quality* and quantity, while as I can prove by my own experience the opposite will be the result of more liberal management.

The second point, loss of manure, follows as a matter of course, the cattle droppings being necessarily of very inferior quality, and even that quality being infinitely reduced by exposure to all weathers: this may be seen to the satisfaction of any one who will visit a common Canadian barnyard, during the rainy months of March or April, liquid manure of the color of brandy and full of ammonia may be seen running away by the hogshead to *waste*—always to waste! as if it were not true that “*wilful waste makes woeful want.*” If we *waste* good dung, we must expect to *want* good crops. Then follows my last point, the wasteful use of the nearly value-

less remainder: we drive through the country in our scorching months of June, July and August, and we see on all sides fields covered sparsely over with little heaps of (so called) manure, which have in many cases been out for two or three weeks, and upon examination prove to be mere wisps of dirty, half-rotten straw, and as dry as a chip—the farmer is manuring his summer fallow! is he? Let him not blame his land or the season if he only get fifteen bushels of wheat to the acre at harvest.

Now, sir, as the majority of our farmers are not capitalists, and as agriculture, as a *science*, though progressing, is still young in this country, we cannot expect to have high farming in Canada just yet; we cannot spurt liquid manure over our fields from hydrants after the manner of Tiptree Hall, nor can we (labor being so dear) adopt any other than the most simple plans possible in improving our system of management; nevertheless, I hope to be able to show that in the particulars of which I am writing, much *may* be done. The first step in the manufacture of good manure in large quantities is the proper management of stock, we must have as large a stock to keep up our farms with, as we can make our farms keep up *well*, and it *must be of such breeds and quality as shall best pay for its care and keep*. The system of having two or three cows stabled in one place, and two or three heifers or calves in another place, and two or three horses somewhere else, I would (where practicable) do away with, and to avail myself somewhat of animal heat, and facilitate as much as possible the feeder's work, I would have the whole stock; (except pigs and sheep) in one snug building, somewhat after the plan I send you with this, and which could of course be made larger or smaller to accommodate any stock, it should be placed as near as possible to the barn, and the loft might be filled with straw for bedding,—the food hay, wheaten and oaten straw, should be cut up in the barn with a straw cutter worked by the horses. The system of feeding I do not speak of here. Under this building I would construct a rough cellar, into which the *whole* of the manure liquid and solid could, with the greatest care, be thrown by means of the trap-door shown in the ground plan: the fine double lines represent open drains or gutters, through which the liquid manure would run from time to time on to the heap and become thoroughly incorporated. I am aware that these drains would freeze up more or less in the very cold weather (though not so much as might at first sight appear probable, as the animal heat would keep the temperature up considerably) but this would be of little consequence, as, while frozen the liquid could not of course escape, and if the floor was properly graded towards the drains it must all find its way in the right direction whenever a thaw came. All the labor of piling the dung in the spring and summer would be avoided, it would merely require levelling down occasionally as it got too high under the trap door, and a little gypsum or common plaster, sown now and then over the heap, would tend to fix the ammonia and volatile products of fermentation, and further it would be out of all harm's way from sun or rain. An eave-trough round the building could be made to supply water to the heap occasionally, if it became too dry, but I think this would not be wanted, for I am induced to believe that the great superiority of Peruvian guano over other known manures, mainly consists in the fact that as it drops from the sea fowl, it is the even admixture of the solid and liquid excrement

and that it is deposited in a climate where little or no rain falls. If I could avail myself of a side-hill for this building as shown in the elevation, so much the better, if not, I would excavate three or four feet and carry the foundation walls up four or five more so as to give height for a waggon to be backed into the pile for hauling out. I would use as little long straw for bedding as might be consistent with comfort and cleanliness, and keep as large a stock (housed from the beginning of November to the end of April) as the remainder would feed when cut up with hay and oaten straw, &c., so as to get the greatest possible quantity, and of a better quality than if too much long straw were mixed with it; in fact, if I could command the labor I would cut up the bedding too.

Having thus avoided all waste of food, all exposure of stock to inclement weather, and all waste in the manufacture of the manure, without any extravagant or unremunerative outlay, it merely remains to beware of the *wasteful use* of the manure, and here I hope to lessen rather than increase the expense of the present very general system. Presupposing then, that keeping a good stock and having a good proportion of land in grass, I should always have my farm in tolerably good heart, I would have as little naked summer fallow as possible, and instead of hauling my manure in the summer or harvest of the year, I would do this in the fall after the wheat was sown, and then taking a little more time and pains than customary, I would spread and plough it in acre for acre as it came out; in this land I would sow peas or vetches, or such crop as should not exhaust the land, and should come off early enough to prepare for wheat, and I am much mistaken if after all this, I should not get as good a crop of wheat as the man who ploughed in the dry little heaps before alluded to.

