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THE
Canadian Agriculturist.

VOL. VIII.

TORONTO, AUGUST, 1856.

No. 8.

THE WHEAT FLY—MIDGE.

We regret to find that this destructive insect is greatly extending its ravages in Upper Canada. In the Lake districts, or that part of the country bordering the Lakes and Niagara River, its ravages appear to have been most severe. It is much to be regretted that none of our Agricultural Organizations, from the Bureau of Agriculture down to the Township Societies—appear to think the subject of insect depredation worthy of their notice. At least we are not aware that any systematic plan for observing the numbers, orders or families, habits, times and modes of propagation, territorial extent, destructive powers, parasites, &c., &c., of those insects that prey upon the farmer's crops, or for discovering the remedies that have been or may be employed to prevent their ravages, has yet been suggested or adopted by our Agricultural Boards or Societies. As a journalist we are left entirely to our own limited observation, to imperfect newspaper accounts, and the occasional remark of a correspondent who has found the "weevil," or "grub," or "worm," or "little yellow maggot" in his wheat, and wants to know where it came from, or how it can be got rid of. The subject is still further involved in doubt by the contradictory statements of wheat speculators—one party declaring that the "fly" has done immense injury; and the other, that it's all "a bugbear to keep up prices."

What could more properly engage the attention of our Bureau and Boards of Agriculture than to collect and disseminate authentic information on a subject like this? The N. Y. State Agricultural Society, aided by a grant from the Legislature, have employed a distinguished entomologist, (A. Fitch, M.D.) to examine and report upon the noxious, beneficial and other insects of the State. The results of that examination will no doubt benefit us as well as our neighbors, but there are facts peculiar to Canada that ought to be ascertained and made known. We trust a hint will be sufficient, and that next season systematic and extended observations will be made under the proper authority.

We have in previous volumes of the *Agriculturist* explained the habits and appearance of the *Wheat Midge*, and also of the *Weevil*. There is still, however, much confusion among writers and correspondents in regard to names, and this is

another reason for such an examination of the subject as we have hinted at. The insect generally spoken of at present as preying upon the wheat in the ear, is the *Midge*, or Wheat Gnat (*Cecidomyia Tritici*). It is found in the kernels of wheat in its chrysalis or pupa state, the egg having been deposited by the parent fly upon the ears while the grain was yet soft or milky. There is a very wide distinction between this insect and the Weevil, (*Curculio granaria*). The former is of the *dip-terous*, the latter of the *coleopterous* order. The true weevil preys upon the grain after it is harvested and when stored in mills, &c. The larvæ of the Midge is most destructive while the grain is yet soft in the ear. Indeed it is said that it cannot eat through the skin of the ripened grain, and therefore is not to be dreaded in the granary.

REMEDIES.—To the wheat-grower the most interesting part of the subject is how to prevent the depredations of this insect. We believe no perfect remedy has yet been discovered, but so far as we can gather from the experiments and observation of others, as well as our own, we recommend *early sowing* and *early varieties*. We made a tolerably close inspection of our own fields this season, in which both the Hessian Fly and Midge were found, and the result confirmed the wisdom of the above advice. In a field of blue stem, sowed 12th Sept. on a warm clay loam, summer fallowed and manured, we found the Midge in about every fifth ear, and from one to three kernels affected. In a field of Red-chaff, sown a fortnight later and after a crop of pease, on good soil, not manured, four out of every five heads were affected, and from two to six grains in each. A strip of this field was blue-stem, sown at the same time as the red-chaff, and was less affected than the latter, though there was no perceptible difference in the time of ripening.

Full ploughing wheat stubble has been recommended, and if it were generally practiced, would no doubt, *with early sowing*, prove nearly, if not entirely successful. An experiment, which ought to be repeated in several localities this fall, was made last year by an intelligent gentleman in one of the Western States. We cut out his statement for insertion in this number, but it has been unfortunately mislaid. The experiment, however, was as follows:—He made two square boxes of wood, of equal size, and placed them in his wheat stubble. Under one the ground was spaded and inverted to the ordinary depth; the other was placed on the stubble undisturbed. Both were covered with milinet (a kind of gauze,) which allowed heat and moisture to penetrate but prevented the fly from escaping. He kept a close watch during June and July, and found that the Fly or Midge appeared in the unspaded box from two to three weeks earlier than in the other. This proved that turning the larvæ under ground in the fall retarded the appearance of the fly, and, combined with early sowing, shows the wheat-grower a method by which he can “get ahead” of his dreaded enemy. We may revert to this subject in our next number. Its importance no one will deny. To the farmers of Canada it is almost a question of life or death. A Committee of the N. Y. State Legislature reported that they had “full proof that a single insect (the Midge) last summer (1854) destroyed property to an amount exceeding *fifteen millions of dollars*” “in the State of New York alone.”

We have no data from which to estimate our loss in Canada, but even at a guess we may set it down this year at two or three millions.

SHORT-HORN STOCK.

Mr. Thorne, of Dutchess County, N. Y., is a worthy competitor of Col. Morris, in the purchase and importation of first-class Durham cattle from the best herds of Great Britain. He has twice paid 1000 guineas for a single animal.

We believe he has imported several of the best Short-horn cows to be found in England, totally regardless of cost. We hope, before long, to pay a visit to Thornedale, in which case we shall be able to speak more fully of Mr. Thorne's stock. In the mean time, we subjoin the remarks of B. P. Johnson, Esq., the intelligent and trustworthy Secretary of the New York State Agricultural Society:—

THORNEDALE.—We visited Mr. Samuel Thorne, with Hon. Wm. Kelly, last month, and found his farm and stock in fine condition. Since our last visit Mr. Thorne has added another farm of 250 acres, admirably adapted to his purposes, and particularly well calculated for his sheep. He is engaged in completing his farm buildings, the last erection being in the hands of the carpenters, and when completed, there will be no more convenient and well arranged buildings and yards in the country.—The stock were in fine condition, healthy, and all the cows breeding finely. Since we were last at Thornedale, Grand Duke has been disabled, and 2d Grand Duke and Neptune have been imported to supply his place; the former at the price of 1000 guineas, the sum paid for Grand Duke. Although the loss of Grand Duke is a very serious one, still we are of opinion that, so far as Mr. Thorne's herd is concerned, and his interest as a breeder, it is far more than made up by the very superior bulls he has secured. We think them decidedly superior to Grand Duke; and our only wonder is, that 2d Grand Duke should have been permitted to leave England, as his equal, of his age, we do not believe was left behind. Neptune, from Mr. Booth's stock, is a very perfect animal, and to our taste is a bull of extraordinary qualities, and a Short-horn breeder would rejoice to breed from such an animal. He has all the fine qualities for which Mr. Booth's breed is distinguished; and after examining him again and again, we were constrained to admit that we found no fault in him. We shall expect that the produce from these bulls will do credit to the Thornedale herd.—Of Mr. Thorne's young stock, most of it was sired by Young Balco, and it sustains most fully the opinion we formed of him, when we first saw him at Thornedale. For style and finish, some, and, in fact, almost every calf dropped from him would do credit to any herd; and the loss of this very choice animal is a very serious one, he having met with an accident, which rendered it necessary to kill him.—The cows imported by Mr. Thorne, all now breeding, were gems in the English herds from which they were selected, and the produce from them show that they are likely to be perpetuated here in all their excellence. We were pleased to find Mr. Thorne's cattle in good breeding condition, ensuring healthy and vigorous offspring.—Mr. Thorne purchased at Sir Charles Knightly's sale, in April, four cows and heifers, whose arrival is daily expected, which will make the female department of his herd the richest, probably, of any herd in this country, if not in the world.—We are glad to see the interest Mr. Thorne takes in his herd. He has entered upon it as a business, and is well prepared to carry it forward with that intelligence, which will be rewarded with success to himself and great advantage to the country.—We advise those who are desirous of examining first-rate stock, and seeing a farm in capital order, to visit Thornedale, where they will be kindly welcomed.

RASPBERRY VINEGAR.—*B. G. F. Gerry, N. Y.* The following is a good receipt for making raspberry syrup or vinegar. The vessels used in making or preparing it, should be China or glass. Mixed with water, it is one of the most pleasant as well as wholesome summer drinks:

Put one quart of best vinegar, (white is preferable) to two quarts of raspberries not over ripe. Let them steep in the vinegar twenty-four hours; then strain them through a sieve without pressing the fruit, and pour the liquor so strained on two quarts more of raspberries. In twenty-four hours more strain it off again, and to a pint of juice put one pound and a half of very fine loaf sugar. Put the above into a jar and the jar into a pan of warm water, and let it stand till all the sugar is melted, taking off the scum as it rises; then take the jar from the warm water, and when cold bottle off for use.

THE APPROACHING PROVINCIAL EXHIBITION.

We presented to each of our subscribers, with our last issue, an *Agriculturist Extra*, containing the authorised Prize List of the Provincial Association, and the Rules and Regulations of the Annual Exhibition, which will be held this year at Kingston, September 23d to 26th.

There are a few points in the Regulations, to which it may be useful to draw the special attention of the readers of this Journal. In the first place, all Entries must be made on printed forms, which are supplied to the Secretaries of Agricultural Societies; which forms are to be filled up and signed by intended Exhibitors, and forwarded to the Secretary of the Board of Agriculture, Toronto, not later than Saturday, September 6th; after which a charge of one dollar on each article entered will be imposed. The only exception to this rule relates to the Horticultural, Ladies', and Foreign Departments, in which entries can be made up to Tuesday, September 23d, *when the books will finally close*. This rule it is intended shall this year be absolute; a condition essential to the harmonious and efficient working of the Exhibition. Such persons as cannot conveniently procure blank forms of entry of the Secretaries of Societies, may readily do so, by applying personally or by letter either to the Secretary of the Board of Agriculture in Toronto, or the Local Secretaries, Dr. Litchfield or W. A. Geddes, Esq., Kingston. Exhibitors must remit one dollar with their entries, when a Member's Ticket will be forwarded to them, which will admit them at all times free to the Exhibition. The charge of admission to non-Members will this year be a quarter of a dollar, each time.

We learn that the Local Committee, at Kingston, are proceeding with the fencing and buildings in the most satisfactory manner, and that the accommodation provided for the Show generally, is on a larger scale than heretofore. It is much to be desired, therefore, that the public will adequately respond, and that each County and Township throughout the Province will see that their industrial condition and capabilities are properly represented in this National Exposition. The Show of the Lower Canada Society being held the previous week at Three Rivers, and that of the State of New York the week following at Watertown, in the vicinity of Kingston, will naturally attract to the latter a large number of visitors and productions from beyond the limits of the upper section of the Province; and a much larger amount of business will in all likelihood be transacted than on any previous occasion.

It is only bare justice to remark that Kingston and the surrounding district are setting an example, which is alike honorable to their sound judgment and public spirit, and which it is devoutly to be wished may be hereafter followed by other places, when the Provincial Shows take place. They are erecting, entirely at their own expense, a strong permanent fence around the beautiful Show ground, consisting of upwards of 20 acres; and also a handsome and capacious building, consisting mainly of glass—a Crystal Palace indeed, somewhat in miniature! These grounds will be rendered ornamental by planting, &c., and while affording a pleasant resort to the public during a large portion of the year, will be excellently well adapted for the holding of agricultural and horticultural shows, and other public objects. We

have much pleasure in noticing these facts, particularly as it has, in some quarters, been insinuated that a portion of the funds of the Association is given to these extra objects, with a view of rendering the Provincial Shows permanent at Kingston—an allegation which, it is almost unnecessary to say, is altogether imaginary. We will only remark further, that the Local Committee are striving to do their utmost in providing ample accommodations both for visitors and articles for exhibition. The wharfingers have liberally consented to forego all charges for landing and re-shipping Stock and all articles for the Show; while the President of the Association has generously promised to supply the necessary amount of hay without any charge, either to the exhibitors or the Association. We trust that such efforts will be nobly sustained by the country.

