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THE

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UNIVERSAL AGRICULTURAL EXHIBITION AT PARIS.

To Napoleon III. must be ascribed the honor of having opened up to agriculture the same advantages of competition as to the other industrial arts in the international exhibitions. It is true that in the Great Exhibition of London in 1851, there was a splendid display of British agricultural implements and machines, which enraptured the most sober-minded observers. But that most important branch of agriculture, the breeding and rearing of cattle, was entirely wanting. The success which attended the International Show held last year, in conjunction with the Great Exhibition of all nations, in Paris, induced the Emperor to offer premiums for similar shows for this year and next. This is, no doubt, a clear-sighted policy, which cannot fail materially to infuse a new life into the comparatively feeble agriculture of France. To watch the influence of these great gatherings in the French metropolis on the husbandry of that people must present many points, both curious and useful. These friendly gatherings from the most advanced nations of Europe, must have a powerful tendency to strengthen the bonds of peace, by promoting the advancement of its principal art.

The principal building erected for the World's Exhibition last year, was used for the Agricultural Show this. The building is intended to be permanent, and besides answering the purpose of annual agricultural and horticultural shows and other objects, the grand Exposition of French art and manufactures, which for a long time has been held in Paris every five years, will find in this ornamental erection every convenience. To the Agricultural Exhibition of this year the French Government offered premiums to the amount of £7000 sterling, besides innumerable medals of gold, silver, and bronze. The following is a tabular statement of the entries :—

Cattle	1302	Poultry	375
Sheep	729	Pigeons, &c	99
Swine	171		
Goats, Rabbits, &c	81	Total Live Stock	2757
Total	2283	Implements	2108
		Produce	4635
		Pisci-Culture (Fish)	51

About forty different classes of cattle were exhibited, all possessing characteristics which were in a great measure due to peculiarity of climate, uses, and management. The Paris Exhibition, having specimens from various countries, afforded a rare opportunity of observing the effects of climate on the breeding and adaptation of the domesticated animals. In the British islands cattle are usually estimated by two standards—their *milking* and their *fattening* qualities. These two qualities divide all their breeds into two classes, the one represented by the Ayrshire, the other by the improved Short-horn. But on the continent of Europe, as well as in some parts of this continent, another quality has to be taken into consideration, viz., their fitness for *labour*.

Subjoined is an abridgement of a portion of an excellently written paper in the last number of the *Scottish Journal of Agriculture* on the late Paris Agricultural Exhibition, by a practical Scotch farmer, whose habit of observation is evidently of a high order. He classifies the animals into two great divisions, viz., the milk-producing and the beef-producing breeds.

The Ayrshires and Alderneys stood first in a pre-eminent degree as milkers, and they were eagerly purchased. Next came the Holland cattle. They are generally heavier than the Ayrshire, from the greater luxuriance of the pastures, and the system of soiling so generally practised in that country. Some of them are perfect in shape as milkers. Next is placed the Swiss breeds, the Kerry, the French, Normand, Flamand and Breton, the Jutland, the Bavarian, the Saxon, and Bohemian cattle. The Normand and Flamand are large animals, adapted to situations where soil and climate are good, and they combine in a high degree size and milking qualities, and would throw a superior cross with the Short-horns for breeding purposes, their flesh being naturally fine. The Kerry, Breton, and Jutland cattle may be classed together, as being all small, having good shapes as milkers, and well adapted to their pastures. No animals in the Exhibition sold so readily as the Bretons; small and beautiful, with a neat head, a full large gazelle eye, amiable countenance, and quiet disposition, they gained the admiration of all. They resemble in many points the Shetlanders. At the Imperial School at Grigon, the Ayrshires yield the largest quantity of milk in proportion to the amount of food consumed, the Swiss cattle come next, and the Bretons next.

For feeding purposes, more especially, the Durhams or improved Short-horns stand unrivalled. They are eagerly sought after by improving agriculturists in all parts of the world, and command the highest prices; and the number shown by Frenchmen at this Exhibition affords a proof how highly they are esteemed in that country. Next to the Durhams are to be placed the improved Herefords, which some of their admirers consider rival even the former in precocity, when treated as liberally. None of the foreign races approach the symmetry of the Durhams; but the Charotaire, which are pure white, possess many of the qualities which distinguish the pure Short-horns, such as quickness of disposition, fineness of bone, delicacy of touch, and beauty of form. Next to them came the Garonnaise, Agenaise, Bazadaise, and Cortois. These may be considered as analogous or congeners of the races represented by the Garonnaise, a favourite breed, common on the plains of the Garonne, where it is held in

very high repute, and is even considered by some to be the origin of the Durhams. The specimens shown at the Paris Exhibition did not support such a theory.

The Scotch Polled Cattle were exceedingly good, and most creditable to North Britain, and they excited general curiosity. In no breed are the effects of a proper attention to the principles of breeding more apparent than in this; for in the same district there may almost be said to be two distinct breeds, so great is the difference between the improved and the original. As quite opposite to the polled cattle, may be mentioned the Hungarian, which are distinguished by horns two or three feet long, extending straight out from each side of the forehead, coarse, leggy, thin-backed, flat-sided animals. They are the same breed which are so much used in the steppes of Russia and in the Crimea as beasts of burden, and, from their peculiar conformation, are well adapted for getting more quickly over the ground than animals of more perfect form.

The West Highlanders were not good; they were out of condition, and they were just casting their hair. The Race de Salers includes the cattle of Aubrac, Limousin, and Auvergne. This breed occupies the place among the French cattle which our West Highlanders do among the English. Reared in a district similar in geological formation to the Scottish Highlands, composed of granite and gneiss mountains, which rise several thousand feet above the level of the sea, they have all the hardiness of the Scotch breed. No race is said to combine in an equal degree hardiness, fitness for labour, with good milking qualities, and an aptitude to fatten when they are well fed. In Auvergne the cows are allowed to go for six months of the year in a half-wild state, pasturing on the hills in summer, and folded at night.

"We would not advise any tampering with our improved British breeds by the introduction of foreign blood. Let our Ayrshires retain their elegance, gracefulness, and excellent milking properties; let our Durhams esteem their majestic gait, precocity, and aptitude to fatten; let our Leicesters and Southdowns retain their perfect symmetry; let our Cheviots and Blackfaced lose not their hardiness. From everything we saw, they cannot be improved by the amalgamation of foreign blood. The experiment would be dangerous. But it must be admitted that the pure breeds are not, under all circumstances of British farming, the most profitable; the crosses are often the most important and valuable. It is well known that in London a cross with the improved Short-horn and a cow from a breed valued for its milking qualities, is preferred by dairymen to a cow of the pure milking breed, because, when it is of no further use for giving milk, it is more easily fattened off, and attains a greater weight than the latter."

The Swiss cattle were in high repute with many English, and a nobleman purchased fourteen of them for his own country. They might, perhaps, improve the milking properties of the breeds of the south of England. A judicious cross between the Ayrshire and Breton might, under some circumstances, be highly advantageous. The Exhibition was rich, and most instructive in crosses; and the high value of Short-horns might be seen in the numerous crosses which bore their characters. Those between that breed and the Cotertine, the Flanande, the Marceau, the Dutch, and the Charolair, were particularly worthy of notice, and show the immense advantages that would accrue to France by the production of more beef, in raising first crosses with a short-horn bull and their best native cows. The crosses between the Normande and Flanande were the largest of any in the Exhibition. The French appear to be trading too much from crosses. The first crosses are good, but to trade from them

is always more or less attended by risk. Ayrshires were largely purchased by foreigners, indicating that the production of milk is of more importance with them than beef.

In Sheep, all the British breeds were well represented. These combine, as far as practicable, the production of meat, with a somewhat coarse but useful kind of wool. The British sheep-rearer looks principally to the production of mutton, the continental to the finer qualities of wool. And it is an established fact among graziers that the production of fine wool is incompatible with early maturity and aptitude to fatten or rapid production of mutton, in the same breed of sheep. The Merino breed, as might be expected, formed an interesting part of the Show, consisting of excellent specimens from France, Austria, and Saxony. Spain, it appears, had no direct representatives. It is astonishing what pains are taken on this continent in their breeding; registers of their pedigrees being kept as strictly, perhaps, as those of Short-horns or Leicesters in Britain; and flocks truly immense are frequently to be met with, belonging to a single owner. An anecdote is related, that a noble duke, of large possessions in the south of Scotland, once told a foreign nobleman the probable number of the sheep which grazed on his hundred hills—"that," answered the foreigner, "is the number of my shepherds."

The show of swine was inferior to what is usually seen at the principal British Exhibitions. The finest animals were either the property of Englishmen, or bred by them and sold to the French. Of the French races there were the Normande, the Craonnais, and the Marceau—all coarse animals, large, bony, thin in the back, flat in the sides, with very long ears. Austria sent animals which appeared to have scarcely emerged from the wild state. In this department British agriculture stands pre-eminently unrivalled.

In produce the exhibition was extensive and instructive; obtained from most of the countries in Europe. The best wheat was a variety called Brodies, in the high district of Haddington, Scotland; it was spring-sown. France made great exertions to have this part of the Exhibition as extensive and interesting as possible. Her colonies sent also some interesting collections of their produce, among which that of Algiers was decidedly the first. Upon the whole, the exhibition must be regarded as highly successful, and cannot fail in producing most extensive and beneficial results.

THE CROPS.—The Journal of the N. Y. State Agricultural Society thus briefly sums up the condition and prospects of the principal crops of New York:

"From the returns received, it is evident that the crops will scarcely equal the average of a good year. Wheat is very fine in the berry, though injured in many localities by the fly; barley is a very good crop, and a large breadth sown; oats, owing to the dry weather, will, be a dimished yield; rye, crop good; corn, owing to the dry weather, will, in most of the counties in the State, be less than an average; hay, well secured, a fair crop; the dairy products will be much as usual, though, in some counties, the feed has been very close, owing to the dry weather—where corn has been sown broadcast this has been remedied."

ADVICE TO YOUNG FARMERS.—Allow me to say, to young farmers especially, let us be studious and inquisitive, as well as laborious; let us be simple and frugal in our habits; and avoid useless expenditures; leave fine dress, and fast horses, and showy dwellings to those who really need such things to recommend them. Let us ever remember that for health and substantial wealth, for rare opportunities, self-improvement, for long life and real independence, farming is the best business in the world.—*Goldwait.*

USE OF FAT IN THE ANIMAL ECONOMY.

The extraordinary abundance of fat in the bodies of animals inhabiting the intensely cold polar regions may be philosophically considered as a surplus stock of fuel, to be burnt for sustaining animal heat and motive power. Without this internal resource for a supply, during periods when no other available supplies of food are procurable from external sources, the animals of the arctic regions would speedily become frozen, remaining like marble statues fixed on the surfaces of the fields of ice and snow.

A most remarkably abundant provision of fatty and oily matter, formed from hydrogen and carbon, is found in the blubber which envelopes the bodies of stored up whales like a thick blanket. The philosophy of this surprising provision of available food and fuel, accumulated in these large fishes, admits of the following explanations. It appears that whales, in ranging from one feeding ground to another, sometimes have to cross broad oceans. Without an extraordinary supply of carbon, provided like a stock of coals in the bunkers of a steamer, for sustaining continuous combustion during a long voyage, the whales might fail in exerting a motive power sufficient to propel their great bodies through the waters of the broad ocean. Whales have been captured from whose bodies more than one hundred barrels of oil have been extracted. As spermaceti and cetine contain above 90 per cent of carbon and hydrogen, one of these fishes, therefore, carries *with him about ten tons of combustible fuel*, which is ready at all times to become absorbed and burnt, whenever this leviathan of the deep desires to develop powerful impulses of motive power, and rises to the surface of the ocean, to draw in a long breath of air, containing the requisite quantity of oxygen to burn this supply of carbon, and to allow it to recoil to its natural static condition of carbonic acid gas. The more a whale exerts his locomotive powers, the oftener it is necessary for him to breathe, or "blow," as the whalers term it.

Amid abundant granaries and well-stored market houses where there is little danger of falling short of a due supply of daily food, it is manifest that in the economy of nature there is no real necessity for this extraordinary supply of a surplus stock of carbonaceous fuel, enveloping the ribs of human beings.