Having already, sir, taken up too much of your valuable space, I will only repeat in conclusion, that your opinion and that of others, better informed on the above important topics than myself, cannot fail to be of great benefit to many of your readers, and although these are questions that have been mooted over and over again in your paper, they cannot be too often brought forward while the practice is so lamentably bad as it is at present.

Line upon line, precept upon precept, are as necessary to success in the study of agriculture, as in the doctrines of religion.

Wishing you every prosperity in your useful labors during the present year,

I remain, sir, your obedient serv't,

W. R. FORSTER.

CATERPILLARS ON FRUIT TREES.—A Correspondent of the Rural N. Yorker gives the following.—“I had quite a number of fruit trees last season which were attacked very severely by caterpillars, and I got rid of them in the following manner:—I removed all the caterpillars from the trees, with a brush, or whatever was most convenient, killing as many as possible by stepping upon them, and then with a swab put on a band or ring of tar, just below the limbs. I then kept watch of the trees, and in a short time the caterpillars that remained undestroyed upon the ground, began to ascend them, but upon coming to the tar were compelled to stop. They soon collected in large numbers upon the bodies of the trees, when they were easily destroyed.”

## HARDY PERENIAL FLOWERING PLANTS.

This class of plants has of late years been sadly neglected in this country, for what reason I know not, for nothing makes the garden more gay with so little trouble as they. Look at the English cottagers' gardens, filled with Daisies and Pansies, Primroses and Auriculars, Polanthus and Iris, Phloxes and Carnations, Pinks and Picotees, Ranunculus and Anemones, and a host of others, worthy inhabitants of any garden, and vastly superior to the trash now so common through the length and breadth of the land, loading the air with fragrance and feasting the eye with their brilliant colors and varied forms and tell me where is garden so pleasant to look upon. Some may say "We cannot grow those things in this country," and of one or two of them it is true, but most of them *can* be grown here and that too so as to be hard to beat. During our short, dry summers, many Annuals upon which most gardens depend for effect, are difficult to grow and require great attention. To secure success with any plant it must be looked after, but the herbaceous perennial plants of which I shall now speak require less than most others.

Perhaps it would be well to commence with the noble Phlox, of the beauties of which few persons have a correct idea. The word Phlox means flame, the plant belongs to the Nat order, Polymoniacea. They are all with the exception of one species,—Drummondu,—herbaceous Perennials.

They are separated into two classes according to their manner of growth, the tall ones growing about three feet high are styled Suffruticose varieties, and the lower ones are called Decuesate varieties. They produce large panicles or covymbs of flowers of various colors some of them beautifully striped as Van Houtii, Roi Leopold, &c., and thrive well in good garden soil. By a judicious choice of varieties, they may be had in flower for several months, from June to October. It is needless to enumerate varieties here, for any person ordering a dozen plants from a respectable nurseryman will get as good a collection, as will be needed. Next comes *Diclybra Spectabilis*, belonging to the Nat. order; Fumariaceæ, the name derived from *dis* two, and *elytron* a sheath, referring to the form of the sepals.

It was described by Linnæus, but never seen alive in Europe till introduced from China by Mr. Fortune, into the garden of the Horticultural Society of London, in 1846. Its specific name, *Spectabilis*, means remarkable, and it is remarkably different in habit to any other occupant of our gardens: the flowers are produced in racemes, on stalks about one foot long and hang in an exceeding graceful, drooping manner, from the under side. It requires rich light soil, and is easily propagated by division of the roots. It *must* be in every good garden.

The Carnation and Picotee, *Dianthus Caryophyus* and the Pink. *Dianthus Plumarius* are well-known but not sufficiently appreciated, and at present good ones are scarce in this country, and consequently dear, but in the course of a year or two I hope they will be both plentiful and cheap. The improved varieties are really elegant and are indispensable in every good collection. Good varieties may be obtained from carefully selected seed, and when once obtained should be perpetuated by layers or cuttings. For bouquets the flowers are invaluable on account of their beauty and fragrance.

The Primrose, *Primula Vulgaris*, from *primus*, is well-known as the earliest plants to flower in the spring, and many of the varieties are beautiful. *Cortusoides* is one of the best here. The Polyanthus is a sub-species of the common primrose as is also the Auricular; *Primula Auricula*. In England the Polyanthus is one of the greatest ornaments in the cottager's garden, and of late years it has been vastly improved. I have some very fine varieties raised from English seed, some of the individual flowers or pips measuring one inch across, and 10 or 12 pips in a truss.