IMPORTANCE OF COLLECTING RAIN WATER.

Much might be done towards lessening the evils and discomforts occasioned by droughts by collecting in tanks, built underground, the rain water which falls on the roofs of houses and farm buildings. There are few families but what suffer inconveniences, more or less, during the driest portions of the season in Canada, from an insufficient supply of soft water; which is an essential in many of our domestic operations.

Rain water is undoubtedly the best not only for many domestic, but also for most garden and agricultural purposes; and an adequate supply of so essential an agent ought to be a primary consideration with every owner of a house and the smallest plot of ground. It has been carefully ascertained by actual experiments, that every hundred cubic inches of rain water contains more than four cubic inches of air, of which more than half is carbonic acid gas, and the remainder nitrogen and oxygen, in the proportion of 62 of the former to 38 of the latter. Rain water also contains a peculiar substance analogous to the extractive matter and glute of plants, though differing from them chemically. Compared with all other water naturally produced, it is so pure and so abounds with the gases beneficial to plants, that none other can equal it for their service. Water obtained from ponds and springs invariably contains matters offensive or deleterious to vegetation. The worst water is that called "hard water," containing, as it often does, an excess of salts and magnesia. If pond water be stagnant and loaded with vegetable extract, it is as bad as hard water, for it contains carburetted hydrogen and other matters exceedingly hurtful to vegetables. These last may be somewhat improved by the addition of an ounce of carbonate of ammonia to each gallon. Water, heat and air are the three active principles in inducing the germination of the seed and the after development of the plant. Remove any one of them and their existence ceases. The purer each of these elements are the better. Water containing deleterious ingredients, artificial heat produced by fire beyond certain limits and unaccompanied with a due proportion of humidity, and vitiated air, are all alike inimical to vegetable existence. Rain water is usually much warmer than that derived from springs and wells, and on that account is much better adapted to the purposes of the farmer and gardener in reference to the promotion of the growth of plants; many of which are often injured rather than benefited by the injudicious application of cold spring water.

THE MIXING OF SALT WITH LIQUID MANURE.

Some years ago Mr. Parkes, the author of *The Chemical Catechism*, got up quite an excitement among the farmers of England on the application of common salt as a manure. As the extraordinary expectations raised, even not borne out by trial, the article of salt again became neglected by agriculturists. Still it would appear, that even in the insular position of Britain, whose atmosphere is always strongly impregnated by the saline influence of the surrounding seas, salt has of late years come into more general use on the farm, particularly for mixing with compost heaps.

It has been stated, on good authority, that M. Barral has proved satisfactorily that common salt is a fixer of ammonia. If this be correct, the use of salt in compost manures, in which fermentation and decomposition are always more or less active, admits of an obvious solution. In Switzerland it has of late become a common practice with farmers to mix salt with their liquid manure in the tank, in the belief that it tends to prevent the escape of ammoniacal gas. This practice is said to have arisen from an accidental circumstance, which it will not be uninteresting briefly to narrate. The import duty on salt in Switzerland is very high and oppressive, and therefore not unfrequently leads to a breach of the law. A peasant having tried to defraud the authorities by carrying off a bag of salt, was discovered and pursued. In his anxiety to escape the punishment which would be inflicted if the bag was discovered, he threw it into his manure-tank. After all risk of exposure had disappeared, he thought that his liquid manure must be greatly injured by the salt, and accordingly diluted the moisture largely with water. To his great surprise he found that the grass was better and more readily eaten by stock on that part of his meadow where the liquid manure was applied containing the salt, than those portions which were irrigated by the ordinary liquid manure. The experiment was several times repeated, with a similar result; till at length the Government allowed refuse salt to be used for manure with little or no duty. Such salt usually contains from 75 to 80 per cent. of saline matter. About 1-10 lb. of salt is used for every 22 gallons of liquid manure; in gravelly, dry soils a larger proportion of salt is employed, and in soils naturally damp a smaller proportion.

In soils liable to suffer from drought, on dry hill-sides, salt is employed, after being first mixed with earth. Its effects are most apparent on peas and leguminous plants of every kind, or roots; potatoes, carrots, &c. It has little effect on clay soils, excepting when drained. In some districts it is used for improving the quality of the dung. The salt is first mixed with earth, and this mixture is spread on every layer of dung.

These and other details, communicated by M. Fellenberg, are worthy of a careful consideration from farmers of all countries. In Upper Canada, which is shut out, in great measure, from oceanic influence, it is well understood how necessary salt is to domesticated animals, and how greedily they devour it. Plants must obtain the salt they require, either from the soil or the air; if both be destitute, it must evidently be supplied artificially. Salting hay, especially when injured in the making, is found to be a beneficial practice; and the application of this material to our barn-yard manure, compost heaps and yard drainage is deserving a fair and general trial

by Canadian farmers. We would caution, however, our readers against applying large doses of salt, or using it in an undiluted state. When so employed it is apt to injure vegetation for a time.

THE CAROB-BEAN: A NEW FOOD FOR CATTLE.

The algaroba bean, or carob-tree (*Ceratonia siliqua*; in Greek, *Κεραρία*), the fruit of which is sometimes termed "St. John's bread," at other times "locusts," "sweet pod," &c., is a very remarkable plant, growing abundantly in the south of Europe, and, indeed, in all the islands of the Mediterranean, and the countries skirting the shores of that sea. In Malta, it is said to be the only tree indigenous to the soil, its dark green foliage relieving the eye from the irksome monotony of the white stone inclosures which everywhere abound, and appears originally to have given the island its name. In all the countries where it grows wild, its fruit is eaten by the inhabitants. In a dried state, it is also largely consumed by horses. In this state, full-sized pods measure from four to five inches in length, about one inch in breadth, and three-eighths of an inch in thickness. When ripe, the pods are round, plump, and contain a sweet, nutritious pulp.

In medicine, its pulp, like that of the tamarind, is slightly purgative. In the form of a decoction, it is also exhibited as a pectoral in asthmatic complaints and coughs.

We have seen no chemical analysis of the carob bean; but it is said to contain about "fifty per cent. of sugar and gum; besides a large proportion of oily matter." This would point to its being used to most advantage for mixing with other food, so as "to season it," giving it a flavour, and inducing stock to eat more largely. In the generality of cases it would appear better adapted as food for milch cows than fattening stock, especially those disposed to run to fat, where sour food does not agree with their stomachs. A little may also be profitably mixed with the dry food of horses, in a pounded state; but from its purgative nature it is probably not so suitable for sheep, although they are extremely fond of it. In all these cases, however, experiment must be left to settle its value, whether as food for horses, cattle, sheep, or pigs.

At present we ought to thank the Great Exhibition at Paris for bringing it into fresh notice; it being there largely exhibited by Spain and several other southern states of Europe, from which a plentiful supply could no doubt be had. Where grown, the dried pods cost something under £3 per ton, and in London sell at about £8. 10s.

With regard to the many names which it has acquired, it is said to have obtained that of "St. John's bread," from its being supposed to be the fruit of the tree which yielded the wild honey eaten by St. John in the wilderness. Metaphorically, the two words *μέλι ἄγριον*—translated, *wild honey*—may have meant, in the figurative language of the East, the carob-bean, from its mellifluous smell and sweetness resembling that of honey, and have been eaten along with the locusts; or carob-beans, locusts, and honey may have more probably been the food referred to.

The term "locust," used by Mr. Melladew and others, in London, is obviously a misnomer, and therefore ought not to be used: for locusts were permitted by Divine law (Lev. xi. 21, 22) to be eaten, and were so by the Jews; while in no case does, or can, the word *ἀκρίδας*—translated *locusts*—mean the fruit of a tree. This gentleman, however, in his letter to the Council, is quite right with regard to the "husks which the swine did eat," referred to in the parable of the Prodigal Son; for the words *ὑπο τῶν κεραριῶν*—translated *with the husks*—ought obviously to have been rendered *with carobas* or *carob beans*, meaning with the fruit of the carob-tree, which was used as food for swine, according to Columella, who may be said to have been contemporaneous with St. John the Baptist—*κεραριῶν* being the genitive of the Greek name (*κεραρία*) of the plant *Ceratonia siliqua*, and not with the husks of the fruit, as translated. In short, husks is not the proper English name for the unshelled bean as given to swine, and as now imported.

"There is something in a name," it is said, and perhaps the best designation for this new edible will be *Carob-bean*. The practical question at issue is to give it a fair trial, as food for our different kinds of stock, mixing it in all the various ways which circumstances may dictate. In many cases, it may be given medicinally alone. It would also be desirable to have a more perfect analysis of it, as from its taste and smell it probably contains an aroma and tonic peculiar to itself, less or more affected in quality by season, climate, and management. Pliny tells us it grew abundantly in Syria in his time, and doubtless also it will be found equally plentiful throughout the whole of Asia Minor. Whether is the European or Asiatic the richest in quality? Is its sugar grape-sugar or cane-sugar? These and many other questions demand a chemical solution.

BONES AND PROGRESS.

We had just laid down Jethro Tull's refreshing volume, published in 1732; had been pondering over his condemnation of the use of dung for turnip crops; when a Lancashire subscriber wrote us—"If you would give in your columns the receipt for making superphosphate from bones, it would be most useful to your readers." Strange revolutions these in one century! Jethro Tull in 1730 telling us, "I have made many trials of fine dung, but I have for these several years last past left it off;" while in 1856, chiefly for root crops, the wide world is explored for manures. Startling facts these, for the farmers of the old school; cheering prospects for the modern experimental searchers after truth; and a ground for very useful reflections for all who are over-fond of theorising on agricultural practices. When Tull condemned the use of dung, and when his neighbours raised shouts of derision at his noble efforts, they were all about as wide of the truth as the fen-land farmer, who, at the close of one of Dr. Buckland's eloquent after-dinner addresses, at the Cambridgeshire meeting, exclaimed, with a voice that could have been heard across Bardolph Fen, "Aye, Doctor, it may be all true; but, by Gom, there's nothing like mook."

It has taken a long century to establish the truth of some of Tull's assertions—his drill husbandry—his deep ploughing—his complete cleansings and pulverisations; another, but we feel a much shorter interval, will make other general advances—will effect the still more general use of artificial manures, will bring forth yet more powerful land-cleaning and digging machines. The farmers of 1876 will, perchance, keep fewer farm-horses, raise more food for man; they may, it is more probable, talk with some compassion of the citizens of a past generation, who imported, at a great expense, from the other side of the globe, nitrogenous manures, whilst they poured huge quantities of a similar kind into their own rivers. The chairman of the country meeting of the Royal Agricultural Society in 1956 will, perhaps, talk of these things as of some old tale of the Druids—strange notions, not exactly comprehensible; he may enliven his speech by referring to the correspondent of a contemporary, who gravely denounced the then lately proposed use of oil of vitriol and bones as a wild scheme, only quite certain to "burn up the land."

But we have to answer the question of our subscriber as to the manufacture of superphosphate of lime from bones. The operation, supposing always that it is the farmer who wishes to make his own, is not very difficult (although we much doubt its economy, except the turnip growers despair of finding a trustworthy manufacturer). It consists in finely pulverising the bones, and then thoroughly mixing them in a leaden or earthen vessel with about 44 per cent. of their weight of *previously* diluted (with water) sulphuric acid. The analysis of boiled bones has been given by Professor Way, in the twelfth volume of the "Journal of the Royal Agricultural Society." He found in 100 parts of these—

Moisture.....	10 parts.	Phosphate of Lime.....	60 parts.
Animal Matter.....	16 "	Carbonate of Lime.....	11 "
Sand.....	3 "		
			100

The quantity of oil of vitriol required to convert the phosphate of 100 lbs. into bi-phosphate here will be

For the carbonate, 11 lbs; for the phosphate, 33 lbs.=44 lbs.