The hump on the back of the camel—the locomotive engine of the wild deserts of Asia and Africa—may be deemed by the superficial observer as a deformity, or as a sort of natural saddle, ready prepared to bear the impositions of loads of merchandise, and as thus stamping this animal as a "beast of burthen," apparently by the original design of the Creator. But this uncouth appendage, so far from being designed expressely for the purpose of a saddle, does really subserve the more essential purpose of a knapsack of provisions, to supply from this superabundent deposit of fat, which principally composes this hump, the carbon necessary for propelling the locomotive mechanism of his body across wide wastes of sand, where no blade of grass is found to replenish his exhausted supplies of carbonaceous food. A surplus supply of water is similarly provided in the extraordinary sacs of his stomach, as a substitute for the tank appended to an artificial locomotive engine.

Adventurous mariners navigate their barks among the icebergs of the polar regions, to procure the valuable stores of fat organised into the bodies of the whale, of the seal, and walrus, which they transport to marts of commerce for distribution, for the purpose of being burned as fuel in the lamps, instead of in the lungs, the purpose for which it was originally designed. Men strip off the fur and down from the bodies of animals, whose breasts, exposed by submersion into icy water, and to keen wintry winds, require these non-conducting coverings, to sustain the animal heat generated by combustion in their bodies. These prized spoils of soft downs and furs are appropriated as a covering to

sustain the same genial excitation within the glowing bosom of a civilized belle. In the colder bosom of an Esquimaux belle, residing in a crystal palace, and beneath a dome built of blocks of ice, not only are these soft external appliances of robes of fur necessary for sustaining a genial glow of life's warm current, and also the most extraordinary combustion of fatty and oily matter in her lungs. One of these belles, according to Capt. Parry's narrative of his voyage to the arctic regions, sipped the oil from an extinguished lamp, and received a tallow candle as an acceptable bon-bon, the courteous captain kindly warning her by signs, not to choke herself by attempting to swallow the wick. It thus appears that the quantity of organic carbon which is scarcely adequate to serve as fuel in developing warmth and locomotive power in the bodies of human beings dwelling in the arctic regions would overheat the bodies of the same individuals in warm tropical climates, and would speedily induce fatal inflamatory disorders.

To the ignorance of this simple fact may be ascribed the deaths of myriads of voyagers from cold to warm climates. On the contrary, voyagers from sultry to cold climates, require the combustion of more carbon in their lungs to sustain the average temperature of blood heat. Indeed, the sensation of declining warmth is so immediately attendant on a diminished supply of food that the terms cold and hunger have became associated together, and the phrase starving with cold has lately been introduced into popular language in these countries.

Numerous facts tend to demonstrate that a vigorous and healthful condition of the animal mechanism can only be sustained by a due relative apportionment of the atoms of carbon and hydrogen, presented in the thin membranous air vessels of the lungs to the contact and union with due relative apportionment of the atoms of oxygen inhaled at every breath, and by the appliances of non-conducting clothing, to prevent the too rapid propagation of heat from the body. And thus the mechanical motive power of the vital agency of "life" truly subsists by the combustion of carbon, in accordance with the emblematical flame of the lamp, which was once lighted in every tomb by a classic and superstitious people, as allegorically representing the bright spirit which, for a brief time, animates the body and then vanishes for ever like the quivering and expiring flame.

Ripe Tomato Pickles.—Select handsome sized tomatoes, wash them and prick them with a fork; lay them in dry salt twenty-four hours; then soak in equal quantities of vinegar and water for 24 hours; then take them out and lay them down in a crock, with with sliced onions, with cinamon, cloves and brown sugar, and then cover the whole with good cider vinegar.

How Coffee came to be Used.—It is somewhat singular to trace the manner in which arose the use of the common beverage of coffee, without which few persons, in any half or wholly civilized country in the world, now make a breakfast. At the time Columbus discovered America, it had never been known or used. It only grew in Arabia and Upper Ethiopia. The discovery of its use as a beverage is ascribed to the superior of a monastery, in Arabia, who, desirous of preventing the monks from sleeping at their nocturnal services, made them drink the infusion of coffee upon the report of the shepherds, who observed that their flocks were more lively after browsing on the fruit of that plant.—Its reputation spread through the adjacent countries, and in about 200 years it had reached Paris. A single plant brought there in 1714, became the parent stock of all the French coffee plantations in the West Indies. The Dutch introduced it into Java and the East Indies, and the French and Spanish all over South America and the West Indies.

The extent of the consumption can now hardly be realized. The United States alone annually consume it at the cost on its landing of from fifteen to sixteen millions of dollars. That of tea is a little over eight millions of dollars. You may know the Arabian or Mocha, the best coffee by its small bean of a dark yellow color. The Java and East Indian, next in quality, are larger and of a paler yellow. The West Indian and Rio have a bluish or greenish-gray tint.

THE VITALITY OF SEEDS.

THE WHITE DAISY, CANADA THISTLE, ET ID OMNE GENUS

An intelligent correspondent of the Rural *New Yorker* makes the following observations on the above subject:—

Mr. D. Daniels, under the head of "How to kill the White Daisy," in the *Rural* of August 9, gives, doubtless an effectual remedy for the time being. But there are some facts in regard to the vitality of seeds,—of which, perhaps, he is not aware. The white ox-eye daisy, the common May weed, the little white daisy, the sorrel, and many other plants usually bear an immense quantity of perfect seed, and as nothing that I know of eats them, and they have no egret or wings to carry them off, they drop on the ground where they grow, but frequently not a vestige of the plant will be seen there the next year.

The fact is getting to be pretty well understood that many of the smaller seeds, which are encased in a hard shell, remain in the ground many, probably, often hundreds of years, without losing their vitality. Many instances have been cited in your paper, proving this, but I will cite one more. A neighbor of mine plowed a lowish piece of grass ground, and put in a spring crop. He was surprised to find one part of it covered with mustard and the other with turnips, having never seen either there before. On inquiry, he found that twenty years before one part was sown with spring wheat in which there was mustard seed and the other with turnips; very few of the latter of which came up.

Many seed, in order to vegetate, require some peculiar condition of the soil. For example, the button-wood tree requires its seed to be planted in deep subsoil, and will never vegetate in a common ploughed field. Consequently we see it mostly along the banks of streams, where trees have been torn up, and particularly along common highways, railroads, and canals. The common May-weed requires that the surface of the ground should be stirred as soon as it is thawed in the spring, and while it is frozen under. Thus we see it along the sides of our roads, where teams have turned aside to keep on the snow, and in the corners of fields where pigs or sheep have trod, at that particular season, and seldom anywhere else. *Were it not for this fact the weed would be a great nuisance.* The fireweed, as we most know, requires that the surface should be recently burnt over. The wood sorrel has doubtless spread its seeds over most of our cultivated lands. It requires more acid in its food than any of our field crops. Consequently you will see it flourish where plaster has been too frequently sown, and thus an excess of acid left in the soil, and particularly where swamp muck has been piled on dry ground to decompose and disengage its icid. This plant disappears before lime-ashes and other alkalies that neutralize the acid.

Most of our cultivated crops, including many noxions weeds, require a condition more or less general, but there are more plants than those above cited, that have their idiosyncracies. The ox-eye daisy is peculiar to worn out grass lands, and always soon disappears before high cultivation, and if the seeds have once been allowed to ripen and fall. I assure Mr. Daniels that he will never live long enough to see them exterminated from the soil, if he allows his land to run down and lie to grass. I do not make these remarks to discredit his recipe; it will doubtless kill all the roots, and, especially if he manures the ground, prevent for the present the vegetation of the weeds in the ground.

The difficulty in eradicating most of our noxious weeds, is that they require for their full development the same conditions of the soil as our cultivated plants. This is peculiarly true of the Canada thistle, while at the same time it has all the means known to plants for its propagation and extension; being parenial, produced by cuttings of the roots, the seeds have wings, live in the ground forever, and are eaten and spread by birds. It is a very hardy and tenacious plant, is a pugnacious enemy to human flesh, and on the whole, notwithstanding the apathy produced by its omnipresence, decidedly worse than all other noxious weeds we have, and cannot, during the present century, be exterminated generally, unless by the help of an unknown enemy to the plant, or by disease. It is only by a constant warfare that we can keep it under subjection, for while we subdue it in one place it is springing up in another.

H.

The same iron ore furnishes the sword, the plowshare, the pruning-hook, the needle, the graving tool, the spring of a watch, the chisel, the chain, the anchor, the compass, and the cannon-ball.

THE PLANTAIN.

Of all the vegetable productions of the tropics, none has obtained such celebrity, at least in the temperate regions, and of none have such marvelous stories been told, apparently upon very trustworthy authority, as of the plantain; and by reducing these marvelous stories to the standard of truth and fact, we shall enable all the proposed emigrants to judge of the probability of eating in the tropics without being obliged to work. The delusive statement so often repeated, as to the productiveness of the plantain seem to have originated with the illustrious Humbolt, who, as to this matter, suffered himself to be egregiously misled; but they owe their propagation and currency chiefly to the efforts of the British West Indian planters, who hoped to stave off the abolition of Slavery, by arguing—citing Humbolt to prove it—that one day's labour in a week, or even in a month, devoted to the cultivation of the plantain, would suffice to keep a family in food, so that, in addition to hunger, the stimulus of the lash would be needed to make the negroes work.

The plantain (*musa* of the botanists,) though often called a tree, is an annual plant sending up shoots from a mass of roots, or *stool* as it is technically called, which shoots attain a hight of from ten to twenty feet, giving off toward the top drooping leaves nearly two feet broad and ten feet long, of a delicate texture and beautiful light-green color. From the top proceeds a long spike, which bends over and droops toward the ground with the weight of the fruit it produces. This fruit, in size and shape someting like a good-sized cucumber, grows together in clusters of five or six, called *hands*, and arranged in succession along and around the spike. As soon as the fruit is matured the plant dies to make way for new shoots which spring up from the stool. There are two principal species, each with many varieties, cultivated in tropical America, one called by the English the *plantain*, the other the *banana*. The French, on the other hand, call the plantain the banana, and the banana the fig, and this confusion of names has given occasion to a confussion of ideas, from which Humbolt himself has not entirely escaped. The banana or fig is eaten only in a ripe state, commonly raw, and is no more a regular article of food than apples or pears are with us. The plantain is chiefly used as food after it has attained its full size, but before the starch, of which it is then chiefly composed, begins, by the process of ripening to be changed into sugar. In this unripe state it is eaten roasted and boiled, and is a nutritious and palatable food. Sometimes the boiled plantains are pounded into a tenacious mush—called *foo-foo* in the English colonies—and this, with a little soup or sauce to moisten it, is the favorite diet of the Creole women and children. Sometimes the plantain is cut into stripes and dried in the sun, after which it is pounded into flour, from which various messes are made. So much for the article itself, and now for its productiveness. Humbolt represents the produce of the plantain to the acre compared with potatoes as 1,060 to 24, which is 44 times as great; and compared with wheat it is 1,060 to 5, or 133 times as great; and, according to him, one acre of plantains will feed a family of 40 persons the year round. He makes it out in this way: He proposes to allow to each plaintain tree a space of 30 square feet, or about 1,500 to the acre, and to gather from each stool four bunches a year, and reckoning the bunches to weigh from 66 to 88 pounds each, he calculates on a crop of 175,000 pounds of nutriment annually.

The facts—as ascertained by several years careful observation in a country where plantains were largely cultivated, and with a soil and climate particularly favourable to their growth—are these:—Only three hundred stools are planted to an acre, and one bunch a year is as much as can be expected from a stool. The average weight of a bunch is thirty-five pounds. This gives 10,500 pounds weight of plantains, from which a fourth must be deducted for the weight of the stems and of the thick skin with which each plantain is covered. That would leave a little less than 8,000 pounds of nutritious matter. An acre of potatoes, at 300 bushels to the acre, will produce 18,000 pounds. The plantains, however, contain less water, and are more nutritious, weight for weight, than the potatoes. The weekly allowance under the English West-Indian Apprenticeship system was two bunches or seventy pounds of plantains to adults and half as much to children seven years and upward. This was said to be an ample allowance. At this rate an acre would feed three grown people.