The Auricula is a general favorite with the Londoners or Cockney, many of whom will persist in calling them Recklesses, notwithstanding the spelling of the name, and I have seen some excellent ones in this country. They must, however, have a little protection during the winter. It is a noble flower and worthy of very general attention.

The Viola Tricolor or Pansy, although strictly speaking not a perennial, may also be made to add to the appearance of the garden, by the gorgeous beauty of its flowers and by procuring good varieties or good seed they may be made to produce flowers two inches in diameter and of every shade of purple and yellow to black and even bronze color.

I might go on with a host of others, but the space forbides, but all the foregoing deserve marked attention, and persons not possessing all or any of them, who intend replenishing or making their gardens in the spring, will do well to try them, carefully discarding all inferior varieties, and may success attend their efforts. Meanwhile, *au revoir*.

W. T. GOLDSMITH.

Rochester, January 6, 1857.

#### HINTS TO WORKMEN ON HEALTH.

1. Abstain from all spirits and dram drinking. Spirits relax the muscles, diminish the strength of the body, and render men susceptible of disease.
2. Let your food be coarse and plain. Concentrated and highly-seasoned food is, if possible, as bad as liquors.
3. Where (well-filtered) water does not disagree, value the privilege and continue it. Pure water is a far better beverage for the sedentary, and those who take but little exercise, and for those whose labor or exhausted strength do not require stimulants.
4. The quantity (of most things) is always more hurtful than the quality.
5. Take your meals at regular hours always. The human frame is capable of being changed from sickness to perfect health, by a well-regulated system of diet.
6. Avoid everything, however agreeable to the palate, that from experience you find so disagree with you.
7. Make daily ablution the first thing on rising; you will feel stronger and more refreshed from it during the day. I fancy that I hear you say that you have not the time to do so. My answer to you is, rise ten minutes earlier, dip a coarse towel in cold water, wring it out, and rub the whole body over. "Cleanliness is next to godliness."
8. Never quack with your constitution by taking patent medicines; they are offered for every kind of disease, for many of which they are decidedly prejudicial, producing very often fatal results. If indisposed (and if it is possible to do so,) remain quiet, avoid all excitement, and abstain from all meats and fermented liquors for the day. In headache and slight fever, this plan mostly effects a cure. Never use purgatives.
9. Take exercise if you value your health, but proportion it to your strength.
10. Never learn to smoke; shun tobacco in all its forms, it stunts the growth, when taken at too early an age; it is a great promoter of indolence and laziness; it causes nervous trembling of the hands, and nervous debility; it has nothing nourishing or stimulating in it, but is merely a narcotic, of which the moral and physical effects upon those who use it are of a very dubious character.

## STOVES ECONOMIZING HEAT.

It is well known that cylindrical stoves give out the most heat, and have the best draft, but there are few who seem to know the reason why. They do not seem to be aware, at least, that there is anything in the principle of their construction which imparts to them such qualities. Stove manufactures cannot be accused of possessing too much scientific knowledge regarding the best form of stoves, or we would not see so many blunders committed by them in casting so many with square and rectangular furnaces.—This is especially the case with cooking ranges and stoves,—their fire boxes are constructed on wrong principles.

The reason why a cylinder stove gives out so much heat, and tends to produce such a good draft, is owing to the sides of its fire box or furnace being concave in form. Heat, like light, may be concentrated by concave mirrors; hence the heat is more concentrated in stoves which have concave than those which have square fire boxes; the rectangular form of a fire box may be more convenient for cooking ranges, but there is no excuse for constructing the furnace of any parlor or other heating stove of square form.

The fire-brick for lining stoves should be fluted. Bricks with plain surface are not so durable as the fluted kind, because the latter tends to prevent the adherence of clinker. Some bricks for stoves are actually cast with convex surfaces, as if designed for scattering the rays of heat, thus exhibiting ignorance of the laws of heat.

Bright metal surfaces do not radiate so well as dark, dull surfaces, therefore Russia iron in stoves and pipe does not radiate so much heat into a room as common iron. These surfaces which radiate heat most efficiently also possess the power of absorbing it and *vice versa*.

As the intensity of heat varies as the square of the distance from the radiating point, it is evident that the nearer the stove is placed to the centre of the room, or space which it is designed to heat, the more uniform will be the temperature of the whole space, and not only so, but a greater amount of heat will be economized.

Stove manufactures have devoted an immense amount of attention to elaborate the surfaces of cast-iron-stoves, and to produce an incalculable amount of complicated forms, but not so much to produce stoves based upon the philosophy of the laws of heat. We hope that more attention, scientifically, will hereafter be devoted to this great and important branch of American manufactures.—*Scientific American*.