There are other impure varieties of phosphate of lime used in the making of bi-phosphate, such as bone charcoal, bone ash, guano, coprolites, &c., few of which are commonly available by the farmer; nor can he fairly hope to compete with even the honest manufacturer, in cheapness, since he neither has the machinery nor the chemical knowledge requisite to ensure purity in his materials; neither does he possess the advantage which the manufacturer possesses, in being the preparer of his own sulphuric acid. If, however, our subscriber wishes to become a manufacturer, he will find in the volume to which we have referred, most of the ordinary processes described.—*Mark Lane Express.*

TO BRAISE CHICKENS.—Bone the chickens, stuff them with forcemeat, place in the stewpan the bones and trimmings, lay the chickens upon them with a braise of fine herbs, onions, mace whole, some thin slices of bacon, about three parts of a pint of stock, or if that is not handy, water, and two glasses of sherry; the bacon should be added last. Cover close, and stew for two hours. Then take out the chickens, strain the braise, remove the fat, and boil the braise rapidly in a glaze; paint it over the chickens with a brush, while the braise is being boiled; brown the chickens before the fire, it adds to their appearance. When glazed, fowls may be braised in the same manner.

THE LATE SHOW IN PARIS.

We gather from the correspondent of the *Mark Lane Express* the following summary in regard to the late great agricultural show in Paris:—

"There are no less than 1,300 head of cattle, divided as follows:—Shorthorns 140, bred in England; subdivided into two classes—yearling bulls and yearling heifers; old bulls and cows. In the Young Class there are 25 bulls and 27 heifers; in the Old Class, 36 bulls and 43 cows. To these the programme had at first announced only four prizes to each category, or sixteen in all; but a subsequent decree has further extended the prize list, and eight prizes have been given to each of the bull classes, and seven to the heifers and cows respectively. Besides these, there are prizes given to the Shorthorns bred in France, which form a distinct class, and of which there are 55 exhibited, making a total of 195 Shorthorns.

The Herefords are most niggardly represented. There are bulls and two cows altogether; that is four animals, three of which belong to Mr. Fisher Hobbs, competing for six prizes! The Devons are not much better here, whatever they may be at the Bath and West of England shows; of these there are only four bulls and seven cows, to compete for eight prizes.

The Scotch breeds are, in our opinions, with the exception of the Shorthorns, better represented than any other, both in point of numbers and merits, the Ayrshires and Blackpolled cattle especially; of the former there are 18 males and 60 females, bred in Scotland. To these 19 prizes, 8 for the bulls and 11 for the cows, have been given. Besides these 78 Ayrshire animals, there are 17 more, born in France, which form a distinct class, making a total of 95 of the Ayrshire breed. Of the Black Angus tribe there are about 40 animals exhibited, to which 13 prizes were offered. Of the West Highland, 30 beasts are competing for 11 prizes. The Irish Kerry breed is represented by 23 animals, among which 8 prizes will be distributed. Altogether the number of animals exhibited by the United Kingdom, including the Channel Islands, is nearly 400.

The Dutch breed numbers about 40. The various Swiss tribes of horned cattle amount to no less than 228 animals, pretty equally divided between the Friberg, Bernese, Schwitz, Central and Eastern Switzerland, and Unterwald. Of the Tyrolese and Austrian breeds there are 62 animals. Of the long-horned Hungarian, Moravian, Gallician, Bavarian, and Bohemian races there are 46 animals; and 4 Buffaloes from Hungary. Saxony has sent 12 animals; Denmark and Holstein 32.

The French races, as may well be imagined, are very remarkable and numerous represented. The heavy and gaunt Norman breed muster 61 animals; the Flemish race, 37; the beautiful white Charolais breed, so similar to our Short-horns, amount to 36 animals; the Gascon race—some of which, it is said, found its way to England two hundred years ago—is represented by only two male animals. The other breeds—such as Garonese, Courtois, Breton, Limosine, Sales, Parthenaise, &c.—muster about one hundred more, which, with the French contribution to the Short-horns and other English breeds, make a total of nearly 500 head, many of which are produce of the cross of Short-horn bulls with the native breeds, and thus form one of the most interesting features in the whole exhibition.

The sheep of all races and all countries are very numerous. England has sent about 250 lots, of various breeds; Holland 24 lots; Austria, about 100 pens; Saxony, 28; other foreign states, 18. France has contributed—of her own breeds, or of foreign sorts bred in France—nearly 200 pens: making a total of 1,200 sheep, 500 of which are contributed by France, 400 by Great Britain, and the rest by the European states.

In the Pig class there are 171 animals, 72 of which are contributed by Great Britain, 82 by France, and 17 by other countries.—Out of the 82 belonging to France, there are no less than 65 representing the English breeds; thus showing how widely they are being spread all over the country, and in what estimation they are held.

The Poultry class, &c., numbers 474 pens, containing about 1,400 birds.

In the Implement class there are 2,107 lots, comprising every kind of instrument or appliance connected with agriculture: of these, 371 belong to the United Kingdom, 3 to Australia, 83 to Belgium, 51 to Denmark, 5 to Holstein, 2 to the Roman States, 7 to the United States, 42 to the Grand Duchy of Luxembourg, 33 to Holland, 1 to Prussia, 5 to Saxony, 36 to Switzerland, 4 to Wurtemberg, and no less than 1,430 to France.

In the agricultural produce department there are 4,635 lots, only 120 of which belong to England, 480 to various other nations, and 4,065 to France, chiefly contributed by the Government Schools of Agriculture."

At the close of the exhibition, the Minister of Agriculture addressed the assembled competitors, on the occasion of the distribution of prizes. The following is an extract from his speech:—

“Gentlemen,—I think I may without pride proclaim at the outset of the ceremony, the full success of the Exhibition, and the definite triumph of the cause of Universal Agricultural Competitions. This institution, very modest in its origin, was commenced in 1850; how rapid, therefore, has been its progress, and how much its circle has been increased, even since last year! The vast palace erected for the Exhibition of Industry has not been large enough for this agricultural show. The bovine race alone almost equals in number that of all the animals exhibited in 1855. Independently of the races, the principal qualities I pointed out to you last year, there is now in this Exhibition for the first time the polled breed of Angus, those from the mountains of Scotland, the Irish breed from Kerry, that of Central and Eastern Switzerland, those of Denmark and Holstein, and lastly, thanks to the enlightened zeal for which I thank its government, the most highly esteemed breeds from Austria. Near those noble animals are also ranged more than 9,000 specimens of other races, which fill the farmer’s stalls, animate his fields, or give life to the poultry-yard.—Round them have been classified in innumerable quantity the most precious gift of the soil, the most varied productions of cultivation, and the newest and most ingenious machines—those powerful and indispensable auxiliaries to human labor. * * * * * Examine the catalogue of our Exhibition; in addition to its agricultural value it has a great political signification. Have you not remarked with pleasure that names the most separated by civil dissensions have come together at this peaceful tournament? The reason is that agriculture has its rewards for every legitimate ambition, that all parties have an equally powerful interest in it, and that the beauty of the productions of agriculture give the measure, and in certain respects the degree, of civilisation. * * * * * Before separating from you, gentlemen, I give you an invitation to meet here again next year; you may rely on the same kind hospitality, and allow us to hope that you will evince the same eagerness to attend here.”

THE CROPS.—MANNY’S MACHINE.

To the Editor of the Agriculturist.

SIR,—Having been engaged during the last three months in introducing “Manny’s Patent Combined Mower and Reaper,” and putting them into operation, I have had occasion to travel in various parts of the country, and to observe the prospects of the crops, and the benefits derived from the use of these machines. I therefore purpose making a few remarks for publication in your valuable Journal, if you think them worthy of a place. With regard to the crops, then, I think that our farmers are more highly blessed with an abundance than they have ever been in any previous year, particularly with wheat, of which there has been a much greater breadth sown, and which, with very few exceptions, promises more than an average yield. These exceptions, I find on enquiry, are mostly confined to light farms, which have suffered for the want of rain, and to farms which have been badly tilled, and to the want of carrying out the principle of rotation of crops. Prices of wheat have been so high of late, that farmers are anxious to reap the immediate benefits, without regard to injuring their farms, and without considering that other kinds of produce are just as remunerative, and perhaps more so, as the weevil is making its appearance in some parts, and consequently a change will be necessary in order to exterminate them. There have also been very large crops of hay and oats, particularly of the former, of which I think I never saw better crops, or a more favorable time for securing them. In this farmers have been very much assisted by the use of Manny’s machines, which I had the pleasure of introducing last year, and which I find have given very general

satisfaction; indeed, when they have not given satisfaction, the fault lies entirely with the farmers, who have either not understood how to work them or have not put their land in proper condition. Upon this point, a few suggestions may not be altogether unacceptable. In my tours I have met with several kinds of Reapers and Mowers, but in no case have I found either the one or the other, separately, to do better work or give more general satisfaction, than Manny's Combined Machine, which is competent to do good work either at reaping or mowing, provided the land is first put in a proper state. In order to do this, it is not advisable to throw the land into high ridges when intended for meadows, but it should be made as level as possible by thorough ploughing and harrowing both ways. All large stones, sticks, &c., should be picked off, and the land well rolled, so as to settle all small stones, &c., below the surface. The same course, though it may seem to some burdensome, should be adopted with grain land, and I am confident, from my own observation, and I have had a good deal of practical experience at farming, that it will prove both remunerative and satisfactory. Many persons have already adopted it, and I do not know of a single instance where they have, that they are not well pleased with their machines, and very seldom meet with accidents. It is true that this course is not indispensably necessary, in order that these machines may be employed, but where it can be adopted, it is advisable, and will ensure better success. * * * *

Yours respectfully,

D. MASSAY.

Newcastle, Clarke, July 21st, 1856.

[Mr. Massay mentions several cases in which the "Manny" machines succeeded in lodged clover to the surprise of all spectators, including himself. He also claims for this machine high merit as a Reaper. These particulars, however, are more suited to our advertising columns; and we therefore omit those portions of Mr. M.'s letter. A good practical farmer himself, his remarks on crops, preparation of land, &c., are entitled to a place where we have inserted them.]

LIVE FENCES—THE CRAB APPLE.

To the Editor of the Agriculturist.

SIR,—I have read with pleasure the replies to your several questions respecting live fences or hedges, published in the *Agriculturist* for April.

Allow me to say that the Native Crab Apple-tree, in my opinion, is far superior to any mentioned in your valuable paper for live fences, and for many reasons; being indigenous, it will stand the rigors of the Canadian climate; the tree lives to a great age, the wood is the hardest, the limbs the crookedest, the thorns the sharpest, and the blossoms the sweetest of anything in Canada.

I never saw a field enclosed with a hedge. I have only seen specimens for ornament in gardens; consequently I cannot follow the traditions of my fathers; and trust you will not laugh at me if I undertake hedging on my own account.

Let me ask, why is it necessary to have the hedge so thick-set and bushy at the ground? This appears to me to be the very cause of failure in this country, where the summers are intensely hot, and the winters so extremely cold. Is not the want of light and air, the cause of blight or dying out of the hedge, which so many com-

plain of? Does it not also add to their trouble, by becoming a cage for every unclean thing, and a complete and safe harbor for mice to girdle the plants in winter?

We all know that for gardens and fields round the farm buildings, it is necessary to fence against children, chickens, and pigs; but for division fences on large farms I do not think this to be necessary. Pigs and chickens have no business there, and children are as well off one side the hedge as the other, and better in school than either.

As I have recommended a new tree (as old as Adam) to grow the hedge, allow me to plant it merely for experiment. Suppose we form a moderate ridge, then set the crab-tree of two years' growth in a line on the ridge one foot apart; the next spring head them off one foot from the ground. In after years trim the side branches moderately, and use a little patience and some labor in interlacing the limbs in the line with the trees adjoining. It is quite natural for the limbs of the crab-tree to grow horizontally—their thorns will hold them together.