To Keep Foxes from Killing Lambs.—A number of years since a neighbor told me that I if would put sulphur on the fence around a lot, foxes would not enter it. I thought perhaps that putting it on to the lamb as soon as found might be better, which I have practiced since, and have not lost a lamb by them, to my knowledge. Yet an old female might not fear sulphur any more that an old sinner does brimstone.

GOVERNMENT EXPERIMENTS WITH BOYDELL'S TRACTION-ENGINE.

An important series of experiments were commenced on Tuesday last by the Select Committee of the Board of Ordnance with the engine, to test its traction force as a substitute for artillery horses; and the results, so far as gone, greatly exceed our expectations —sanguine as they have ever been. The experiments of the 14th instant are two in number, and as follows:—

First. The engine, with a sufficiency of water for a good long yoking, weighing 9 tons, hauled a heavy seige gun (5 tons 12 cwt.), carriage and tender (2 tons 7 cwt.), and 16 men (say 1 ton and 2 cwt.); making a total of 18 tons including the engine itself, from the Arsenal up Barrage-road to Pulmstead Common, and down the steep incline to Waterman's-fields in return! The stepest part of the ascent is 1 in 10, and of the decent 1 in 8 or thereby, both inclinations having to be remeasured. Of the two, descending was considered by all present the master-part of this experiment, no break or drag being upon any of the wheels; those of the gun-carriage and tender (9 tons) being without endless rails; for in the very steepest part of the inclination our modern megatherium war-horse had as much control over his ponderous load as is to be seen in the parallel case of the steam-hammer, standing rock-fast, like a statute, the instant the order, "Stop her!" was given—a feat which even few of the admirers of this new-fangled inovation expected to see performed in so triumphant a manner. Moreover, in going up Barrage-road the wheels of the gun-carriage sunk from 1 to 3 inches in the shingle, of which the road was made—a circumstance which greatly added to the draught; nevertheless the war-horse dauntlessly took the ascent with that dignity of bearing and self-confidence which characterises the genius of steam when master of its work, and would soon have enabled the men to have planted the huge gun on the top of Shuter's-hill, had not Colonel Tullock ordered him down the steep descent to try his mettle there.

The second experiment was in hauling a gun of the same size over a marshy bog in the lower part of the Arsenal ground, a bog too soft to bear the feet of horses when pulling, or even when standing. The wheels of the gun-carriage in this case were furnished with rails, and the engine was yoked to the gun by means of a rope, capable (it was said) of sustaining a train of ten tons. This rope was broke by fair pulling several times, owing to abrupt inequalities in the ground which the wheels were run against, and not the best of engineering; but these eventually were both overcome, 2,040lbs. pressure of steam on both pistons, or 60lbs. to the square inch, dragging 18 tons triumphantly over the quagmire!—a result which all the artillery-horses in her Majesty's service could not have effected.

Such are the two first experiments made by Mr. Boydell before the Select Committee of the Board of Ordnance. That they solve the proposition of farm cartage, as well as that of artillery-traction, will readily be admitted by all who comprehend the simple elements of mechanical science; hence their importance at the present moment to her Majesty's Government, to the Royal Agricultural Society, the readers of the *Mark Lane Express*, and the public generally.

In these concluding observations we are only directing our reader's attention to first principles involved, and not to the details of mechanism; which, though greatly improved since the Willesden experiments, are still very defective; but the Woolwich experiments, with all these defects against them, place the propositions of the endless railway, their applicability to the wheels of portable engines for self-locomotion, and the application of the motor force to or gearing of the crank-shaft pinion in the top of the 96-toothed wheel, beyond the cavil of prejudice, and the book-rules of engineers, who have never crossed *pons assinorum*. With regard to the defects just alluded to, it is but justice to the firm of Boydell and Glasier to say, that they are being removed as fast as discovered. Rome was not built in one day; and therefore the inventor of the "endless railway" is justly entitled to the usual allowance of time to carry out his invention for the various uses to which it is adapted. This accorded to all great projects of so novel and comprehensive a kind as it is; and why should such be denied to him? The hasty conclusions at which unmechanical minds, so to speak, have arrived at, we can readily excuse; but no one can excuse himself who shuts his eyes to the experiments we have just brought before our readers.—*Mark Lane Express*. W. B.

To Make Tomato Wine.—Take small, ripe tomatoes, pick of the stems, put them into a basket or tub, wash clean, then mash well, and strain through a linen rag, (a bushel will make five gallons pure,) then add two and a half to three pounds of good brown sugar to each gallon; then put into a cask, and ferment and fine as for rasberry wine. If two gallons of water be added to each bushel of tomatoes, the wine will be as good.

FERTILIZERS FOR FRUIT TREES.

In relation to appropriate fertilizers for trees a diversity of opinion prevails. All agree that certain substances exist in plants and trees, and that these must be contained in the soil to produce growth, elaboration and perfection. To supply these, some advocate the use of what are termed "special manures," others ridicule the idea. I would suggest whether this is not a difference in language, rather than in principle; for in special fertilizers, the first make simply those which correspond with the constituents of the crop; but are not the second careful to select and apply manures which contain those elements? and do they not, in practice, affix the seal of their approbation to the theory which they oppose? Explode this doctrine, and do you not destroy the principle of manuring and the necessity of a rotation of crops? Trees exhaust the soil of certain ingredients, and, like animals, must have their appropriate food. All know how difficult it is to make a fruit tree flourish on the spot from which an old tree of the same species has been removed.

The great practical question now agitating the community is, how shall we ascertain what fertilizing elements are appropiate to a particular species of vegetation? To this two replies are rendered. Some say, analyze the crop; others, the soil. Each, I think, maintains a truth; and both together, nearly the whole truth. We need the analysis of the crop to teach us its ingredients, and that of the soil to ascertain whether it contains those ingredients; and if it does not, what fertilizer must be applied to supply them. Thus, by analysis, we learn that nearly a quarter part of the constituents of the pear, the grape, and the strawberry consists of potash. This abounds in new soils, and peculiarly adapts them to the production of these fruits, but having been extracted from soils long under cultivation, it is supplied by wood ashes or potash, the value of which has of late greatly increased in the estimation of cultivators.

Among the arts of modern cultivation, universal experience attests to the great advantage of "mulching" the soil around fruit trees, as a means of fertilisation and of preservation from drouth and heat, so common with us in mid-summer. In illustration of this, experiment has proved that on dry soils, where the earth has been strewn with straw, the crops have been as large without manure as with it, where evaporation has disengaged the fertilizing elements of the soil.—MARSHALL P. WILDER, *in Patent Office Report.*

THE WRAPPINGS OF THE MUMMIES.—A newspaper came to us yesterday from Syracuse, New York, made from rags imported directly from Egypt, and which had once wrapped within their folds the mummified remains of the descendants of Mizraim. They were imported by Mr. G. W. Ryan, paper manufacturer at Marcellus Falls, and he thinks them quite as good as the general run of English rags. The paper is certainly of very good quality; rather superior to that generally used in this country for newspaper purposes. What it costs, the publisher does not say, but as there are thousands of bodies in Egypt, wrapped up in linen folds, it is quite probable that the rags are cheaply imported as those from any other country.—*Philadelphia Sun.*

SAVE SEEDS OF PERFECT FRUIT.—During the present month many kinds of vegetables will be ripening. Those who wish to perpetuate an early and fine variety, should select the first that ripens which is perfect, and save it for seed. Save such as are the least likely to be impregnated with an inferior sort by the action of bees or other insects. Proper care in this will insure an early supply of vegetables of a superior quality. Seeds when saved, should be kept in a cool dry place, properly labelled as to sorts.—*Mich. Fair.*

STEAM PLOWING.—J. Percy, of Albany, has constructed a carriage, to which ploughs may be attatched, and which he feels confident will enable him, by steam power, to overcome the difficulties which have heretofore prevented the practical working of steam for this purpose. His plan seems feasible, but trial alone will demonstrate whether it can, successfully and cheaply, be applied to practical use on the farm.—*Journal N. Y. Ag. Society.*

The state of agriculture in all countries depends as much on climate and on quality of soil as on the industry of the inhabitants. From the immense extent of the Russian empire, an extreme diversity of climate exists, which necessarily causes a great difference in agricultural processes. According to M. Meyendorff, the culture of wheat stops at the 58th degree of latitude; of oats, at the 63rd; of rye, at the 65th; and of barley, at the 67th degree. The birch does not flourish beyond the 69th; the pine and the larch beyond the 68th; the fir is arrested at the 67th; and the alder at the 63rd degree.

SUCCESSFUL CULTURE OF THE RASPBERRY.

We copy the following interesting account of a successful experiment in the culture of the raspberry, as illustrating the advantages of good treatment, and especially of mulching, and also showing that the same care which produces a heavy crop of good corn, will also give a fine crop of delicious fruit:

Happening to go into the market stand of Messrs. Hawley, Smith & Carman the other morning, we were so much pleased with a lot of Antwerp Raspberries, and of what we heard of the plot they came from, that we struck a "bee line" for South Norwalk, Conn., to hunt up the grower, Mr. Samuel Seymour, a young farmer some twenty-two or twenty-three years old, and who is yet upon the old homestead. (*We mention this fact* for the benefit of other young men.)

We found the 'raspberry patch' to consist of just 100 square rods, (not 100 rods square,) or five-eighths of an acre. The ground was uniformly covered with plants all just up to our eyes, (we stand five feet ten in low heeled boots, and we could not find a fruitless hill upon the whole. As a matter of information to the novice in raspberry growing, and its profits, we proceed to give the history of this plot.

The soil was a very stony one on a side hill. Without estimating the countless loads of stone removed in time past, one hundred cart loads were taken off it to prepare it for the raspberries. This was in the fall of 1852. Twelve cart loads of manure were then worked into the surface. The manure consisted of barn-yard manure composted or rotted with swamp muck.

November, 1852, the plants were set out, four in the hill, and the hills four feet apart each way. The canes or stalks when transplanted, were about three feet in height. They were immediately bent down and covered one to two inches of soil. In the spring they were uncovered "just before the peach trees were in full blossom." The canes were then raised up and tied to small stakes set in the centre of each hill. They were afterwards cultivated "just like corn," the cultivator and hoe being used to keep the weeds down, and the ground loose and level. The plot yielding 440 pint baskets of fruit the first season, (1853) When the bearing season was over the old canes were cut off close to the ground, and the stakes taken up. In the fall, before the ground froze, the young plants were bent down and covered.

In the Spring of 1854 the same course was pursued, as during the previous year. The season was a bad one and only 226 baskets were picked for market. In the fall, cutting down old wood and covering the young plants, were again resorted to.

In the Spring of last year, (1855) in addition to the previous cultivation, a coating or mulching of three loads of salt hay was spread over the surface. This kept down weeds and saved nearly all the trouble of hoeing, and kept the ground moist, besides preventing any soiling of the fruit during rain. The crop for 1855 amounted to 5,026 pint baskets, which sold for $360. Considerable quantities were also consumed at home, and distributed among friends. The same seasen young plants were sold amounting to $176.50. The 100 square rods thus produced in 1855 $536.50, or at the rate of $858.40 per acre. The entire expenses of culture, picking, marketing, interest of land and capital invested, &c., $411,50, or $658.40 per acre.

Last fall the usual cutting and covering were again pursued. The mulching was aided in at the time of burying, and formed part of the covering.

In the Spring of this year (1856) the ground received a new mulch of salt hay, and to this date very few weeds have grown through it. Straw, bog hay, saw dust, spent tan, &c., will answer as well as the salt hay, which was used in this case because more conveniently procured. We cannot estimate the amount of the crop the present season, as the gathering is still going on. To this date (July 24) 4,600 baskets have been sold. The plants are now suffering for the want of rain. Since the old plants are cut down every year, and new ones take their places, there is no reason why such a plot should not continue in good bearing for any length of time. The picking is done by boys at one cent a quart, at which price they make from 40 to 62½ cents per day.