FOR THE HICCUPS.—Travelling some time since by railroad from Columbus to Baltimore I took my seat immediately in front of a gentleman who was suffering under a paroxysm of hiccups, to a degree that I had never before witnessed. In a few minutes a person appeared from the end of the car and took a seat beside him, when he said: "Sir, can you tell me what is good for the hiccups? I have been afflicted in the way you see me since yesterday noon, and had no rest or relief from any physician to whom I applied for assistance; I am worn out with suffering." To whom the person replied. "Sir, I will cure you in less than ten minutes by the watch.—Have confidence, for I am sure I can do it. Hold up high above your head two fingers of the right hand; lean back in your seat, open your mouth and throat so as to give a free passage to your lungs; breathe very long and softly, and look very steadily at your fingers." In less than the time specified the cure was performed, one hiccup only occurring during the trial. The patient could not express his gratitude, while the practitioner only extracted from him as a fee the promise that he would extend the knowledge which he had imparted as freely as he had received it assuring him that he would never be disappointed in the result. We were all struck with the fact. Since then I have often had occasion to practice upon patients in the same disorder, and never without the most signal success.—*Water Cure Journal*.

CAYENNE.—A Cayenne correspondent of the *Journal du Havre* says:—"The gold fever gains on us seriously; we herewith send you home 30,000f. worth, the produce of a month's labour of 35 miners on the banks of the Arataya, not far from the mountain which bears the name of the Empress Eugénie. Gold is discovered every day and in every direction, but the basin of the Approuague produces the most brilliant results. The governor has gone personally to inspect the principal places. It is a journey of twelve days, which, we hope, will secure to France the possession of a real California in this poor Cayenne, so roughly tried during two centuries."

**CORN-PLANTERS.**—We have given descriptions of a great variety of planters—some drawn by horses, some by hand, others to be carried as a cane, or worn upon the heel of the boot. Mr. D. B. Neal, of Ohio, has recently patented a planting hoe, or rather a machine that may be attached to any field or garden hoe, that drops corn and smaller seeds. Verily, "ingenious fancy is never better pleased," now-a-days, than when at work to accomode farmers.—*N. E. Farmer.*

### PREMIUM FOR IMPORTED AGRICULTURAL STALLION.

Our readers are aware that it has been the practice of the Directors of the Provincial Association to offer increased premiums to such imported animals as shall obtain first prizes at the Society's annual exhibition. This encouragement to importers has already been productive of beneficial results.

The Board of Agriculture has officially announced that a premium of £50 will be given to the best Agricultural Stallion, imported from Britain since the last exhibition, at the Provincial Show, to be held at Brantford in September next. The Association offers £35, and its President, Geo. Alexander, Esq., of Woodstock, £15, making together the handsome sum of \$200. Such a premium, with the honor attached to the winning of it will, no doubt, induce enterprising individuals to import for the object of the competition, and thus become the means of benefiting their country. The Secretary of the Board of Agriculture will furnish any additional particulars that may be desired. Mr. Alexander deserves the thanks of the country for the zeal and liberality which he evinces in entering upon his important duties.

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### FRESH SEEDS, 1857.

**LYMAN, SAVAGE & CO.** (successors to Wm. Lyman & Co.) have just received from Europe and the United States their usual and very extensive supplies of GARDEN, FIELD, and FLOWER SEEDS, which they offer to Country Merchants, Farmers, and Gardeners, upon liberal terms. The Seeds are the growth of 1856, imported from the most reliable houses, and are warranted true to their names. Amongst them are the following:—

200 lbs. Blood Beet.
100 lbs. Sugar do.
200 lbs. Early York Cabbage.
20 lbs. Drumhead do.
100 lbs. Low Dutch do.
50 lbs. Large French York do.
50 lbs. St. Denis do. do.
28 lbs. Red Dutch Pickling do.
20 lbs. Assorted Paris Cauliflower.
500 lbs. Long Orange Carrot.
400 lbs. White Belgian do.
200 lbs. Early Farm Cucumber.
100 lbs. Long Green do.
500 lbs. Mangle Wurtzel, Long Red.
200 lbs. do. do. Yellow Globe.
4000 lbs. Red American Onion.
500 lbs. Yellow do.
100 lbs. White do.
50 bushels Assorted Garden Peas.
10 do. Radish, assorted.
20 do. Yellow Aberdeen Turnip.
60 do. Yellow Swedo do.
20 do. White Globe do.
10 do. Early Stone do.
200 do. Indian Corn, various kinds.
Long Vermont Clover.
Do. Rawdon do.
Do. Dutch do.
Upper Canada do.
White Dutch do.
Lucerne.
Timothy, English Lawn Grass.
Hemp, Canary, and Rape Seed, &c., &c., &c.

February 2, 1857.