My reason for leaving the hedge open at the ground, is to allow light and air a free circulation, which will, as I think, keep the hedge healthy. Allowing the winds a free sweep under the hedge, will in most winters prevent the snow from lying on the ridge, and make but a poor harbor for mice, and the ridge is easily kept clean.

I am decidedly of opinion that in five or six years from setting, we may have a fence that will turn cattle and horses.

Time and experience will determine the utility of the crab-tree for hedges, the distances apart to set them, the height to head them, &c.

If I have advanced anything worthy of notice, you are welcome to improve upon it and trim it before submitting it to your readers—for editors are always considered handy with *shears*, otherwise cast it into the fire, crab-trees and all.

Paris, 1st July, 1856.

Yours, &c.,

H. C. P.

QUICKSAND IN WELLS.

To the Editor of the Agriculturist.

SIR,—Can you, or some of your correspondents, tell me how I can remedy an evil which has given me, as well as my neighbors, much trouble? I refer to the filling up of our wells with quicksand. Water is not found until we penetrate a quicksand strata, and neither brick, stone, nor wood will prevent it from sifting into the well, or rising as high as the water. I have thought that there must be some means of keeping it out, but no plan we have yet tried has entirely succeeded.

If you can suggest one, I have no doubt you will confer a great favor on many of your readers.—I am, &c.,

J. C. B.

York, July 11th, 1856.

REMARKS.—We have been troubled with the same grievance as our correspondent, and found a wooden curb sunk several feet deep in the quicksand, and supporting a brick lining above it a tolerable remedy. The sand comes in slowly, and requires to be occasionally removed. But we have seen a plan recommended in the "Michigan Farmer," in answer to a similar inquiry, which we are inclined to think will prove effectual. We give it in the words of the correspondent of that journal:—

“Dig the well as deep into the quicksand as convenient, then commence stoning—have ready one or two loads of coarse sand and gravel from the bed of a stream, or from the beach of a Lake; as soon as you have one tier of stone placed round, chink the holes with small stones, then fill in with your sand and gravel outside of the stones, and pound it down solid with the end of a hand-spike or other stick of wood; then another tier of stone and sand, pound as before; and so continue until you get as high or a little higher than the water will be likely to rise. I have known wells to be built in this way these fourteen years; and during that time they have never been troubled with quicksand.”

Another correspondent says:—

“I have dug two wells where there was quicksand; when I stoned them up, I filled in behind the stones with gravel, and I have not had any trouble since; if there is sand in the bottom, I would lay a laying of stone and gravel in the bottom, and I will warrant that no sand will get in.”

RINGING A BULL.

To the Editor of the Canadian Agriculturist.

SIR,—Having witnessed the very necessary operation of ringing a bull, and the manner in which most people in this country do it, and the pain the animal suffers, I wish to suggest a mode adopted in the South-west of England. Here the general practice is to bore the cartilage of the nose with a red-hot iron, and then insert the ring, made of half-inch iron rod, and about $4\frac{1}{2}$ inches over all; but, in my opinion it is a cruel and barbarous way of doing the thing. Now, allow me to state my plan, which is as follows:—First, the animal is thrown on his off side, and his feet made secure; then the nose is cut through with a punch three-eighths of an inch in size; on the inside a piece of wood is put against the cartilage, and allowed to rest on the ground; the operator then strikes the punch with a hammer, and the ring is inserted, being first smeared with a little olive oil; the ring is made of one-fourth inch iron, and its diameter is $2\frac{1}{2}$ inches. There are two joints, fastened together with two counter sunk screws or rivets. It cannot be too highly finished. This is the quickest way I ever witnessed; it can be all done in one hour with three men.

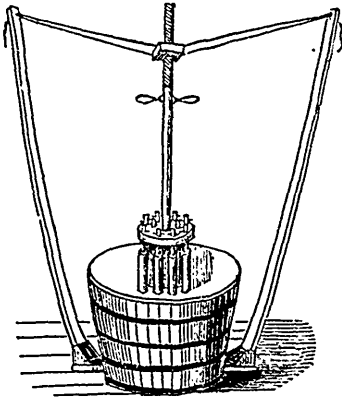
Having taken the *Agriculturist* for some time, and reading it regularly, I think if any farmer can communicate anything beneficial to his neighbors, he should write and have it inserted, so that others may profit by his experience. If you think fit to insert this in your next, you are at liberty to do so.

Yours truly,

A SUBSCRIBER.

STICK TO THE FARM.—It is a peculiar part of the programme common to high pressure times, when speculation riots and drives reason and prudence into obscurity, that men forsake the plow, anvil, and work bench, and resort to the selling of silks and laces, toys and tobacco, rat-traps, grindstones and ribbons for a living; it is useless for a man of prudence and experience to urge that bankruptcy is generally the fate of all such as forsake the farm and resort to the counter for a living. Inexperienced in the business, their failure is a mere problem in the process of solution; the first re-action in commerce and currency will sweep them overboard and they will go down. A successful farmer, possessing a family, has no more of a right to forsake his well-secured farm boat, for a leaky, shaky, cob-wed, lace-lined boat, than he has to resort to intemperance or gambling. Stick to your farms: your lands will never desert you, nor cease to supply your wants, unless you first desert them. The mercantile business is a humbug to whoever is inexperienced in it; like gambling it must be understood to make it pay, and woe to him who bets on a card that he can't tell as well by seeing the back as the face.

ANDERSON'S WASHING MACHINE.



This machine is attracting attention from those who wish to lighten the toil of the washing day; and what *man* could refuse his sympathy in such a case? Various plans have been proposed to substitute machinery for the feminine knuckles. In some cases the labor of working the machine was greater than to ply the old-fashioned wash-board; in others, the clothes were washed to pieces, which did not harmonize with the popular notion of economy. We have examined a good many machines, and enquired of those who used them as to their operation, but we have never seen one constructed on the *rubbing* principle that gave satisfaction. The knuckle machine has been extensively introduced, and is liked by some, while others reject it. The machine of which the above is a cut, is free from most of the objections to which others are liable. It works easy, washes tolerably clean—with an abundance of soap and water, especially the latter,—and does its work in good time. We have had one in use for some months, and our “women folks” would not part with it for many times its cost.

As the reader will readily see, it is simply a “pounder” suspended between two springs. The “pounder” is, however, an ingenious contrivance, and must be seen to be properly understood. C. J. Houghton agent for Toronto.

MILLET.—Having with many others suffered from the severe drouth of 1854, in my hay crop, I was induced last spring to procure half a bushel of millet seed. When preparing my ground for oats, I reserved one acre and a quarter for the millet. After corn planting, say about the first of June, I plowed the said ground again, harrowed it down, sowed my millet seed, harrowed thoroughly again, and quietly waited the result. Well, after a while the young sprouts made their appearance, looking very much like what is generally called pigeon grass. But after securing my wheat and oat harvests, I had a heavy crop to cut on my millet ground. Leaving a small piece which I sowed thinner than the rest to ripen for seed I mowed the field, and cured it as clover should always be cured—in small cocks. When sufficiently dry, I carted five heavy loads to my barn, and my horses, cows and sheep have thanked me many times for my first experiment with millet. They have all eaten it readily and greedily, and I am so highly pleased with it, that I shall sow much more this spring. The time for sowing should be as indicated above, when the weather is warm enough to make corn grow readily—from the 1st to the 5th of June—and the time of harvesting comes after the rush of other harvests is over, thus accommodating the farmer, at both periods when it wants attention. It yields seed bountifully, which makes a flour very palatable for man, and is decidedly nutritious for every animal and not forgetting the fowls—they are very fond of it. I say then to my brother farmers, try a piece of millet, and I am confident if you try it once, you will again.—*Ohio Cultivator.*

STEWED CUCUMBERS.—Take two or three straight cucumbers, cut off one end, then take out the seeds, lay them in vinegar and water, and pepper and salt; have some good farce, and fill each cucumber with it; dry your cucumbers well out of the vinegar first, then dry them in a clean rubber; then fry them, if for brown; if for white, not; take them out of the butter, and put them to stew in some good stock, with one onion, a fagot of herbs, a slice of lean ham, until tender; thicken the liquor, and pass through a tammy; season with a little drop of vinegar, lemon juice, sugar, salt, and white pepper; glaze the cucumber several times to a light brown.

DESULATORY MEMS ABOUT BEES AND THEIR MANAGEMENT.

1. Never kill a bee on any account whatever.
2. There are rather more than 300 in one cunce, and about 5,000 in one pound avoirdupois.
3. A swarm, to be considered a good one, ought to weigh not less than from four to five pounds; if much less than four pounds, it ought either to be returned whence it came, after taking away its queen, or be joined to another weaker hive or swarm.
4. The first swarm is headed by an old queen, the others by young queens. Eight or nine days after the first swarm comes off, one or more young queens will be heard, if you tap the hive with your hand gently once or twice in the evening and listen, crying, "peep, peep, peep;" that hive is then ready to swarm a second time.
5. Use hives made of wood, and so constructed that you can give your bees room as they require it; the side-box system is the best. As a general rule, swarming ought to be prevented as unprofitable, unless an increase number of hives is wished for, as one strong stock is much better than three weak ones.
6. One side-box has been known to contain upwards of fifty pounds of pure honey, and to be taken without killing a bee; and fifty pounds of honey at 2s. a pound is £5 sterling, which is money!
7. Fumigation is effected by the means of the smoke of the Fungus pulverulentus, or common "Fuzz-ball" or "Frog-cheese," which grows plentifully on old pasture, and should be dried in the oven till it is like tinder—the smoke stupifies, but does not kill the bees. When they are in that state, pick out the queen, drench them with water in which a little honey has been mixed, and place the hive containing nothing but these half-drowned bees upside-down under the hive you wish them to join; the dry bees will go down and lick the others dry, and the whole will then ascend into the upper hive, and the junction will be complete. Let the upper hive rest on the under one.
8. Weigh all your hives or boxes when empty, and mark upon them the weight. For the winter support of your bees each hive with the bees should weigh nearly twenty-eight pounds; the richer and stronger the bees are in winter, the better will they be able to work in spring for you. If in autumn they do not weigh nearly twenty-eight pounds, they must be fed up to the proper weight.
9. When a swarm comes off, and the weather is not suitable for bees to go out and get honey, they ought to be carefully fed, or they will starve in their hive.
10. Some fine day in spring lift the hive off the bottom board and scrape that clean, wash and dry it, then replace the hive; and you will have saved the bees an immense deal of trouble, and added to their health and comfort.—*APIARIAN in Field.*

CANADA AND STATE SHOWS, 1856.

Canada East.....	Three Rivers.....	September 16 to 18.
Canada West.....	Kingston.....	September 23 to 26.
Tennessee.....	Nashville.....	October 13 to 18.
Vermont.....	Burlington.....	September 9 to 12.
Virginia.....	Wheeling Island.....	September 17 to 19.
Ohio.....	Cleveland.....	September 23 to 26.
Am. Pom. Society.....	Rochester.....	September 24 to 30.
Michigan.....	Detroit.....	September 30 & Oct. 1, 2, 3.
New York.....	Watertown.....	September 30 & Oct. 1, 2, 3.
Illinois.....	Alton.....	September 30 & Oct. 1, 2, 3.
Pennsylvania.....	Pittsburgh.....	September 30 to October 2.
National Agricultural Show.....	Philadelphia.....	October 7.
California.....	San Jose.....	October 7, 8, 9.
Wisconsin.....	Milwaukie.....	October 8 to 10.
New Hampshire.....	October 8 to 10.
Iowa.....	Muscatine.....	October 8 to 10.
North Carolina.....	Raleigh.....	October 14 to 17.
Georgia.....	Atlanta.....	October 20 to 25.
Indiana.....	Indianapolis.....	October 20 to 25.
Maine.....	October 28 to 30.
Alabama.....	Montgomery.....	November 11 to 14.

VEGETABLE POISONS.

BY MRS. LOUDON.