As stated above, these are the *pure* Antwerp variety. The fruit is not quite so large and "juicy" as the Fastolf, but it is much firmer, and thus bears marketing better where they are to be carried far. For *home* use we give the preference to the Fostolf. Mr. Seymour sends them to market in pint baskets and quart boxes. We have seen tin cans used the present season, but the berries do not keep as well in these as in open baskets. Berries in baskets sell a little higher and more readily than when in wooden boxes.—*Am. Agriculturist.*

RULES FOR PLOUGHING MATCHES.

To the Editor of the Agriculturist.

Thorah, 8th August, 1856.

Dear Sir,—Some young men in this Township, who are anxious to have a ploughing match on my farm, have applied to me for the rules of competition usually adopted—observing that you take an interest in such matters, I take the liberty of requesting the favor of your assistance in stating them in such way as may be a guide in future competitions—impressed with a conviction that such trials of skill are conducive to improvement in agriculture, I feel anxious to promote their views, and will feel much obliged if time permits, by hearing from you.

I remain, Dear Sir,
Your obedient servant,
Kenneth Cameron.

I have got a Bingham plough which is of decidedly lighter draught than any other that I have seen work, but have no means of ascertaining how many degress.

K. C.

Millbank Farm, Yonge Street, August 18, 1856.

Dear Sir,—Your note, asking for the rules of competition usually adopted at ploughing matches, was received during my temporary absence, or it would have had an earlier reply.

I am not aware that there are any well defined and generally recognized rules, applicable to these matches as ordinarily conducted. Where the object is to test the skill of the ploughmen—implements being left out of question, except so far as their merits may be inferred from the work done—the standard of excellence is simply the arbitrary opinion of the three or five persons who may be appointed to award the prizes. There are some conditions, however, generally deemed essential. 1st. A straight furrow slice. 2nd. Uniformity of width, and of depth. 3rd. As a result of the foregoing, a complete parallelism of all the furrow-slices. 4th. The slices compacted so as to hide, or cover grass &c. 5th. A similiar form of crest and equal exposure of surface. 6th. The crown or the ridge neither too much elevated nor depressed. 7th. The open furrow neatly ploughed out, the last furrow-slices being laid at the same angle as the rest.

The above may be termed general conditions, or criteria of good ploughing, whatever be the *size* of the furrow-slices, or the *cut* or form that may be adopted. The latter points having been agreed upon by the judges, and made known to the competitors, he who fulfils in the highest degree the above conditions, should be pronounced the best ploughman. The ridges or lands are usually marked out and numbered, and assigned to the ploughmen by lot. The judges are sometimes chosen by the ploughmen, which is perhaps the most satisfactory mode.

Other points will readily occur to your mind—as indeed will those I have suggested. One reason, I presume why our Agricultural Societies, Clubs &c., have never agreed on specific rules for ploughing matches, is the great diversity of ploughs—no single kind or form, being adapted to all soils, or universally approved or used. The Scotch Iron Plough is perhaps the most popular with good ploughmen, and is generally used at ploughing matches in this part of the country. Those I have noticed are all of the Wilkie or Lanarkshire pattern, which make the high-crested furrow-slice, so much admired by Scotch ploughmen of the old school. Mr. Stephens, I think, has conclusively shown (see his *Farmer's Guide* (Am. Ed.) vol. 1, page 161) that this form of furrow is defective, and the popular notion that it gives more soil to cover seed than the rectangular furrow, is an error. Moreover, it gives a shallower seed-bed, for it leaves a portion of each slice attached to the subsoil. The

point is an interesting one, and lest you should not have Mr. Stephen's work at hand, I will publish his remarks upon it in the next issue of the *Agriculturist*.

You will find in the number for June the Report of a trial to test the draught of several ploughs, including that of Mr. Bingham. The figures are sufficiently accurate for all practical purposes, and merely *prove* what before was evident to any intelligent ploughman, or mechanic viz., that a plough, the mould-board and land-side of which presents a very acute angle—a sharp wedge to the resisting soil, will require less power to move it than one presenting a more obtuse angle,—a blunter wedge to the same resistance. But in the attempt to avoid heavy draught a more serious defect is apt to be encountered. The mould-board will not sufficiently *press* the furrow-slice together to prevent grass and weeds from springing up. Let me observe, however, that a plough which will suit equally well all soils and circumstances is a desideratum not likely to be obtained. As many as three of different size and shape can be used to advantage on almost every farm. Including the Michigan Double, or subsoil plough, I use four, the last being, in my opinion, the most valuable.

Hoping that your efforts to improve the agriculture of your township may more abundant success, I am Sir, with much respect,

Yours &c.,

Colonel Kenneth Cameron, Thorah. WM. McDOUGALL.

[Finding that it would be necessary to copy two or three cuts which Mr. Stephenson uses to illustrate his views, we have been obliged to defer copying the extract above alluded to till next month.—ED.]

ANOTHER HEDGE PLANT.

To the Editor of the Agriculturist.

Westwood, July 31, 1856.

SIR,—Of all the trees and shrubs hitherto proposed as a substitute for timber fences in Canada, there have been none as yet submitted, to which some grave suggestions do not belong, and the addition I have to make to the catalogue will probably only add to the list. The subject, however, is worth being kept before the farming public until some worthy substitute has been arrived at, were it only for the sake of appearance, nothing being more ugly or disfiguring than the (hitherto necessary) wooden fences of the country.

It is clearly an indispensable qualification for a live fence plant for Canada at present, that it should take care of itself, and answer the purpose for which it is intended without further expense or labour than may be comprised in a year or two's hoeing, during its infancy. As a plant uniting these qualifications, I beg leave to recommend the Sweet Briar to your favourable notice.

The plant is so well known that any description would be absurd. I may, however, give as a reason for believing it would answer the end in view, that I have remarked it growing in commons and waste places for the last 15 or 20 years, that at 10 years of age it forms a bush six feet high, as thick as a fagot, and one foot in diameter at bottom, spreading to 4 feet at the top (even under these disadvantages); that nothing certainly could get through; and strong enough apparently to resist the heaviest cattle. Should it, however, be found wanting on this point (the only one to which it might be liable), the want might be effectually supplied by crotchets driven in till about three feet from the ground, and poles laid on them, after the fashion of the ox-fence in England.

As the bush sends up fresh suckers every year from the root to the height of 6 or 7 feet, which, though ceasing to grow any higher, interlace each other, no pruning would be required, whilst from its mode of growth each year can but add to its strength and compactness, the same reason would also seem to argue that, if not immortal, it is very long lived. At any rate I have no doubt it would last until sufficient time and means were at the disposal of the inhabitants of the country to pay sufficient attention to the larger-growing live fence plants.

I remain, Sir, your ob't serv't,

JOHN H. JONES.

REMARKS.—By the expression "one foot in diameter at bottom" Mr. Jones must mean the space occupied by all the canes or shoots from one root. The diameter of the largest sweet-briar cane we ever remember to have seen, does not exceed one inch. This bush grows near the window at which we write, and on the site of an old chip-yard. It has often occurred to us that it would make an excellent *thickener* for a hedge of larger plants, but we doubt that it could of itself, be made of sufficient strength to resist unruly cattle, especialiy those trained to hunt among briars, &c., for their daily food, as is the case with a large proportion of the cattle of this country.

Judging from the size the sweet-briar attains in fence corners and near stumps or roots, we should suppose it would require a rich soil, and considerable cultivation to become formidable.

QUICKSAND—ANOTHER REMEDY.

To the Editor of the Agriculturist.

SIR,—I seldom write for a public paper, but being a reader and subscriber of the *Agriculturist*, I take the liberty of addressing a few lines to you, as I observe in your excellent paper for the present month, one of your correspondents has had much trouble with quicksand in his well. He thinks there must be some means of preventing the sand washing through the bricks or stone, and I believe there is. An acquaintance of mine has had a good deal of experience with wells for several years, and he states, that to get a good supply of moss from a swamp, and by sinking a wooden curb as deep as it can be, and as soon as he begins to build with brick or stone fill up the cavities behind with moss, and it will prevent the sand coming through. The same individual fixed a well, I think same time last year, in the manner I have described, for Jas. Monkman, Esq., of this township, which answers a very good purpose.

You can make what use of this communication you may think proper. Wishing you prosperity in your undertaking, I am, &c., respectfully,

Albion, Aug. 18th, 1856. WM. ROADHOUSE.

TO PREVENT BUCKS FROM FIGHTING.—A correspondent of *Country Gentleman* says:—Formerly I annually lost several valuable bucks by fighting; some killed immediately by their necks being broken, and others would become fly-blown, or poisoned by rubbing against stumps which were overgrown with poison vines, and to prevent a lingering death I was compelled to examine them often and use quite an amount of oil of spike and turpentine. I now cut pieces of harness leather, and cut two holes in the upper side of each piece, and tie to each horn, which will effectually prevent them from fighting; for they cannot see each other in front but can only see each other when by their side. The expense is trifling, and will save the lives of many animals, and allow the owner to rest contented that his bucks will not harm each other. I feel induced to make this known, not only to lend a hand in the hour of trouble, but to serve as an answer to the many letters of inquiry, written to me in regard to the above trouble.

LENGTH OF RAILS—ENQUIRY.

To the Editor of the Agriculturist.

Sir,—In looking over the July number of your paper I find a communication on fences, in which the writer expresses his surprise that the western part of the country is so deficient in fences; and then goes on to describe a kind of fence in vogue in Renfrew and Lanark, which he says is the best and cheapest. He goes on to say, that it is made of a ground block, and pickets and rails. He informs us that it will only take 138 rails to the acre. Now I would wish to remark that it is very desirable you should procure more information from Mr. Robertson as to what length of rail he uses. According to my calculation and allowing the rails to be 11 feet long, which is the length generally in use here, it would take about 450 rails to fence a square acre, and so in proportion for a larger field. I am, yours truly,

Biddulph, July 30th, 1856. J. J. G.

Remarks.—Mr. Robertson probably meant one side of a square acre, or the 10th part of the fence required to enclose a ten-acre field. If the latter, and we assume it to be of the usual shape, viz., 40 rods by 20 rods, then "one acre," or 1 10th of the enclosing fence would be 12 rods or 198 feet. This would take about 18 panels or lengths of 11 ft., and 6 rails to the panel, would give 108 rails. 6 long rails or riders would be required according to Mr. R.'s plan, making in all 114. This is less, by 24 rails, than the number stated in Mr. R.'s communication. Perhaps he allowed the 24 rails for pickets—but we leave the matter for Mr. Robertson to explain. It is desirable in such calculations to state explicitly all the elements of the question, so that the reader may not be left in doubt.

APPLE TREES AND INSECTS—ENQUIRY.

To the Editor of the Agriculturist.

County of Grey, August 27th, 1856.

Sir,—Being a reader of the *Agriculturist* nearly since its existence, I have been much pleased with the information I have derived from its pages, about things in general. However, I would wish to get a little more about Horticulture than I have lately received. Having a small orchard and nursery of apple and other trees, some newly grafted, others more advanced, and others as far as fruit-bearing; the whole of the trees are pretty well taken care of, being hoed now and then to keep down weeds; but the trees do not flourish, for under the leaves and the most of this years' wood, the greater part of the apple trees are covered with small green insects about the size of clover seed, and have been so during the most of the summer. Now the insects are beginning to die, and the leaves and branches look very black, and the top of some of the trees are dying. Numbers of ants are very busy running to and fro amongst the branches. Now, Mr. Editor, if you or any of our Horticulturists know what caused the above-mentioned insects, or what will destroy them, or both, I would feel very happy to be informed of the same, through your valuable paper.

I am, yours, &c.,

A Subscriber.

Influence of Soil on Timber.—It is quite certain that the nature of the soil exerts a considerable influence on the rapidity of growth and quality of timber. The oak, the walnut, the poplar, &c., which have been grown on a damp soil, will not be so hard and compact as the same trees reared on a dry plat. Their white or sap wood is thicker in comparison with their hard wood; and their pores being larger, and open, and the whole wood being without that kind of varnish which impregnates good timber, they are readily permeable, and unfit for the manufacture of vats, &c., to say nothing of their being much more perishable.

THE "WEEVIL"—LIGHT WANTED.

To the Editor of the Agriculturist.

Westminster, Aug. 8, 1856.

DEAR SIR,—Can you give a young beginner any light respecting the sowing of wheat, seeing that the "weevil" has paid a visit this season to our wheat crops in Middlesex. From what I have seen in other places, it is utterly useless so sow the wheat they have once attacked, so long as the "weevil" remains around. My object in troubling you is to try and find out if there is any kind the "weevil" will not attack, and where it can be procured, and at what price. If none, what other crops would you suggest as paying crops in the stead of wheat?

By answering the above you will confer a favour on a young beginner, J. C.

REMARKS.—J. C. will find his enquiries answered, to some extent, in our last issue. He is probably mistaken in the name of the insect, which we regret to hear has advanced already so far west as the county of Middlesex. It is the *midge*, and not the *weevil*. The only advice we can give a "beginner," with our present knowledge of the subject, is: 1st, To prepare his land *well*. 2nd, Sow early;—for this neighbourhood, we should say not later than the second week of September. 3rd, Select early and hardy varieties of wheat, such as the *Improved White-Flint*; *Kentucky White-bearded*, or as it is commonly called, *Hutchinson's*;—*Blue stem*; *Soule's*, and *Hume's White Wheat*. There may be other kinds equally valuable, but the above are the earliest, hardiest, most prolific and produce the best flour of any with which we are acquainted. Ploughing wheat stubble in the fall has been recommended, with much show of reason in its favour, but it is evident that the practice must become general before much good can be expected from it. One large field left unploughed would furnish flies enough in the spring to spread the mischief over a whole neighborhood, or settlement.

There is no variety of wheat entirely exempt from the attacks of insects. The *Mediterranean* is said to be less liable to their attacks than any other, but it is a coarse, red-bearded wheat, and makes inferior flour. It is an early kind, but the grain is as dark as rye, and seldom plump. It is not grown in Upper Canada to any great extent.

As to recommending other crops in the place of wheat we should require to know the character of the soil, and other local facts before venturing to give advice. We believe most farmers grow too much wheat. It is the common error in this part of the country, and is no doubt one cause, and probably a chief cause of the rapid increase of insect depradation. Sometimes wheat follows wheat on the same soil; frequently it follows oats; often pease. The land is badly tilled, not half, if at all, manured; its strength is thus exhausted, and the wheat plant, robbed of its proper support, languishes, and if it does not *die* outright, becomes a prey to insects from its root to the topmost kernel of the ear.

GADFLIES.—The gadfly not only persecutes by its bites, during summer healthy oxen, but also deposits its eggs in their skin, which give rise to tumors on the back and other parts, in which the larvæ become developed; they live there on the succulent fluid which the soft parts secrete, and make their escape thence in the following spring, in order to become metamorphosed. The greater the number of tumors the more is the strength of the animal diminished by the pain and supperation. For this reason we should endeavor to free the animal as soon as possible from these larvæ pests by frequently washing these tumors with camphorated brandy, or forcibly compressingthem, which either crushes the insect or forces it to make its exit. When they have attained the size of a filbert, an incision must be made into the part, which is then to be covered with a pitch plaster. A few doses of sulphur are to be given internally. We are told that these oxen which have taken sulphur for a long period of time are not infested by gadflies.—*Gunther.*

WHEAT FLY—FIFE WHEAT—GAYLORD'S ESSAY, &c.

To the Editor of the Agriculturist.

Hamilton Gardens, August 20th, 1856.

Dear Sir,—I was much pleased to see that you had devoted the leading article in the last number of your interesting paper, to the subject of the Wheat Fly or Midge (*Cecidomyia Tritica*); and I am sure that a subject of more importance, at the present period of our Agricultural history does not exist; inasmuch as the question of whether we can grow wheat or not for some time to come, almost hinges upon it. We know that in Canada East, in many of the New England States, and also in many parts of New York State, wheat growing has almost been abandoned in consequence of it. I have been induced to trouble you with this kind of rambling paper, from your invitation to farmers, to give their experience on the subject, as far as their observations extend; and there is no way in which truths or facts can be arrived at more surely than in this way. I am pleased to see also, that the Minister of Agriculture has taken your hint, and is now offering premiums for the best essay on the subject, for which movement in the right way, he is entitled to the best thanks of the farming community.

It is now the fourth season since the *Cecidomyia Tritica* made its appearance in our neighbourhood. The first two years its ravages were very partial, and the damages trifling, being confined to the late fall wheat and the early spring. The third (that is last season,) the damages in many places here were very great. In my own, of which I wish to speak more particularly, the fall wheat was much more injured than before, and a field of spring wheat, sown about the 10th of May, was destroyed by it to the full amount of 75 per cent.: while a field adjoining, sown ten days later, was nearly free from it altogether. I had frequently read in the papers, that where the Weevil had prevailed, it had been overcome partially by late sowing; but then (that is some years ago) the cure to me seemed as bad as the disease, because I knew that in the neighbourhood, the only way to prevent the rust, was to sow as early as the seed could be got in, (I am now speaking of spring wheat) and if we had nothing but the old varieties, such as Tiberian, Club, Tea Wheat or Black Sea to sow late, would be avoiding Scylla to run on Charybdis; but now I rejoice to state, that we have got a variety that can be sown at any time as late as the middle of June, which will mature and ripen without rust; this is the Fife, or as it is sometimes called Scotch wheat.

My crop this season was sown on the 22nd and 23rd of May, and is now nearly ripe, and is as fine a crop as can be desired, not heavy, in consequence of the dry season, but promises 25 or 30 bushels per acre; it is as full as it can be, and I have not seen a trace of Weevel in it yet, I have no spring wheat sown earlier this year, but in chance heads which have come up in a pea field, sown ten days earlier; I perceive the wheat is altogether destroyed. Now to show you how little we can speak generally on Agricultural subjects, this wheat which has done so well on certain soils, is almost valueless on this; while it does so well on such soils as lay on the Lake Shore from Port Hope to Grafton in Haldimand, when sown on sandy loams with a porous subsoil, the Bald Club beats it altogether.

Now sir, instead of a farmer being according to the ideas of the old school, an uneducated clod-hopper, depending altogether for his practice upon the tradition of his forefathers, there is no profession where a more general knowledge is required; he should not only be instructed in all the manuel operations of his business, but also in Chemistry, Geology, and all the ologies extant. I am no professor of Geology, but I have read books on that science, and if I cannot describe technically, the varied rocks, soils, and other formations of our country, I can form my own ideas of them from what I have read; and I wish to describe the nature of the soil on which this Fife wheat flourishes. The country before mentioned between Port Hope and Grafton, lays as follows; west of Port Hope the land is many feet above the Lake level, varying from 25 to 150 feet; (which I believe is about the height of what is called the Highlands in the Township of Scarboro') this obtains most of the way from Port Hope to Toronto, but east of Port Hope, the land is only a few feet above the lake level, not exceeding ten in the highest part, Some two or three miles back from the lake, the country begins to rise into broken hills, varying from 50 to 200 or 300 feet in height; from the foot of those hills the country slopes gradually to the lake, sufficiently in most places to carry off the water. This plain as I may call it, is crossed every half mile by streams of water, (rising in the hills before

m ntioned) varying from a small stream to a little rill, which only runs in wet weather; these of course, partially drain the soil, and also form outlets for artificial drains where required. This is the surface, the foundation is limestone. I believe of the oldest formation, being mostly devoid of organic remains. Above the limestone the formation is gravelly clay, mixed with stones of all kinds, from the gigantic boulder to the smallest pebble. On the top of this there is from 2 to 4 or 5 feet of brown clay, such as the red bricks are made from. The surface is composed of vegetable matter, sandy loam, and black soil, according to the *lay* of the soil. If high the sandy loam prevails, if low the black.

Now sir, Fall wheat is so uncertain on this tract of country, that before the introduction of Spring wheat, its cultivation was almost abandoned; and I remember the time, when on a farm of 100 acres clearance, we would not risk more than 10 acres in Fall wheat; enough to supply the house with bread. The Siberian Spring wheat, was the first variety introduced among us, somewhere about twenty years ago, and it produced quite a revolution in the farming operations; instead of growing 10 or 12 acres on a farm of 100 acres, 50 or 60 and sometimes more were grown, and farmers, who had been in the habit of selling 100 bushels of wheat in a year, now many of them sell 1000. The Siberian continued to do pretty well for six or seven years, and then totally failed. You may travel 100 miles now, and not see an acre of it; so mysterious are the operations of Nature. This variety was succeeded by the Club; there are by the by two varieties under that name, the bald, and the bearded. The bearded originated in one of the Western States, I believe, and was then called Hedge Wheat; it has a short stumpy head with very long strong beards, a very dark red berry, not liked any better by the millers than the Fife; the fact is, it possesses in its composition more gluten than starch, compared with fall wheat; and what the millers like, are those wheats which are composed of starch more than gluten, they grind so much nicer. All these varieties of spring wheat before mentioned, have now run out, on the tract of country before described; but the Fife, the glorious Fife, I call it, is now as good after being grown 7 years as it was at first, without the least sign or vestige of failure in any shape except from Weevil; and to know that you can be sure of a crop of wheat sown as late as the 10th of June, and to fill and ripen without a speck of rust, and yield 20 to 30 bushels an acre, is surely a desideratum. Why sir, ten years ago, it would have been considered incredible.

I don't know whether you ever heard how this variety of wheat originated, if you have, there is no harm in telling the story again. I speak from memory. It is now seven or eight years since I heard it told, but it is something like this. A farmer in Otonabee Township by the name of Fife, a Scotchman, had a small parcel of wheat sent him from home by a friend. It was I believe a spring variety, and obtained from one of the Baltic ports on the Baltic. Mr. Fife sowed the wheat in his garden, and it all with the exception of one single plant, rusted so much as to be absolutely worthless. This single plant forming such a contrast with the rest, being as bright as gold and entirely free from rust, induced Mr. Fife to save it. He sowed the produce of it the following spring, and after it had almost got to maturity, some cattle broke into his garden, and destroyed it except a few heads. Those Mr. Fife sowed again, and when the Show of the Agricultural Association was first held in Cobourg, eight years ago, he had several bushels on hand. I recollect this statement being laid before a Committee of the Agricultural Society at that time, but I believe no action was taken upon it; but the Agricultural Society for the Township of Otonabee took it up, bought the seed and distributed it amongst its members. I may have mis-stated the matter in some particulars, but however that is the substance of it, and I have thought that the name of such a person, should in some way be held up before society to be honoured.

Well say you, but what has this to do with the (*Cecidomyia Tritici?*) Much I say. When you have got a kind of wheat, that you can sow at any time before the middle of June. and have it mature without rusting, and when you have ascertained that this same insect can only do its mischief for about six or seven days, and that is when the wheat is just shooting out, and when your early Fall wheat is out of the way; as I believe you are correct in your remarks in the *Agriculturist*, but you speak for fall wheat only. Then I say sow your fall wheat early, and your spring late. This is the result of two years experience with me. I was partly convinced last year, but now I speak confidently, from what I now observe. My idea is, there is no remedy in the shape of nostrums, and if there were, the application would be next to impracticable. Lime has been recommended, sown when the insect was first discerned, but the difficulty of sowing it, when

the wheat is in that stage of growth, is next to impossible, and then I much doubt its efficacy.

The most valuable article I have read on Entomology, or that part of it which most interests the farmer, is found in the transactions of the New York State Agricultural Society, for 1843. The essay, for which a prize was awarded, was written by the late Willis Gaylord, then one of the editors of the *Albany Cultivator;* you no doubt have seen it, if not you will find it in that volume. Much more experience has resulted since this essay was written, thirteen years ago, but the misfortune is, that the farmers have such vague ideas about things of this sort, that their observations are of very little value.