At this period, when so much attention has been directed to the subject of vegetable poisons, from the frequent deaths that have occurred, I have thought that my readers might be interested in learning which of the showy inhabitants of our English gardens are most inimical to human life. Unfortunately, there is nothing in the outward appearance of these plants to indicate their deadly nature. They are generally bright in color, and sometimes very elegant in form; and the greater part of them are common in every flower-garden. Among these last may be mentioned the Aconite, also called Wolfsbane, or Monkshood, of which there are various species, all ornamental. The common Monkshood is well known from the amusement children find in pinching the flowers, so as to make the curiously-folded petals start from beneath the hood like two great eyes. These petals look like gigantic and crested stamens, and the hood, which is only a calyx, is generally supposed to be formed of the petals of the flower. The real stamens are, however, the centre of the flower, and they surround a little group of three or five seed vessels or follicles, which, when ripe, burst open at the top to discharge their seeds. The leaves are deeply cut, and the stem, which is tall and upright, is thickened at the base, where it joins the root, so as to give it the appearance of celery; and persons have been poisoned by eating it in mistake for that vegetable. The part of the root which is buried in the ground is also thickened, and resembles horse radish so much, that a party of friends dining together at Dingwall, in Scotland, were poisoned by the cook fancying it was a root of horse-radish she was scraping, when she was, in fact, offering to her master's guests a most deadly poison. There is nothing in the taste of this plant to warn the eater of it of his danger. It is slightly acrid, but not more so than other plants that are perfectly harmless. The Aconite is very nearly allied to the Larkspur, which is also poisonous, the seeds acting as a violent emetic. The Anemone is another poisonous plant, from its acridity and its emetic qualities; and the juice of its leaves will raise blisters. This is also the case with various kinds of Clematis and Ranunculus. The juice of the common Buttercup is extremely acrid, and the species with a creeping, fleshy root is a deadly poison to human beings, though pheasants seem to eat it with impunity, as its tubers have been found in the crops of birds that have been shot.

The seeds of Peony will occasion symptoms resembling cholera, with violent sickness; and the juice of the Poppy is, as everybody knows, highly narcotic. Opium is prepared from the capsule, or seed-vessel of the large White Poppy, which is cultivated for that purpose to a great extent in the East, particularly in Turkey, Persia, and some parts of India.

The capsule of the Opium Poppy is much larger and more fleshy than that of the Corn Poppy, and this fleshy substance is full of a milky juice, which hardens by exposure in the air into a kind of gum which we call opium. In the countries where opium is cultivated as an article of commerce, the Poppies are grown in large fields, and planted in rows to enable the people to reach their heads easily. When the petals of the flowers have fallen, and while the Poppy-heads are yet green and full of juice, the cultivators of opium wound the capsules with a kind of lancet having too blades, so that two cuts are made with each stroke. The milky juice which exudes hardens in the course of the night, and is scraped off the next morning with a blunt knife, before the sun has had time to melt it. It is afterwards kneaded into cakes, and packed in leaves for sale. Laudanum is opium steeped in spirits of wine; and paregoric is laudanum with aniseed and camphor added to it; morphine is the sedative part of opium separated from its intoxicating quality. In England all Poppies are more or less narcotic, and of course poisonous; but the milky juice is not secreted in sufficient quantities to render it worth while to cultivate the Poppies for their opium.

Nearly all the umbelliferous plants are poisonous in a wild state. Even Celery is only rendered wholesome by cultivation. Wild Chervil is also poisonous, but the cultivated kind is eaten in salads. Of all the umbelliferous plants, Water Hemlock, or Cowbane is, perhaps, the most deadly. It grows in marshy land in several places in the neighbourhood of London; and, as it has no bad smell, it is sometimes eaten by cows, who die immediately. Children are also frequently poisoned by chewing it. It is an acrid poison, and destroy life by burning the coats of the stomach. Fool's Parsley is very dangerous, as it often comes up in the gardens with the other parsley—and when both are quite young it is not easy to tell the difference between them. When in flower, it is distinguished by two long beards hanging from each flower, while the common parsley has

none. But even when not in flower, the two kinds may be distinguished by the leaves of the Fool's Parsley being of a darker and bluer green, and having a smell of garlic. Hemlock is also often mistaken for Parsley:

Water Parsnip is sometimes mistaken for Skirret, the tubers of which are often eaten in Scotland under the name of Crummock. The Water Parsnip, however may be known by it always growing in water, which the skirret does not. The Water Dropwort is still more dangerous from its strong resemblance to Celery; and this last plant is so poisonous that many persons feel giddy only from smelling it.—*London Newspaper.*

DISCOVERIES OF THE AGE.

Some of the most wonderful results of human intellect have been witnessed in the last fifty years. It is remarkable how the mind of the world has run into scientific investigation, and what achievements it has effected in that short period.

Fulton launched the first steamboat in 1807, now there are 3,000 steamboats traversing the waters of America only.

In 1825 the first railroad was put in operation in Massachusetts.

"In 1800 there was not a single railroad in the world. In the United States alone there are now 8,797 miles of railroad, costing \$286,000,000 to build, and about 22,000 miles of railroad in England and America.

"The electric telegraph had its beginning in 1843.

"The electro-magnet was discovered in 1821; and electrotyping is a still later invention.

"Hoe's printing press, capable of printing 10,000 copies an hour, is a very recent discovery.

"Gas light was unknown in 1800; now every city and town of any pretence is lighted with it, and we have the announcement of a still greater discovery, by which light, heat, motive power, may all be produced from water, with scarcely any cost.

"Daguerre communicated to the world his beautiful invention in 1839.

"Gun cotton and chloroform are discoveries but a few years old.

"Astronomy has added a number of new planets to the solar system.

What will the next half century accomplish? We may look for still greater discoveries; for the intellect of man is awake, exploring every mine of knowledge, and searching for useful information in every department of art and industry."

GATHERING CLOVER SEED.

A writer in the Valley Farmer gives the following method of collecting clover heads.

"We once made and used for many years, a very simple machine for gathering clover heads with which a man and horse can go over and gather the seed from double the quantity of land in a day than he can cut over with a scythe; and when the heads only are gathered, they require no other labor, except drying, to prepare them to run through the hulling and cleaning machine. Any tolerable workman can make one of these machines in two days. It is upon the following plan: Make an ordinary sled with sides or runners 14 inches wide and 6 feet 6 inches long. These may be placed 5 or 6 feet apart, and secured together with two cross pieces only at the back end, leaving the forward part open to the length of 3½ or 4 feet; then a box is made to nearly fill the width between the runners. The box is 4 feet long and 15 inches deep, with the forward end open. To the cross pieces at the bottom of the box, at the forward end, teeth of hard wood are secured so as to project about 12 inches; they should be ¾ of an inch thick and 1 inch wide on the top and made a quarter of an inch narrower or beveling on the underside. These teeth are placed *three-sixteenths* of an inch apart, so as to form a comb. If the upper side of teeth were capped with hoop-iron, neatly fitted, it would be better.—This box is hung between the sides of the sled upon two gudgeons or pins two inches in diameter, just as a cannon is hung in its carriage. With two handles, four feet long, secured to the box and projecting behind, the box may be moved on the pins so as to lower or raise the teeth to adapt them to clover of any height. A man with a horse can strip the heads from four or five acres of clover in a day with this machine, and collect it in the box. With one of these machines a farmer can gather as much seed in a day as would be required to seed forty or fifty acres. It needs no hulling or cleaning unless it is designed for market. Some prefer to sow the seed in the chaff to that which is cleaned.

WHERE AND HOW GUANO IS OBTAINED.

The *New-York Evening Post* furnishes the following interesting account:—

"An intelligent gentleman, who has been employed in loading a ship with guano at the Chincha Islands, on the coast of Peru, has communicated to us some interesting information with respect to the trade. He has been at the island at three different times, and nearly six months in all. The last time he was there was in the fall and summer of 1855. He says that he found at times five hundred sail of vessels together, loading with guano, generally large ships. One ship was 4,500 tons burden. Not less than three hundred sail of vessels are now at the island, loading for the United States, Spain, Portugal, France, and English and German ports. Some cargoes are sent to Constantinople and some to Russian ports in the Black Sea. This was before the war in the Crimea. The Russian trade will now open again, both from the Black Sea and the Baltic. Freights are high; £6 10s. are often paid per ton for Liverpool and Hampton Roads. Generally ten shillings more a ton freight is paid to Europe. At the rate at which guano is now shipped from the Chincha Islands, it will be exhausted in six to eight years—not a ton will be left. Twenty thousand tons are sometimes removed from the islands in a single day.

"These islands are about one hundred miles north from Callao. The longest of the group is two miles in length and a quarter of a mile wide, but contains only a small quantity of guano. The most northerly island is the smallest, being about a mile in length by half a mile in breadth. Guano on this island is two hundred fifty feet deep. The island contains a Chinese settlement of Coolies, about a thousand in number, who are employed in digging guano and loading the vessels. A task is given them each day, and if the gang fail to get out the given number of wagon loads, of two tons each, a day, their bondage is continued a longer period, to make it up; so many months or days being added as wagon loads are wanting.

The Coolies are cheated into the belief that they are to be shipped from China to California and the gold diggings, and are further deceived by the offer of a free passage. The knowing Chinese, or the Mandarins, ship them. The ship-master carries them to the Peruvian government for his freight money. All this time the Chinamen are kept in irons and confined below in the ship. The Peruvian government purchase the cargo of living Coolies, paying the Yankee or English captain a round sum for his care, diligence and labor in stealing Chinamen from their homes to be sent into the *guano* mines of Peru for life, or for five to seven years, and to be held in bondage or peonage to pay their passage to the glorious land of the *Meas*.

The guano is hard, and can only be broken up with the pickaxe. It is then broken and shoveled into the wagons, and rolled from the shutes into the vessels.

No person can go upon or come away from the islands without a pass, as they are guarded by more than one hundred armed soldiers belonging to Peru.

The Peruvians send all their prisoners of state into the guano mines, say about two to three hundred, where they are let out to work by day, and at night are shut up in their cells, with only two meals per day. These prisoners are generally provided with wives or female companions, who have been permitted to go to the islands, and hire themselves out for work and prostitution. They are mostly Indians, natives of the country. There is no fresh water on the islands, and each vessel is compelled by law to carry a ton of fresh water there for every hundred tons burden of the ship. The oldest captain in the fleet from each nation is appointed Commodore, and hoists his flag as such on his ship, where all disputes are settled. Indeed the municipal laws of the islands and the fleet are decidedly of Yankee origin.

The islands are about ten miles from the main land, and are composed of new red sandstone. The guano is not all bird dung, but is largely composed of the mud of the ocean, that brought from Peru, is so, at least. When anchors are hoisted into the ship from the holding grounds of vessels along the Peruvian coasts, large quantities of mud of a greenish white color, are brought up, and this mud, when dried, makes guano equally good with the guano taken from the islands.

The birds and seals come upon the island when the people are not at work, but it does not appear that their dung or decayed bodies are more than a foot deep on any of the islands. Fish are taken in great abundance and about these islands, as are also seals, which come there in large schools. Sea lions also abound. The composition taken from the islands, called guano, is stratified, and lies in the same form it did before it was lifted up from the bottom of the ocean.

Our informant says that a geological examination of the islands will satisfy any man that the guano ships are bringing away from these islands a very different thing from the dung of birds or decomposed animals.

Gibbs & Bright, of Liverpool, have a lease of the Guano Islands from the Peruvian government for five years, which expires in 1857, but hope to get their lease renewed. This house pays the Peruvian government about \$4.50 a ton for the privilege of taking all the guano from the islands, the government furnishing the men to dig the guano.

The ships that load at the island are mostly ships chartered to carry a cargo, or are sent there by the owners to take away a cargo, bought of Gibbs & Bright, who have the entire monopoly of the trade.

CHEESE MAKING.