The following observations from Mr. Gaylord, is much to the point:—"The man who shall furnish the farmers of the United States, with a full account of the different insects that prey upon our wheat crop; its roots, stems, leaves and seeds, will render the Agriculture of this country a service, entitling him to more gratitude, and securing him a more certain claim to a long and honorable remembrances, than could be acquired by the most brilliant diplomatic, or literary labors. The thoroughly educated entomologist can alone do this, and it is a work requiring years for its successful execution. The farmer finds his wheat crop cut off year after year, and he knows the injury that is done by an insect; but his knowledge of insects, their habits and transformations, is too limited to enable him to observe and describe correctly, and it is not to be expected it should be otherwise. The labour must be performed by the professed entomologist, aided in his observations by the farmer, or it will never be done at all; and when it is remembered how essential such a thorough examination of the insects that prey on our field crops, those of grain in particular, is the agricultural prosperity of our country, it is to be hoped the investigation will not be much longer delayed. Until such full accounts and descriptions are given, the most that can be done is to collect such facts as shall best enable the farmer to know his enemies, and avoid or destroy them."

I perfectly agree with Mr. Gaylord that the farmer can do little without the entomologist, but then the farmer should do a *little*. He should inform his mind by reading works on Entomology, just to get a smattering of the science; he should also provide himself with a small magnifier, by which to observe the actions of those insects which trouble him; keep datas when they are at work, and describe all he observes; then furnish the results to the entomologist, If one tithe of our farmers would only do that *little*, the aggregate of the information so procured, would be of not only immense advantage to the man of science, but it would also throw a great amount of light on the subject generally; so that the farmer would have a much better chance of plodding along alone, than without it.

And now, dear sir, I think I have been sufficiently prolix for one subject; it is but little light after all I have been able to throw upon the matter, but one of the main objects in writing this long rambling article was, to set an example, and draw out as many of my brother agriculturists ss possible.

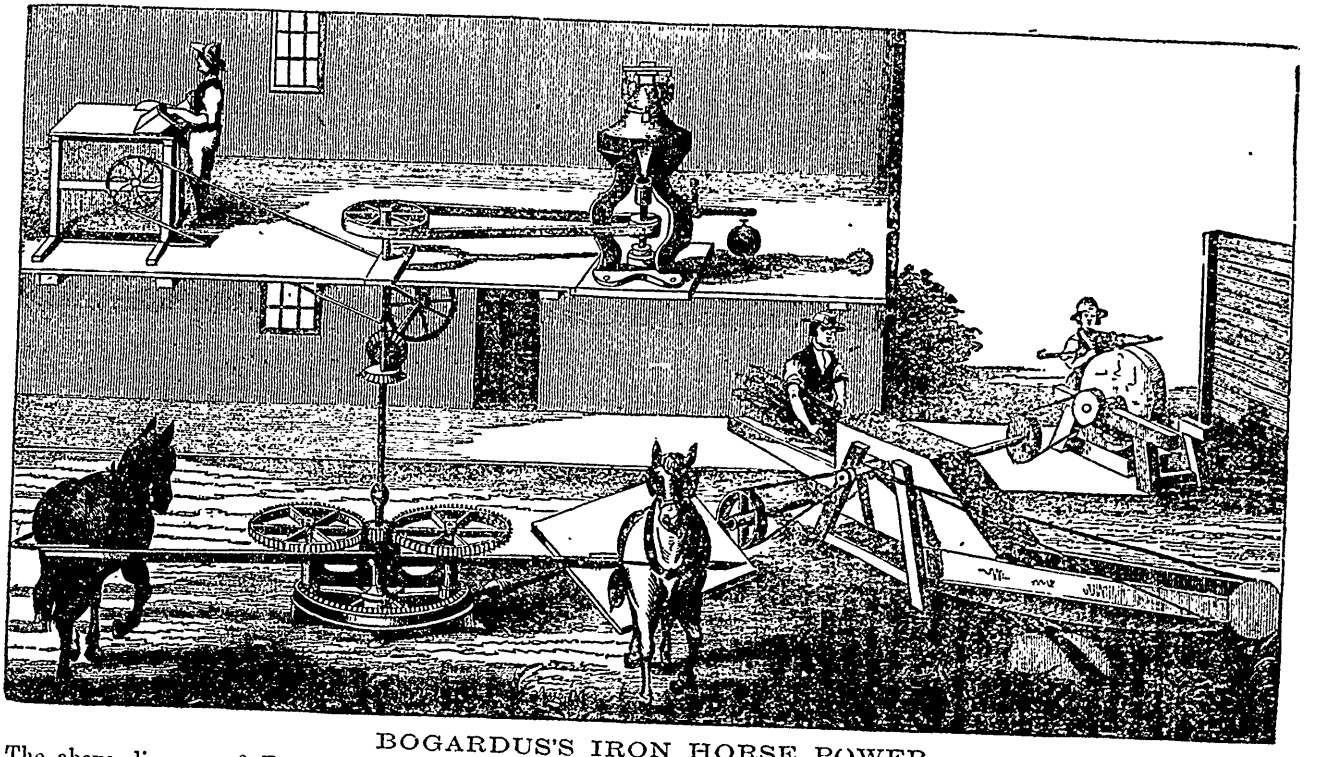
I am, dear sir, yours, &c.

JOHN WADE.

FEEDING SWEDISH TURNIPS TO MILCH COWS.—The feeding of turnips to cows in winter, when pasturage is gone, has a tendency to add largely to the flow of milk. The use of them is disliked however, by dairymen, on account of the strong and disagreeable turnipy flavor they impart, both to the milk and butter. A remedy for the evil was discovered some years since by Rev. A. Huxtable, of England. This remedy is important, and as many of our readers may have never seen it in print, we insert the receipe which is as follows:—"Dissolve half an ounce of chloride of lime in one gallon of water, and add a tablespoonful of this to each gallon of milk. Frequently, if the turnips are very strong, three times as much will be required; but this will depend upon the dairywoman's taste."

SALT.—Mr. John Ellis, an intelligent practical farmer in England, made the following experiment with salt, as manure for wheat:—

"On one-fourth of an acre of a wheat field he sowed in March 50 lbs. of salt; and on an adjoining one-fourth of an acre of the same kind of land, and similar treatment, he obtained less wheat than that grown on the salted portion by 1½ bushels, consequently showing an increase per acre by salting, by about six bushels per acre." He now uses salt regularly, from 2½ to 4 cwt. per acre. He considers it however, least beneficial on heavy clay lands.



BOGARDUS'S IRON HORSE POWER.

The above diagram of Bogardus's Iron Horse Power illustrates the working of it as adapted to the various kinds of Machinery. This power can be worked either with one or four horses, is compact, strong and portable, and is used in the field or under cover with equal facility.

THE CROPS IN ENGLAND, &c.

We have been favored by the Hon. Adam Fergusson with the reading of a private letter, dated the end of July, from an old and distinguished agriculturist in the north of England, from which the following is an extract. Later accounts represent the weather throughout the British islands as exceedingly fine, and the crops were fast coming to maturity. In Scotland and Ireland, the crops generally are reported above an average. In a letter just received from the south of England, dated August 14th, the wheat harvest is said to have commenced auspiciously. The hop crop will again be large. The Royal Agricultural Society's Show, recently held at Chelmsford, was among the most successful; and the progress which it serves to test may be pronounced to have been conspicuous and well defined. In all the classes of Live Stock the general quality was superior in a marked degree, while so great a number of well manufactured implements, suited to the wants of an advancing state of tillage, was never, perhaps, before exhibited.

"We have not been so much favoured by summer weather, I imagine, as you have, a prevalence of cold easterly winds for an unusually long time, was followed by heavy rains in June, which produced a check in everything but grass crops. Hay is good, and latterly has been well secured. A great many large stacks have risen under my eye in the last ten days; but the harvest must be late, as much wheat is only yet in bloom. I was lately over some parts in England, at London, Greenwich, &c., as Judge at the English Society's Show in Essex, so that I saw a good deal of corn land. I should say that Barley is a full crop, and in pretty good forwardness. Wheat hardly an average; though in some highly favoured districts, with good dry soil, it looks large; on cold clays it is the reverse. Oats are generally poor. The turnip crop, on which so much depends, was, in many parts, badly sown, from the wet season, and the prospect of a deficient crop is rather telling on the sale of lambs and lean stock. Wool has brought a good price, about 1s. 3d. to 1s. 5d. per lb. Farmers are in good plight, and improving in management. It is wonderful what an impulse has been given to cultivation, and what large quantities of guano, phosphates, petre, &c., are now applied to land. You will likely have seen some account of the Agricultural Society's meeting at Chelmsford, where I was one of the Judges of Shorthorns. Our first prize bull, "Townley's, Master, Butterfly," was sold to a company in Australia for the sum of 1200 guineas! I think the French and Australian exceeded the Americans in price this season. It was a new feature in our meeting to have foreigners showing stock and getting prizes, but these they could not have got in common competition; for their animals had no quality, save for the dairy and the plough."

Silvering Glass.—The following is a receipe for silvering glass:—Take 1 oz. pure nitrate of silver, 1 oz. aqua ammonia, 2 oz. distilled water. Mix and add 2 oz. of pure alcohol, 2 oz. of distilled water, 1-4 oz. of grape sugar. The above is placed in the article to be silvered (a bottle, for instance), and kept at a temperature of 160° till the silvering is effected. The purity of the chemicals influence the result, in fact all depends upon that.—Jos. Fitzpatrick.

[Those beautiful silverized glass globes seen in the windows of many stores are produced by the above described process. The information communicated by our correspondent is useful and interesting.—*Sci. Am.*

Soap Suds for Currant Bushes.—A correspondent of the *Indiana Farmer* says:—"I have found the cultivation of currants to be very profitable. By care and attention I greatly increased the size of the bushes and the quality of the fruit. My bushes are now about six or eight feet in height, and are remarkable thrifty. The cause of this large growth, I attribute in a great measure to the fact that I have been in the habit of pouring soap suds and chamber lye around their roots during the summer season. I am satisfied from my own experience and that of some of my neighbours, that this treatment will produce a most astonishing effect upon the growth and product of the bushes, and would advise others to give it a trial."

ACTION OF LIME ON SOIL.

Lime sweetens the soil by neutralising any acid character it may possess; it assists the decomposition of inert organic matters, and therefore increases the supply of vegetable food to plants. For both these reasons it is a very valuable addition to peaty soils. Lime decomposes the remains of ancient rocks, containing potash, soda, magnesia, etc., occurring in moist soils; it at the same time liberates silica from these rocks. It is consequently a means of the supply also of most important mineral food for vegetation. Lastly, lime is one of the substances found uniformly and in considerable quantities in the ashes of plants; it is a necessary part of the plant's structure, and if it is deficient in the soil its application may be beneficial simply as furnishing a material indispensable to the substance of a plant. Such are some of the explanations given in books of the action of lime on soils.

But, by experiments lately made, it is found that lime is capable of liberating one-half of the ammonia contained in the soil. It is now possible that for profitable agricultural use the ammonia of the soil is too tightly locked up in it? Can we suppose that the very powers of the soil to unite with and preserve the elements of manure are, however excellent a provision of nature, yet in some degree opposed to the abnormal crops which it is the business of the farmer to cultivate? There is no absolute reason why such should not be the case. A provision of nature must relate to natural circumstances, for instance, compounds of ammonia may be found in the soil capable of giving out to the agencies of water and air quite enough of ammonia for the growth of ordinary plants, and the preservation of their species; but this supply may be totally inadequate to the necessities of man. It may be argued that the earth was made for man, and consequently there can be no natural law interfering directly with the welfare of his kind; but a population of greater civilization and greater requirements also pre-supposes one of greater powers and appliances. It is the function of man to make use of the laws of nature—to modify the natural conditions. Now, it is not impossible that the laws which preserve the supply of vegetable nutrition in the soil are too stringent for the requirements of an unusual and excessive vegetation such as the cultivator must promote. In the case of ammonia locked up in the soil, lime may be the remedy at the command of the farmer—his means of rendering immediately available stores of wealth which can otherwise only slowly be brought into use. In this view lime would well deserve the somewhat vague name that has given it, namely, that of a "stimulant," for its application would be in some sort an application of ammonia, whilst its excessive application, by driving off ammonia, would lead to all the disastrous effects which are so justly attributed to it. I do not wish to push this assumption too far, but if there be any truth in it, it points out the importance of employing lime in small quantities at short intervals, rather than in large doses once in many years—*Pof. J. T. Way, (Eng.)*

Making a Needle.—Needles are made of steel wire. The wire is first cut by shears from coils, into the length of the needles to be made. After a batch of such bits of wire are cut off, they are placed in a hot furnace, then taken out and rolled backward and forward on a table until they are straight. They are now to be ground. The needle pointer takes up two dozen or so of the wires, and rolls them between his thumb and fingers, with their ends on the grindstone, first one end and then the other. Next is a machine which flattens and gutters ten thousand needles an hour. Next comes the punching of the eyes; and a boy does it so fast the eye can hardly keep pace with him. The splitting follows, which is runing a fine wire through a dozen, perhaps, of these twin needles.