A Correspondent of the *Rural New Yorker*, gives some account of the process of cheese making in one of the best cheese districts of New York, which may be of interest to some of our readers:—

“According to our experience we should set it (the milk when ready for the rennet) at 100 degrees. If the rennet is good, the milk will curdle hard enough to cut in 30 minutes. It should then be carefully cut with a curd cutter, made for the purpose. After the whey, which rises, is dipped off, (which is done by putting a strainer over the tub,) the curd should again be broken with careful handling, as too much squeezing works away the richest part of the curd, which will be readily seen by the whey being white. The whey first dipped off is put into a tin heater, set in a kettle of water, either heated by a dairy stove or an arch built in the dairy-room for the purpose; the former mode is preferable. While the whey is heating, there is ample time for working the curd fine, so that it will scald evenly. The heat of the scalding whey, after it is dipped on and well stirred with the curd, should be from 100 to 104 degrees. A thermometer is very convenient for ascertaining the degree of heat needed. When the curd feels a little tough, or will squeak between the teeth, it is sufficiently scalded. It should then be dipped from the tub to a sink with a rack raised enough from the bottom to let the whey pass off through a tin pipe at one end. A strainer is placed over the sink for the reception of the curd. Work it till the whey is well worked out, when it is ready for the salt. The quantity of salt necessary can be ascertained as well by the taste as any rule. Some say one pound of salt to forty pounds curd which I think rather high.

As for mode of pressing; there are several kinds of presses, but the object should be to press the whey all out before the rind forms. The pressing should continue for twenty-four hours, in which time the cheese should be turned twice into clean cloths. When the cheese comes from the press, it should be greased and bandaged. The grease most suitable is made from whey cream, churned into butter, and dried in an iron kettle over a slow fire until it becomes clear like oil; then a little Annatto is added to give the cheese the proper coloring. Before putting on the bandage it should be dipped into the grease and rung out, to give it the color of the sides of the cheese. Cheese must be turned and greased every day, to keep them from moulding. Care should be taken that they do not crack, on account of the cheese fly, which is a troublesome insect among cheese, if not well attended to.

MISERY OF THE MISER.—Of all the creatures upon earth, none is so despicable as the miser. It is not impossible that the profligate may have a friend, for their is usually left about him some touch of humanity—some one unbroken thread of the finer feelings of our nature; but the miser meets with no sympathy. Even the nurse who is hired to attend him in his latest hours loathes the ghastly occupation, and longs for the moment of her release; for although the death-damp is already gathering on his brow, the thoughts of the departing sinner are still upon his gold, and at the mere jingle of a key he starts from his torpor into a paroxysm of terror lest a superstitious attempt is being made upon the sanctity of his strong box. There are no prayers of the orphan or widow for him; not a solitary voice has ever breathed his name to heaven as a benefactor. One poor penny given away in the spirit of true charity, would now be worth more to him than all the gold that the world contains; but notwithstanding that he was a church-going man, and familiar from his infancy with those awful texts in which the worship of mammon is denounced, and the punishment of Dives told, he has never yet been able to divorce himself from the solitary love of lust, or to part with one atom of his pelf. And so, from a miserable life, detested and despised, he passes into a drear eternity; and those whom he has neglected or misused, make merry with the hoards of the miser.

GIRDLED TREES—CATERPILLARS ON APPLE TREES, &c.

MESSRS. TUCKER & SON,—I observe in the *Country Gentleman* of June 5, an article from a gentleman who has lost several thousand trees by mice the last winter, and I see by the papers from different parts of the country, that immense damage has been done to fruit trees by mice. They were uncommonly plenty in this part of the country last winter, and have done much damage, where proper means to prevent has been neglected. For the benefit of the public, I will mention a preventive which I have used for a number of years, with good success. Take one gallon soft soap, one pound Scotch snuff, one pound sulphur, one tea-cupful of newly slacked lime, (the lime is used to make the others stick.)

Put the above in a kettle and make it scalding hot; stir it well to have it properly mixed, and if too stiff, add a little water, so that it may be applied to the trees by a large paint brush; one partly worn is best. It must not be made too thin, but so that considerable of the snuff, &c., shall stick to the tree. The time to put it on is before the snow falls. Before putting it on, clear away all the grass and rubbish around the trees, quite to the ground; then put on the above composition a little warm, all around, from the ground three feet high, and if any roots are bare apply to them also.

If any of the quite young trees or grafts near the ground, the bark of which should be quite smooth, so that the composition would be liable to be washed off by rain, in that case, dip a strip of cotton in the composition, and wind around. This is the best remedy against mice I have ever tried, and it is effectual against rabbits or goats; nothing loves snuff but foolish men and women. I have known a number who have lost their lives by the use of it.

While writing about mice I will mention a mode I have tried many years, to prevent them from destroying grain in the barn. Take the leaves of stinking elder and scatter between each layer of grain; one bushel of leaves will be sufficient to spread on a layer thirty feet square. Perhaps sweet elder leaves would answer as well, but I never tried them. To prove the efficacy of the leaves, I will state, having my barn well filled with grain on both sides of the floor, and leaves on the whole, except perhaps half a load on the scaffold over the floor, on which we had pitched, to throw it higher; there might be five or six bushels of grain, wheat and oats scattered. This was all cut to pieces, while not a peck of grain was lost in all the other parts of the barn. The labor of gathering the leaves and putting on is but a trifle.

I also observe in the same number of your paper, one of your correspondents from Connecticut, shows the great importance of destroying the worms on apple trees, and his method of doing it. I agree with him that fruit trees should be kept clear of worms or they will soon spoil them; but his method of burning them off is all wrong; it is expensive, takes much time, and the limb is killed by the blaze. I have tried burning, shooting with powder, oil and other ways; but my practice for many years has been with very strong soap suds, which is cheaper, done much easier, quicker, and is more effectual. Take about one quart of soft soap, put it in near a pailful of hot soft water; stir and fit for use. Take a light pole long enough to reach the worms on the tree. Tie on the end a piece of thick cloth with a strong twine around the pole; let a part of the cloth project over the end of the pole a few inches. Then dip the swab in the soap suds, and wipe off the nest or bunch of worms; if they have got considerably grown wet the nest with the swab before wiping it off, otherwise many of the worms will fall and again crawl up to the tree; but if they are touched by the soap suds it kills them almost instantly, as sure as fire. As soon as they appear on the trees they should be destroyed; the trees need to be examined frequently until the worm winds up, as some hatch later than others, and one kind make no webs, but stick on the large limbs or the body of the tree in bunches, and move on the tree from east to south and west with the sun. These are hatched later than those that make nests or webs. Apply the swab to these carefully, beginning at the bottom of the worms, for if they are disturbed before being wet with the suds, they will instantly spin down and escape. If the worms are killed every year in the orchard and neighboring orchards, and from wild cherry trees, of which they are more fond than apple trees, few will be left to turn to millers to lay eggs for the next year's brood. But where neglected they soon increase so as in some instances to make a whole orchard as bare of leaves as in winter; in that case, there will be no fruit, and the trees will soon die.

JOHN T. ADDAMS, *Plattsburgh, N. Y.*

FRUITS IN SUMMER.

By an arrangement of Providence, as beautiful as it is benign, the fruits of the earth are ripening during the whole summer. From the delightful strawberry on the opening of spring, to the luscious peach of the fall, there is a constant succession of delightful ailments; made delightful by that power, whose loving kindness is in all his works, in order to stimulate us to their highest cultivation, connecting with their use also, the most health-giving influences; and with the rich profuseness of a well-attended fruitary, it is one of the most unaccountable things in nature, that so little attention is paid, comparatively speaking, to this branch of farming.

It is a beautiful fact, that while the warmth and exposures of summer tend to biliousness and fevers, the free use of fruits and berries counteract that tendency. Artificial acids are found to promote the separation of the bile from the blood, with great mildness and certainty; this led to the supposition, that the natural acids, as contained in fruits and berries, might be as available, and being more palatable, would necessarily be preferred. Experiment has verified the theory, and within a very late period, Allopathic writers have suggested the use of fresh, ripe, perfect, raw fruits, as a reliable remedy in the diarrhoeas of summer.

How strongly the appetite yearns for a pickle, when nothing else could be relished, is in the experience of most of us. It is the instinct of nature pointing to a cure. The want of a natural appetite, is the result of the bile not being separated from the blood, and it not remedied fever is inevitable, from the slightest grades to that of bilious, congestive, and yellow. "Fruits are cooling," is a bye-word, the truth of which has forced itself on the commonest observer. But why they are so, they had not the time, opportunity, or inclination to enquire into. The reason is, the acid of the fruit stimulates the liver to greater activity in separating the bile from the blood, which is its proper work, the result of which is, the bowels become free, the pores of the skin are open. Under such circumstances, fevers and want of appetite are impossible.

How to use FRUITS.—To derive from the employment of fruits and berries all that healthful and nutritive effect which belongs to their nature, we should

First—Use fruits that are ripe, fresh, perfect, raw.

Second—They should be used in their natural state, without sugar, cream, milk or any other item of food or drink.

Third—Fruits have their best effect when used in the early part of the day, hence, we do not advise their employment at a later hour than the middle of the afternoon; not that, if perfect and ripe, they may not be eaten largely by themselves, within two hours of bed time, with advantage, but if the sourness of decay should happen to taint them, or any liquor should inadvertently be largely drunk afterwards, even cold water, acidity of the whole mass may follow resulting in a night of distress, if not actual or dangerous sickness. So it is better not to run the risk.

An incalculable amount of sickness and suffering would be prevented every year if the whole class of desserts were swept from our tables during summer, and fresh, ripe, perfect fruits and berries were substituted, while the amount of money that would be saved thereby, at the New York prices of fruits, would in some families amount to many dollars, dollars enough to support an orphan child, or support a colporteur a whole year, in some regions of our country.—*Hall's New York Journal of Health for July.*

SULPHUR is a great institution. Mingled with iron it seriously weakens, and in fact the great problem in iron making is how to get rid of it, or to avoid introducing it with the fuel. Mingled with saltpeter it forms gunpowder, as symbolical of war as is the iron manufacture of the arts of peace. Mingled with India rubber it vulcanizes it into "a kind of vegetable metal," capable of becoming harder instead of softening with heat. Mingled with ore in the earth, it forms the rich "galena," the brilliant "pyrites," or the valuable sulphurets, but mingled with the gases which escape in smelting the same, it destroys vegetation and proves very mischievous generally.

Mingled with oil, a late patent assures us the product is a cheap gum, not unlike rubber, very valuable for its water-proofing qualities, and unrivalled as a protector for clothing or as a coating for porous and crumbling stone. Another inventor has discovered that melted with bone dust and again ground, it makes a most powerful fertilizer, and yet another that its fumes are just the thing for manufacturing jerked beef. Diffused to a certain extent in water, medical properties are developed, and dyspeptics rush headlong to "the Springs." Altogether, sulphur is fully entitled to be considered one of the prime staples which go to make a world.—*N. Y. Tribune.*

A STEAM PLOW FOR THE PRAIRIES.

In the *Prairie Farmer*, Chicago, Illinois, of the 10th inst., Bronson Murray proposes that a premium of \$50,000 be raised by subscription of one hundred persons, paying \$500 each, to be awarded for a perfected steam plow suited to farm use, and capable of performing the labor at an expense not greater than the average cost of performing the same work under the present system. He offers to be one of the hundred subscribers, and wishes the subscriptions secured to the Illinois State Agricultural Society, and the premium to be offered by it, under such rules as an Executive Committee may direct.—He asserts that there is not a farmer who cultivates 500 acres of prairie land, but can well afford to unite in the proposed subscription. He is confident that the steam plow would long since have been invented, had the capital of mechanics been equal to their inventive genius. In this opinion we cordially agree with him. It would be a most inestimable boon to farmers on the prairies if they could plow their stubble lands quickly after the crops are removed. The benefit of the steam plow to them would be quick plowing,—doing as much by one plow in one day as is now done by five or six with teams, which cannot be driven beyond a certain speed. When Mr. Murray came to the prairies fourteen years ago, there were no harvesting machines in use; but he felt confident they would soon be, and this determined him in settling in Illinois. His hopes have been realized regarding harvesting machines, and we trust they will also be realized respecting a prairie steam plow. Its working expenses may be as great as plowing by present modes, but if it does the work in less time, with fewer hands, (as we understand it), farmers will be satisfied.

At a meeting of the Farmers' Club, held at the American Institute, New York, on the 9th inst., Judge Meigs read an account of an English farm locomotive of 16 horse power. It weighed 9 tons, was stated to move easily over soft fields, and ascend pretty steep inclines. Its inventor had spent \$50,000 in making experiments, and he was new satisfied with its performance. It draws a gang of plows with ease. Our friends in Illinois would like a steam plow of much less weight than 9 tons; it is too heavy for general use, but no doubt smaller ones on the same principle can be constructed.

TREATMENT OF THE HAIR.

We may be venturing on a delicate subject perhaps, but the following brief extract from an old London Magazine, expresses our views too nearly to pass uncopied:

If the ladies will trust to our science on the subject of hair, in the first place we can assure them, most confidently, that so far is it from being that oils and pomatums increase the lustre of the hair, their effect is to diminish that polish which it naturally possesses; while, whatever gloss they may give to hair which is naturally dull, is false, and, like all other falsities, disgusting. Absolute cleanliness, by means of water alone, to commence, followed by brushing in the direction of the hair itself, in a dry state, is the true method of giving to the hair all the polish of which it is susceptible: and it is the effect of oils of all kinds to disturb or injure this; to say nothing of the disgust and necessary dirtiness of greasy hair. It is the effect of oils also to prevent it from curling; and this object is most effectually obtained, if without artificial means, by curling it when wet, and suffering it to dry in that state. And as it happens that almost all hair has a tendency to curl in one direction rather than in another, it is useful to study that tendency, so as to conform to it in the artificial flexure given. As to artificial applications, the whole of the so-called curling fluids are mere impositions; while one, which is really effectual, and at the same time inoffensive, is a weak solution of isinglass, by which a very firm and permanent form can be given to the hair.

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The fact is, that the whole is an imposture; oils, pomatums, and all; bear's grease, Macassar, and Rowland, huile, a la tuberoso, huile antique; huiles and pomades, divine or whatever else. Excepting so far as pomatum may be used for stiffening or compacting the hair into dirty or greasy masses, or oils for converting the easy and loose flow of nature's ornamental locks into nasty rat's tails, the whole is but a method of extracting money from vanity and fashion. It is but a rivalry of the stinking Hottentots, a relic of savage barbarism. As to the chemistry itself, if the ladies *will* make themselves greasy and disgusting, olive oil, alone, is the only oil that is necessary, hog's lard is the only pomatum; and if it is not sufficiently stiff, let it be stiffened to the taste by wax. It is an apothecary's plaster, or an apothecary's ointment, according to its consistence; it is

neither more nor less. The rest all perfume, nothing more; and the lady's maid, or the lady herself, who desires to have a greasy head, may save her money and her care, by sending down to the cook for a little oil from the flask, or a little lard from the bladder; or else to the apothecary, for a little simple ointment, preparing to her own fancy.

However, as long as female vanity exists, (and when will it cease?) we write in vain. The five hundred oils and pomatums will go on being made, and the angel who loves herself better than cleanliness, will go on making herself greasy and odorous. But it is all for the best, or how should trade flourish, how should money circulate from pockets that are too full, to pockets too empty?"

COL. MORRIS' SALE OF STOCK.

We promised some particulars in this number of the great sale of thorough bred stock by Col. Morris of Mount Forham, N. Y., but we find the details as stated in the American journals, too lengthy for our columns. We subjoin a short notice of the sale by Col. Johnson, Sec. of the N. Y. State Agricultural Society:—

The weather was all that could be desired, each day, and the attendance very large. The first day, in addition to the usual attendance upon such occasions, more than two hundred ladies from New York city and Westchester Co. were present, and the choice Short-horn cattle and South Down sheep of Col. M. were exhibited in his spacious grounds, and attracted, as they deserved, most glowing comments of admiration from the brilliant assemblage. Ladies unused to such exhibitions admitted that the attractions were worthy of attention—and we doubtless shall be favored at our State and County Exhibitions with assemblages like this.

The Short-horn and Devon bulls were sold the first day—the second day, the Devon cows, heifers and calves, South Down sheep, and Berkshire and Essex swine. I give you the price of bulls, cows, &c., and the aggregate amount of sales. The prices are most encouraging for breeders, and it shows that the farmers of our country not only appreciate good stock, but have the means of securing it. It is most gratifying to Col. Morris that he retires from a portion of his breeding (confining himself hereafter to Short-horns alone,) with a reputation certainly equal to any in the Union—and with a sale of stock at prices unprecedented, taken as a whole, in this country. I inclose you a list of the sales, in addition to the general summary, below.

Thirteen Short-horn Bulls.....	\$1,810
Two sold previous to public sale.....	675
Six Devon Bulls.....	1,350
Thirteen Devon Cows, Heifers and Calves.....	4,160
South Down Sheep.....	7,195
Berkshire Swine.....	970
Essex Swine.....	357.50
Suffolk Swine sold.....	177
Two barren Cows reserved to fatten.....	500
Three South Downs, do.	150
Three Berkshire and Essex Hogs	150

Total.....\$20,494.50

To CURE SCRATCHES IN HORSES.—Take three table-spoonfuls of common tar, two table spoonfuls of lard; put them in a vessel, and warm them gradually, until soft enough to mix thoroughly; then add a teaspoonful of gunpowder—mix it well with the tar and lard. Put this mixture on at night, after washing and drying the horses feet well. If the weather is wet, keep the horse in the the stable all night, or under shelter, to prevent the mixture from washing off. I have never seen a case that required more than one application to cure it perfectly.

Hoare, in his treatises on the vine, gives a striking exemplification of the instinct of plants. A bone was placed in the strong, but dry clay of a vine border. The vine sent out a leading, or tap-root, directly through the clay, to the bone. In its passage through the clay, the main root threw out no fibres; but when it reached the bone, it entirely covered it, by degrees, with the most delicate and minute fibres, like lace, each one sucking a pore in the bone. On this luscious morsel of a marrow bone would the vine continue to feed as long as any nutriment remained to be extracted.

THE FOOT ROT.

A. B. Dickinson, of Steuben county, New York, delivered an address some two years ago, before the Cortland County Society, in which, among other things, he spoke of his mode of curing the foot rot in sheep, and foul in the feet of cattle. He said:—

"I have had some experience for twenty-five years, with what I once considered as one of the most injurious diseases to cattle, and more especially to sheep. I now regard it as of little or no consequence, and I will trouble you with one of twenty-five year's operations, and to that end will take the year in which the disease was most malignant, which was in 1850. I purchased in that year more than 30,000 sheep, and had not less than 1,000 head of cattle upon my farm. During the pasturing season, more than one half of my sheep were affected with the rot, and because they were thus diseased, I purchased so largely. Men came all the way from Ohio to sell me their sheep, expressly on this account. My remedy is simple and plain, and my cure equally sure. I make a three cornered field, and at the pointed corner I make a lane; in this lane or neck of the field, I set a trough twelve feet long, twelve inches deep, of the same width, in which I fasten some scantling, substantially, flaring out, then cover the scantling with boards, so that only one sheep or steer can go through the trough at a time. In the trough I place 50 or 100 pounds of blue vitrol, fill and keep it as full of water as it should be, covering the liquid over with straw, and set the sheep or cattle marching through. By leading a tame ox the rest will follow. A good shepherd dog will start the sheep through, and one man with a well trained dog, can drive through 10,000 in one day. This vitrol will kill the disease. It will make and replace hoofs, or parts that have rotted off. With cattle, it is not so malignant as with sheep, but either may be cured without stopping their growth, if taken in time. If it has been of long standing, feed sulphur freely in your salt."

HINTS ON FEEDING MILCH COWS.—Thompson, in his work entitled "Experimental Researches on the Food of Animals," says that a cow, if fed for two days on an insufficient quantity of food as indicated by loss of weight, and diminution of milk, will require at least double that time to reach the condition from which it deteriorated, and the reason of this is obvious, because the particular starvation has caused it to lose a portion of the substance of its body, which requires a longer time to re-establish than to pull down.

This rule, he says, is applicable to the dietary of men as well as to inferior animals. An increase of labor should always be accompanied with an increase of food, both at sea and in prison. A short walk, for one confined to a solitary cell, calls for some augmentation of food. A slight increase of temperature, or the irritating influence of insects, will effectually diminish the milk of a cow, and indicates the propriety of increasing the amount of fodder.

During his experiments on feeding milch cows, he found that the milk of one day was derived from the food eaten the day previous, and that it takes at least sixteen hours for the digestive organs of the cow to fully take up all the nutritive matter which she feeds upon.

PHILOSOPHY OF LIGHT DIGESTION.—In a nietetic point of view, it would be well for weak stomachs to remember that wild birds are more nutritious than their domesticated cousins, and more digestible. But the white breast or wing of a chicken is less heating than the flesh of winged game. Other game—such as venison, which is dark-colored, and contains a large proportion of fibrine—produces highly stimulating chyle; and consequently, the digestion in an easy and rapid affair for the stomach. But, though the whiter meats be detained longer in the stomach furnish less stimulating chyle, and be suffered to run into acetous fermentation, their lesser stimulating quality may recommend them when the general system is not in want of a spur. Meats are wholesome or otherwise, less with reference to themselves than to the consumer. "To assert a thing to be wholesome," says Van Swieten, "without a knowledge of the condition of the person for whom it is intended, is like a sailor pronouncing the wind to be fair, without knowing to what port the vessel is bound."—*Dr. Doran.*

FATTENING LAMBS.—A writer in the *Maine Farmer* who had been in the habit of feeding grain to his ewes, for the purpose of fattening his lambs, without much visible effect, at last resolved to try feeding of the grain to the lambs themselves, and accordingly made troughs and filled them with oats, which he keeps away from the sheep, but so situated that the lambs alone can get at them. In this way he has lambs at ten weeks old which dress sixteen pounds in weight.

COAL.—It is estimated that the extent of the Cumberland coal, including Westmoreland and Yorkshire, has an area of some 260 square miles. It has been worked for a lengthened period, and does not give any signs of exhaustion. But the Cumberland coal field is one of the smallest, both in extent and thickness, for it is only the 1-60th of the whole area of coal in the British isles: and while its workable thickness is only some seventeen feet, the several seams of the South Wales coal field are 100 feet thick, the thickness of the Lancashire coal is 150 feet, and in some of the Scotch coal fields there is a workable thickness of 200 feet. It has been calculated that the single magnificent coal field of South Wales, of 1,200 square miles, would supply England with fuel for at least 2,000 years, after the whole of our English mines are worked out. After that I fancy you begin to breathe a little more freely, but a tithe has not yet been told, for to the British coal fields of 12,000 square miles, you may add for the rest of Europe 10,000, for British North America 18,000, and for the United States of America the really astonishing extent of 113,000 square miles, almost untouched, and the whole together, as yet, yielding only about one-half of what the British islands are doing alone. Besides an immense coal range on the eastern coast of Australia, the extent of which is unknown, may reach beyond all conception, and the importance of which in the future history of our race may come to be truly marvellous.