A woman, with a little anvil before her, files between the heads and separates them. They are now complete needles, but are rough and rusty, and they easily bend. The hardening comes next. They are heated in batches in a furnace, and when red hot are thrown into a pan of cold water. Next, they must be tempered, and this is done by rolling them backward and forward on a hot metal plate. The polishing still remains to be done. On a very coarse cloth needles are spread, to the number of forty or fifty thousand. Emery dust is strewed over them, oil is sprinkled, and soft soap daubed, by spoonfuls over the cloth; the cloth is then rolled hard up, and, with several others of the same kind, thrown into a sort of wash-pot, to roll to and fro for twelve hours or more. They come out dirty enough: but after rinsing in clean hot water, and tossing in sawdust, they look as bright as can be, and are ready to be sorted and put up for sale.—*Scientific American.*

EXPENSE OF AN OSAGE HEDGE.

The Ohio Valley *Farmer*, a new and well-conducted monthly, published at Cincinnati, commenting on a proposed *cheap* plan of growing a hedge, gives us the following figures &c.:—

We are advocates of hedge planting, and believe that the Osage Orange is destined to add largely to the material wealth of our country, as well as beauty to our rural scenery. But the construction of a durable hedge is no child's play, and requires much care and knowledge, expense and patience.

In the first place the ground should be properly prepared; and the true and proper way to effect this is to trench the ground from 2 to 2½ feet in depth, by 3 to 4 feet in width. In making this trench, the ground should be all thrown out to the required depth and width, and unless the land is naturally of great richness, the well pulverized soil that is to be returned back into the trench, should be mixed up with rich mould, or well rotted manure, brought and added to the original soil. If the soil is of a clayey nature, arrangements should be made for the passing away of all surplus water that might afterwards find its way to the bottom of the trench, and be likely to remain there stagnant.

The reader may judge what it would cost to prepare the ground for one rod in this thorough manner. We think 50 cents is as low a rate as could be possibly calculated upon. Then the cost of cultivating, hoeing, and weeding the plants, and pruning the same, the above writer places at 5 cents a rod annually, when in reality the cost would be twice—if not three times this sum. But at 10 cents a rod, this item alone for the five years would be 50 cents a rod.

Including cost of plants, and all other expenses, a "good and durable" hedge should not be expected for a less outlay than $1.50 a rod, with a further annual expense of 5 cents a rod for pruning, after the 5 years' growth has been obtained. It is idle to expect to construct a good hedge in any cheap, slip-shod manner. No one can travel a day in any part of our country without witnessing these puerile attempts towards the construction of live fences. Without any preparation of ground worth naming, and with but little attention to pruning, a beggarly show of tall, waving, weak plants, is all that is left as an apology for a fence, after a four or five years' effort. It is absolutely necessary, in order to have a thick, thrifty growing hedge, to first prepare the ground well, so that it may be able to feed and support the dense mass of foliage sought after; and then after *planting, to give repeated close prunings to induce the out-cropping of a multitude of* shoots.

Wheat Crop and Draining.—Our friend John Johnson, Esq., of Seneca county, writes us under date of Aug. 15, as follows:

"I have threshed 25¼ acres of this year's wheat-crop (Soule's wheat), from which I have 847 bushels of 60 lbs. to the bushel, and which I sold for $1,396,55; but you must not take this as a criterion of the crops in this county. With one exception. I have heard of only one farmer who has over 15 bushels to the acre, on undrained land, and he said he had nearly 18 bushels of Mediterranean, but his *Soule's* was nothing. You must make our farmers do better than that, else you may as well turn your paper into a political one, and give up agriculture at once. *The crops on drained lands are good.*

Mr. Johnson adds—"That is not good advice you give in your last paper, to "drain a few rods," for the following reason: In the first place you must have a sufficient outlet, no matter how little you drain, and often the making the outlet is expensive. In the next place, if you drain a small piece at the lower end of your field, you will not get much benefit from it, as you must drain your upland to make perfect work on *your low land*, or at least you must drain your upland as far up as you can get water to run in a wet time—*Country Gentleman.*

Care of Colts.—1. Keep colts in good order, not too fat, with a variety or change of food. Oats, cut feed or roots, and two or three quarts of grain—not more—per day.

2. Wean colts before taking up for winter, if strong and lively; if not, afterwards, but according to the time of being foaled.

3. The colt should be weaned according to the strength of it and its dam, but generally at the age of six months.

4. It is not advisable to let a colt draw on the mare longer than can be helped.—*Correspondent Virginia Farmer.*

Fences operate in two ways; if good, they are adefence; if poor, they are an offence.

DISEASES OF ANIMALS, &c.

A correspondent of the *Country Gentleman*, writes that paper as follows:—

Editors of Country Gentleman.—Having often seen requests in different papers, for remedies for different diseases in cattle, horses, &c., and having myself arrived at the age commonly allotted to man, and having seen some of the good effects of experiments, and feeling it to be a duty to do as much good as possible when I have an opportunity, I send you a number of receipts.

Cure for Hollow-Horn in Cattle.—Take a tea-kettleful of boiling water; turn the head of the creature one side so as not to scald the hide, then pour the water on to one horn until the creature feels it. Then on the other; so alternately, which will probably produce considerable perspiration. Then give 2 ozs. or more of good mustard seed in some feed.

To Prevent Hollow-Horn.—Cut off the end of the tail as far as it is minus bone, whenever you discover the hair rolled or twisted, if the weather is warm and propitious, and not likely to freeze. Then feed them well and there will be no danger.

For Cattle that have Eat too much Corn or other Grain.—Take one quart of good yeast, mix a half-pint of human excrements, and pour it from a bottle down the creature's throat,' and I think you will soon hear from it.

Cork on Oxen's Feet.—Put on British oil.

Cure for Foul in the Feet.—Cleanse between the hoofs with a rope; then put in powdered blue vitriol.

For a Horse Kicked in the Stifle.—Put in fine salt often, and nothing else, or bind a small bag of fine salt on to the wound.

For a Flesh Wound on a Horse.—Boil the bark of green osier (Dog Mavamouse) to a strong decoction, and wash the wound often.

Wind Galls.—I do not believe that wind galls can be cured without running the risk of killing or ruining the horse, as they are caused by the undue secretion of the synovia or mucous fluid, that lubricates or greases the joints, brought about by too hard use. A dirt floor or well littered stall, moderate use and good rubbing may prevent them from increasing, and they may be cured by lancing and bandaging—but lancing may cause inflamation and consequent stiffness of the joint. I have known one case successfully treated in this way, but I would never try it, believing that the risk is too great for what is no injury, but merely a blemish.—r. c. *in Country Gent.*

THE WONDER OF INDIA RUBBER.

Among the recent applications of India Rubber none are so remarkable as the manufacture of what is called "Hard India Goods," into which the rubber enters most largely. There is in New York a Company called the Beacon Dam Company, which is devoted to the manufacture of this kind of goods. By a process that originated with Mr. Chaffee, coal tar is mixed with the rubber, and the compound makes one of the most solid, elastic and elegant articles that can be found in the market. It resembles polished stone, is as black as coal, needs no finish, and has of itself as hard and exquisite polish as it is possible for any metal to bear. There seems to be no end to the articles to which it can be made. Canes of the most elegant form and appearance are constructed out of it, and are as tough as so much steel, while they have all the elasticity of whalebone. Cabinet work, inlaid and mosaic, ornamental to the parlor and the chamber. Spectacle bows and glasses for the eye, are made so light as to be no annoyance, while their elastic character cause them to sit firm to the head; opera glasses, castors, sand stands, ink stands, brushes for the hair, that cannot be harmed by hot water, tape lines, pen holders, pencil cases, cigar cases, government boxes for the army and navy, government buttons, and an endless variety of articles are thus made, and the articles are of a most elegant character; syringes of a novel form and character; machines for oiling cars and engines, on a new principle, indicate that this new use of rubber is to work a complete revolution in the arts and manufactures.

But one of the greatest applications of this new rubber manufacture is the new telegraph wire that is made from it. It needs no poles, it is laid in the ground. It needs no covering; a trench of a few inches is dug; the rubber telegraph wire is put in and covered up; the wire is enclosed with the rubber, no dampness can effect it; no storm render the wires inoperative; no insect sever; no rust corrode. It would appear fabulous if we should state the miles of this wire that have already been engaged, and the goods cannot be made to meet the demand.

The government of the United States is now the best customer of the Beacon Dam Company. The call for the Navy and Army button is immense; the article is elegant; the naval button has on it the motto, "don't give up the ship." And so tough are these rubber buttons, that if one is placed on an oak plank and pressure applied, it can be sunk clear into the plank, snd will come out unharmed; and the government shaving boxes, which are about three inches in diameter, are so strong that a man weighing 200 pounds can press his whole weight on one of them and not break them. Gun handles, sword handles, and other military implements are constructed from this material. They are cheap, elegant, enduring.—*Boston Journal.*

Curing Provisions in Corr.—A system of curing provisions has for some years been in operation by several of the most eminent continental firms,, particularly in Hamburg, which permits of meat being cured at all seasons of the year, and not during the winter months only, as has hitherto been the case in this country. As frequently happens when a superior mode of operation prevails in any particular place, the utmost secresy is employed to prevent the peculiar nature of the processes from getting publicity, and strangers are in most instances excluded from the concerns where this new mode of curing is carried on. Urged by a desire to discover in what this new system differed from the ordinary mode, Mr. Murphy, of the firm of P. Murphy and Son, of this city, (Cork) determined on visiting Hamburg, and examining the matter for himself. It was not without difficulty that he succeeded in his object; but succeed he did, and the result is the introduction of the continental mode of curing in this city, the only locality in the kingdom in which it has ever been in operation.

The materials used in curing beef, pork and bacon, according to the most approved continental plans, are ice and salt, mixed together in certain proportions, varying according to the temperature of the weather, the quality of the provision to be preserved, and the market for which it is intended. Mr. Murphy has, for the purpose of carrying on the provision trade, and the subsidiary branches with which it is connected, the interest in a suite of extensive stores at the Watercourse, covering, in the aggregate nearly two acres. Here, with some alterations, new buildings, &c., which are in course of completion, there will be ample accommodation for every branch of the business, the extent of which may be estimated when it is stated that for provisions alone 60 or 70 coopers are generally employed in the formation of casks. The newest and most approved methods of killing the animals are adopted, so as to combine the greatest possible despatch with the *minimum* amount of injury to the meat. The carcases having been scalded or singed, then cut into the proper sizes, they are ready to undergo the operation of curing. For this purpose ice and pickle are put in requisition, the former being kept in chambers specially assigned for its reception. In a row of large and deep tanks, nine in number, the pieces of provision are laid in ice and salt, and then undergo the process of curing, which, unless to the initiated, is mysterious. The duration of the process depends on circumstances; but nothing can be more perfect than the mode in which the ice succeeds in effecting that great desideratum—the production of sound, firm and perfectly sweet beef, pork, or bacon, warranted to staad any climate. In these tanks, 7,200 carcasses can be cured at one and the same moment. After the pickling has been concluded, there are distinct portions of the concern appropriated to the preparing and drying of hams, flitches, &c, either by artificial heat, or the spontaneous action of the atmosphere.—*Irish Paper.*

The Grass.—Consider what we owe merely to the meadow grass, to the covering of the dark ground by that glorious enamel, by the companies of those soft and countless, and peaceful spears. The fields! Follow forth but for a little time the thoughts that we ought to recognize in those words. All spring and summer is in them—the walks by silent, scented paths—the rest in noonday heat—the joy of herds and flocks—the power of all shepherd life and meditation—the life of sunlight upon the world, falling in emerald streaks, and falling in soft, blue shadows, where else it would have struck upon the dark mold of scorching dust—pastures beside the pacing brooks—soft banks and knolls of lowly hills—thymy slopes of down overlooked by the blue line of lifted sea—crisp lawns all dim with early dew, or smooth in evening warmth of barred sun-shine, dinted by happy feet, and softening in their fall the sound of loving voices, all these are summed up in these simple words; and these are not all. We may not measure to the full depth of this heavenly gift, in our own land; though still, as we think of it no longer, the infinite of that meadow sweetness, Shakspeare's peculiar joy would open upon us more and more, yet we have it but in part. Go out in the spring time, among the mea-

dows that slope from the shores of the Swiss lakes to the roots of their lower mountains. There, mingled with the taller gentains of the white narcissus, the grass grows deep and free, and as you follow the winding mountain paths, beneath arching boughs all veiled and dim with blossom—paths that for ever droop and rise over the green banks and mounds sweeping down in scented undulation, steep to the blue water, studded here and there with new mown heaps, filling all the air with fainter sweetness—look up towards the higher hills, where the waves of everlasting green roll silently into their long inlets among the shadows of the pines; and we may perhaps at last know the meaning of those quiet words of the 147th Psalm, "He maketh grass to grow upon the mountains." There are also several lessons symbolically connected with this subject which we must not allow to escape us. Observe the peculiar characters of the grass, which adapt it especially for the service of men, are its apparent humility and cheerfulness. Its humility in that it seems created only for lowest service—appointed to be trodden on and fed upon. Its cheerfulness, in that it seems to exult under all kinds of violence and suffering. You roll it, and it is stronger the next day; you mow it, and it multiplies its shoots, as if they were grateful; you tread upon it, and it only sends up richer perfumes. Spring comes, and it rejoices with all earth—glowing with variegated flame of flowers—waving in soft depth of fruitful strength. Winter comes, and though it will not mock its fellow plants by growing then, it will not pine and mourn, and turn colorless or leafless as they. It is always green, and is only the brighter and gayer for the hoar frost.—*John Ruskin.*

Wool.—The *Wool Grower* is of opinion that the price of wool will be materially advanced this Spring for all that is brought to market in good order. If farmers intend to hold wool, it should be carefully washed and put in prime order. One advantage in raising wool over many other articles, is the imperishable character of the material. If well prepared and put up in a merchantable manner, it can be stored away for a long period without deterioration, and hence the owner, if his pecuniary necessities do not require an immediate sale, can await a favorable market. Combinations of dealers to put down prices; adverse seasons to manufacturers; excessive importations; commercial revolution; and the thousand other contingencies which tend to depress the market, need not affect the farmer whose flock is usually a source of profit.

To Make a Balky Horse Draw.—The London *Times* gives a remedy which proved successful. After all sorts of means had been tried and failed, it was suggested that a simple remedy used in India should be tried—that is, to get a small rope and attach it to one of the fore feet of the stubborn animal, the person holding the end of it to advance a few paces, taking with him the horse's foot, when, as a matter of course, the horse must follow: The suggestion was at first ridiculed, but at last a rope was brought and applied as described, when the horse immediately advanced, and in a few minutes was out of sight, much to the amazement of the crowd. The experiment is simple and worth a trial.

Buckskins and Gloves.—A good recipe for cleaning leathers and buckskin gloves. Take half a pound of prepared chalk, half a pound of prepared alum, three cakes of pipeclay, half an ounce of oxalic acid, half an ounce of isinglass, one ounce of pumicestone powdered, one tablespoonful of starch, six tablespoonsful of sweet oil, two ounces of white soap. To be mixed in boiling water; the oxalic acid and prepared alum to be added last.

To Fatten Fowls.—Fowls may be fattened in four or five days by the following process:—Set some rice over the fire with skimmed milk, as much only as will serve one day.—Let it boil till the rice is swelled out; add a teaspoonful of sugar. Feed the fowls four or five times a day in pans, and give them as much each time as will fill them. Great care must be taken that they have nothing sour given them, as that prevents their fattening. Give them clean water or milk from rice to drink. By this method the flesh will have a clear whiteness.

Holes in Pies.—Persons who are in the habit of making pies during the fruit season should not make a hole in the top of their pies. By leaving the crust whole the juice is made to boil quicker, and thus the fruit is well done without the crust being burnt. The same result applies to meat pies.

Lemon Butter.—Twelve eggs, 6 lemons, 2 pounds white sugar, 2 oz. butter. Rub the butter and sugar to a cream, beat the whites and yolks separate, grate the rinds of the lemons; mix the yolks with the butter and sugar over a slow fire, then stir in the whites, and it is ready for use. Set away until cold. It makes a very nice sauce.

EFFECTS OF CLOVER HAY ON ANIMALS.

Some late writers have taken the position that clover hay produces a most injurious effect on domestic animals, particularly horses; and that to this cause the great increase of deceased horses is to be attributed. We lately heard a farmer affirm, that he believed the introduction of clover into general cultivation the greatest curse yet inflicted on the country, and assigned as a reason for this singular opinion its effects on animals when used as fodder. Late English writers have attributed to this kind of hay the prevalence of heaves in horses, and the great increase of other diseases that effect the respiratory organs. This is a most important subject, and should receive a full investigation. Clover is too important a plant to be discarded, or condemned, except upon the most satisfactory evidence. Its value as a fertilizer and a preparative for wheat, to say nothing of its use for pasture and hay, would demand that it should not be condemned unheard. For ourselves, we have very little belief in the injurious properties assigned to clover. We have used it constantly for pasture and for hay, more than thirty years, and never, to our knowledge, has any animal suffered from it; certainly, no horse has been taken with the heaves when fed on it, or while in our possession. As hay for sheep, we have considered it unrivalled, and should have no fears that any stock would not winter well with a supply of well-cured clover hay.

And here lies, we think, the great source of objection to clover hay. It is too often imperfectly cured. To save the leaves and the heads, which are apt to fall in handling or curing, the hay is put into the barn while the large stems are full of moisture, or the natural juices, and the fermentation which ensues causes the whole mass to become damp; and if not spoiled wholly, it becomes mouldy, black, and when used, raises such a dust, it is no wonder that horses and cattle are choked or their lungs destroyed. Our experience shows that clover may be perfectly cured without losing any of its valuable parts; cured so that when fed out, no more dust will be flying than from timothy or herd grass, and we shall be slow to believe that from such hay any injury to animals ever ensues.—*Ohio Valley Farmer.*

Labels for Fruit Trees.—The labels which come from the nursery on trees, are not designed to be permanent, and they should be replaced with permanent ones at the first leisure after planting. *Be particular that the wire by which the label is attached is not* round the body of the young tree, otherwise it will, as the tree grows, be buried in it and materially injure the tree. The very best label we have ever used is a strip of thin sheet zinc, about four inches long and three-fourths of an inch wide at one end, cut so as to taper to a point at the other end; which, after writing the name of the tree, the date when set out, and where obtained, can be bent round one of the small branches, with the writing outside, and as the branch grows it will expand without injuring it.

The ink for writing on these labels is made thus: Take of verdigris and sal ammoniac each 2 drachams; lampblack, 1 dracham; water, 4 ounces, to be well mixed in a mortar, adding the water gradually. It must be kept in a glass-stopped vial. Write on the zinc with the ink, after shaking it well, in a quill pen: and after it is dry you may expose it to the weather or bury it in the ground for years, and it will be as legible as when first written.—*Louisville Journal.*

A Pretty Process.—Among the machines lately on exhibition at the agricultural exposition in Paris, was one for hulling wheat. It is said that by the methods now in use the bran, when it is separated from the wheat, carries away with it at least twenty per cent. of nutritive matter. The new process reduces this amount to four per cent. The hulled grains of wheat, seen through a microscope, present a perfectly smooth and polished appearance, something like that of potatoes when the skin has been removed by washing. The bran itself is but a pellicle, of which excellent paper is now made.—The inventor of the machine, M. Besnire de la Pontonarie, affirms that if this process had been applied to the grain consumed in France the past year, the crops, instead of presenting a deficit of seven million hectolitres, would have shown a surplus of three million hectolitres. (The hectolitre is a fraction over 2¾ bushels.) The cost of hulling a hectolitre of wheat by the new process is about four cents.

Propagating Fish.—Mr. Roswell L. Colt of Paterson, New Jersey, states in a letter to the Commissioner of Patents, that he has ordered from Scotland the spawn of the trout, carp and salmon, with the view of propagating them in the waters of New Jersey. He suggests that the Patent Office should import for distribution the spawn of the red mullet of Europe, as well as that of the sardines, for breeding in the Middle and Southern States.

EDITORIAL MISCELLANY.

PRIZE ESSAYS.—Our readers will see, by reference to our advertising sheet, that the Minister of Agriculture has offered three prizes for essays on the diseases and insect enemies of the wheat crop. We fear the time is too short to do more than compile the information already before the public in the pages of agricultural papers and other similar publications. What we suggested was a Commission of intelligent agriculturists in different parts of the Province, to note the habits and character of the various insects that prey upon the wheat crop during two or three seasons at least, and to publish the results of their observation and experience for the public benefit. This plan should still be adopted.

UNIVERSITY COLLEGE.—AGRICULTURAL DEPARTMENT.—It will be seen from an advertisement in another page, that Professor Buckland will commence his course of instruction in Agriculture in November; and as it terminates in April, an excellent opportunity is afforded to such of our agricultural youth as are desirous of acquiring a higher and more systematic knowledge of their art. It is to be hoped that many of our young farmers will thus be induced to spend the approaching winter. Any young person possessing an ordinary English education might most advantageously attend not only the Agricultural class, but likewise other classes in which subjects are taught, that have a most important bearing on practical agriculture and mental training in general, such as Chemistry, Natural History, Mineralogy and Geology, History and English Literature, &c. A whole winter's instruction in these subjects would require an outlay of only a few dollars! Young farmers, cultivate your minds; make yourselves well acquainted with the principles on which your interesting and important art is based; the only sure way of obtaining success in it, and of becoming useful and respectable in the world.

NOTICE.—We feel grateful to those friends who have responded to the accounts sent them during the past month. Many, however, have not yet been heard from, but hope they will bear us in mind during the present month.

PROVINCIAL EXHIBITION OF UPPER CANADA.—We are glad to learn that the extensive arrangements making by the Local Committee at Kingston for the Exhibition on the 23d, 24th, 26th, and 26th inst., are of the most satisfactory character, and fast approaching to completion. The buildings and spaces are more than usually extensive, and the cost, we are told, will exceed $10,000. This large outlay includes, of course, the permanent buildings, &c., and is defrayed by the Local Committee. The Society's advertised premiums amount to upwards of $10,000, besides the large number of extras usually given. From all that we can learn, with such powerful inducements to competitors and visitors, we confidently anticipate a display in every respect worthy the public spirit and rapid progress of this age and country. Welcome all to Kingston, and continued prosperity to the agriculture and arts, useful and ornamental, of Canada.

SALE OF PURE BRED STOCK.—We direct the attention of our readers to Mr. G. Miller's advertisement of Stock for sale on 8th October. Mr. Miller's is well known to all who are in the habit of attendind our Provincial Fairs, and is of very high quality. We have no doubt the sale will be well attended.

SALE OF SHORT-HORN CATTLE, SHEEP, &c.—Such of our readers as are in want of pure Durham cattle, improved grades, and thorough bred sheep, would do well to attend the sale of Mr. R. Wade, Jun., Colbourg, whose unremitting attention and success in the importation and breeding of superior cattle for many years past have gained for him an established reputation. For particulars see advertisement.

NEW SEED AND IMPLEMENT STORE, MONTREAL.—We are happy to learn that Mr. Evans, Jun., son of Wm. Evans, Esq., Secretary of the Board of Agriculture of Lower Canada, and the well known agricultural writer, has opened a Seed and Agricultural Implement Store in Montreal in which he will keep an extensive assortment of pure British and American seeds and a collection of the more useful implements and machines used by farmers. Such an establishment must be of great convenience and importance to our brother farmers in the Eastern section of the Province particularly, and we trust that Mr. Evans will meet with adequate support.