FIBROUS SLABS.—The dome of the new reading-room at the British museum, now in course of completion under the direction of Mr. Sidney Smirke, is being lined with slabs or sheets of fibrous material, for which a patent has been obtained, and which, combining many of the properties of wood, is adapted to almost every purpose to which the various descriptions of wood are applied. It is also applicable to many purposes for which marble, slate, lath and plaster, or internal brickwork are now used; and the price, we are told, will not average more than one half the cost of wood-work, or other materials now in use. This fibrous material can be manufactured into sheets or slabs of any required thickness length, or width. They are now made in sizes of 13 feet by 7 feet; but these dimensions may be greatly increased. It appears to be uninflamable; a non-conductor of heat or sound; free from dry rot, shrinking, expanding, splitting, or winding; easily worked or bent, and is applicable for large panels, ceilings, floors, and partitions. Each panel at the British Museum, composed of three pieces, is 22 feet long by 11 feet 6 inches wide; and these in their spherical form, are raised from the ground to a height of 100 feet, and fixed in one piece to the roof. We have probably said enough to show that this new material deserves the attention of all who are engaged in building operations.—*The Builder*

TO CLEAN THE FACE OF SOFT MAHOGANY, OR OTHER POROUS WOOD.—After scraping and sand-papering in the usual manner, take a sponge and well wet the surface to raise the grain; then take a piece of fine pumice-stone, free from stony particles, and cut the way of the fibres; rub the wood in the direction of the grain, keeping it moist with water; let the work dry; then if you wet it again, you will find the grain much smoother, and it will not raise so much; repeat the process, and you will find the surface perfectly smooth, and the texture of the wood much hardened; by this means, common soft Honduras mahogany will have a face equal to fine Hispaniola. If this does not succeed to your satisfaction, you may improve the surface, by using the pumice-stone with cold-drawn linseed oil, in the same manner as you proceeded with water; this will be found to put a most beautiful, as well as durable face to your work, which may then be polished or varnished.

CURRENT DUMPLINGS.—Pick and wash a pound of currants, dry them, and lay them on a plate before the fire. Chop a pound of suet very small and put it into eight spoonfuls of flour, with two tea-spoonfuls of salt, and three of ginger; now add the currants and mix all well together, then beat up four eggs with a pint of milk, and add this by degrees to the other ingredients, and make it into a light paste; roll it up into balls as large as a turkey's egg, with a little flour; flatten them a little and put them into boiling water; move them gently, that they may not stick together. Half an hour will boil them.—*Germantown Telegraph*.

TO PRESERVE GOOSEBERRIES.—Take full grown gooseberries before they are ripe, pick them, and put them into wide-mouthed bottles, cork them gently with new, soft corks, and put them in an oven, from which the bread has been drawn; let them stand till they have shrunk nearly a quarter; then take them out and beat the corks in tight, cut them off level with the bottle, and rosin them down close.—Keep them in a dry place.

HOW TO BATHE ON A SUMMER'S DAY.—Many erroneous notions prevail respecting the use and properties of the warm bath. To many persons the idea of submersion in warm water, on a summer's day, would be preposterous; but if it be rationally considered, it will be found that the warm bath may be taken with equal or perhaps greater benefit in summer than in winter. During hot weather, the secretions in the skin are much increased in quantity, and consequently a greater necessity exists that it should be kept perfectly free from obstructions. Another prevailing error respecting the warm bath is, that it tends to relax and enervate the body; for experience has sufficiently proved the fallacy of the opinion, and many physicians have prescribed its use to patients laboring under debility from disease, none of whom experience such effects, but have all felt invigorated, and mostly restored to health and strength. Many persons are deterred from using the warm bath, especially in winter, from fear of catching cold; but this fear is groundless, for it has often been found that the warm bath, by increasing the circulation on the surface of the body, render it more capable of withstanding the effects of cold than it otherwise would have been.

CURRANTS FOR WINE MAKING.—The red currant (or red Dutch) for wine making, gives a higher flavor than the white, and is considered a better producer. One acre of currant bushes, set 4 feet apart, would in due time produce 25 bushels of fruit, and might be made to grow 50 bushels, that depending upon the soil and the manner of cultivation. Three gallons may be obtained from a bushel of good ripe fruit. Make the wine in the same manner that you would a barrel of good sweet cider, with the addition of from 3 to 4 pounds of sugar to the gallon, fermenting off the pomace until it is entirely clear, after which it should be racked off into tight barrels and there remain any desirable time to become ripe and firm. As to the price of the article in market, the dependent saith not.

TO PREVENT JAMS FROM GRAINING.—A correspondent informs us that to prevent Jams, Preserves, etc., from graining, a teaspoonful of cream of tartar must be added to every gallon of the jam or preserve.

MILK REGULARLY.—Cows should be milked at regular intervals of twelve hours, as near as possible, especially during the hot summer months. Cows then feed mostly in the morning and evening, choosing to rest in the cool shade through the middle of the day; hence they should be milked and turned out before sundown.

CANADA THISTLES AND WHITE DAISIES.—Willard Day, Esq., of Brooklyn, informs the *Homestead* that these nuisances may be destroyed by one mowing, if done during a warm rain. Mr. Day has satisfied himself of this by repeated successful experiments. The principle of its action, no doubt, lies in the decay of the roots consequent upon the filling of the hollow stems with water.

COLZA.—The introduction of Colza, as an oil producing plant is being agitated among some agriculturists at the East. It is said that the increasing consumption of oils of all kinds, and the great rise in their price, render it desirable that rape and colza should be tried as plants from which large profits may be secured, both for their oil and use in feeding and fattening stock.

The Maine Cultivator says:—"When a cucumber is taken from the vines, let it be cut with a knife, leaving about the eight of an inch of the cucumber on the stem, then slit the stem with a knife from its end to the vine, leaving a small portion of the cucumber on each division, and on each separate slit there will be new cucumbers as large as the first. Those wishing to raise large quantities of this article for pickles, will do well to try the experiment."

SALT FOR WHEAT.—Theodore Perry says, in the *Prairie Farmer*, that he sowed one and a half bushels of salt upon one-half of a ten acre field, just after seeding it with Spring wheat; and the result was, that the salted portion was ready for the sickle five days earlier than the unsalted part; and not a particle of rust, scab, or smut could be found, and the increase of crop he estimated at five bushels per acre.

FRUIT.—A cultivator of fruit, whose good example is referred to in the *New England Farmer*, keeps a circle of several feet around the roots of every tree clear of grass, and enriches it with chip manure, and several other kinds of fertilizing substances. He has very large crops of most excellent fruit, which he states, brings him more money than any of the neighbouring farmers obtain from all their crops.

TREES.—If now, in regard to any given tree, or kind of tree, it be asked, "How long does it naturally live?" the proper answer will be (contrary, however, to the common belief), that there is no set limit to the age it may attain, or the number of years it may live, and no actual limit other than that resulting from purely accidental or extraneous causes; because, according to the theory now advanced as to the nature of trees, there is no natural limit to the annual propagation from buds of the individual plants composing the tree. According to this view, the observation of Richard, to wit, that the cedars of Lebanon appears to be "indestructible," is perfectly intelligible, involves no violation of the principle that all living beings are subject to the law and the dominion of death, and is applicable, besides, to all trees. And if it be asked, in respect of any given tree, "What is the size to which it naturally grows?" the proper answer will be (contrary, again, to the popular belief,) that there is no determinate limit thereto, and no actual limit, except from such extrinsic causes as may prevent the formation of buds, or the evolution from them of new plants. If, however, the like questions be asked, not in respect of individual trees, but of individual tree plants (as these may well be called), of the oak, the elm, the fir, viewed simply as plants, and independently of their parasitic relations to others of their particular species and community, very different answers must be returned. The answer to the first question will be, that they live, one and all of them, only a single year; and that, as regards their longevity, they stand on precisely the same footing with confessedly annual plants. And in answer to the second question, it may always suffice to observe, that as they all attain their maturity within the year, so the natural size of any of them may be accurately determined by observation of the seedling plants of its kind in the forester's nursery, or of the yearly shoots issuing from the buds of any healthy tree of its kind; and, in general terms, that while subject to some variety, it does not in any species exceed a few inches, or at the utmost a very few feet, in length.—*Alexander Harvey.*

AGRICULTURAL ODE.

BY WM. C. BRYANT.

Far back in ages
 The plow with wreaths was crowned,
 The hand of kings and sages
 Entwined the chaplet round,
 Till men of spoil
 Disdained the toil
 By which the world was nourished,
 And blood and pillage were the soil
 In which their laurels flourished;
 Now the world her fault despairs—
 The guilt that stains her story,
 And weeps her crimes amid the cares
 That formed her earliest glory.

The throne shall crumble,
 The diadem shall wane,
 The tribes of earth shall humble
 The pride of those who reign,
 And war shall lay
 His pomp away;
 The fame that heroes cherish,
 The glory earned is deadly fray
 Shall fade, decay and perish.
 Honor waits o'er all the earth,
 Through endless generations—
 The art that calls the harvest forth,
 And feeds the expectant nations.

Mr. John Spencer, of Whitby, whose South Downs was so much admired at the Cobourg Fair, informs us that he has just received from England a supply of the latest improved breeds of Hampshire Down Sheep, selected with much care and expense by his son in England. They were purchased from the celebrated flock of William Taunton, Esq., who has gained many First Prizes at the Meetings of the Hampshire Agricultural Society, for five or six years past, and who offers to show 200 Hampshire Down Lambs, against any in England.

NOTICE.—We will send, during this month, accounts to the various Agricultural Societies who are indebted to us, and we hope they will meet with a ready response. The Government Grant has been paid to most of the County Societies; and there can be now no excuse for delay in liquidating the debts of the Societies. We have to pay cash for our paper and printing, and trust that our friends will see the necessity of promptly paying their accounts.

ERRATA.—We regretted to observe several typographical errors in the communication of the Hon. A. Ferguson published in our last. It was not seen by the Editor, and the writing of the hon. gentleman being a little affected by his age, the mistake was not detected by the proof-reader. The Kyloe breed of Cattle is, throughout, called *Kylos*, which those acquainted with the subject will at once see is an error of the press. The other mistakes are less important.



BUREAU OF AGRICULTURE AND STATISTICS,
Toronto, 25th July, 1896.

TO EMIGRANTS AND OTHERS SEEKING
LANDS FOR SETTLEMENT.

THE PROVINCIAL GOVERNMENT have recently opened out three great lines of Road, now in course of completion, and have surveyed and laid out for Settlement the Lands, through, and in the vicinity of which these Roads pass.

The Roads, as advertised by the Agents of the Government, appointed to the respective localities to afford information to the Settler, are known as "the Ottawa and Opeongo Road," "the Addington Road" and "the Hastings Road."

THE OTTAWA AND OPEONGO ROAD

Commences at a point on the Ottawa River, known as "Ferrall's," a little above the mouth of the Bonchere River, and runs in a Westerly direction, passing through the northerly part of the County of Renfrew.

It is intended to connect with this road a projected line of road known as "Bell's Line" leading to the Lake Muskako, and Lake Huron, by a branch which will diverge from the Opeongo Road in the Township of Brudnell, at a distance of about 53 miles from the River Ottawa, forming with "Bell's Line," a great leading road, or base line from the Ottawa to Lake Muskako, 171 miles in length, passing through the heart of the Ottawa and Huron Territory, and opening up for a settlement a vast extent of rich and valuable land.

This road, and the country through which it passes, now open for settlement, is easily accessible, and the Agent for the granting of Lands in this district is Mr. T. P. French, who resides at Mount St. Patrick, near Renfrew, on the Opeongo Road, a few miles from the Lands which are to be granted. To reach the section of Country under Mr. French's charge the Settler must go from Montreal up to the Ottawa River to a place called Bonchere Point, and thence by land some twenty-five or thirty miles westward to the Township of Grattan, in which Mount St. Patrick is situated.

THE ADDINGTON ROAD,

Commencing in the Township of Anglesea, in the northern part of the County of Addington near the Village of Flint's Mills, in Kaladar, runs almost due north to the River Madawaska, a distance of 55 miles—and is to be continued thence for the distance of 25 miles till it intersects the Ottawa and Opeongo Road.

The Agent for the granting of the Land in this district is Mr. E. Perry, who, for that purpose, is now resident at the Village of Flint's Mills. The outlines of five townships of very superior land are always surveyed and ready for Settlement within the limits of the Agency, lying north of Lake Massanoka, and between it and the River Madawaska. The Townships are called respectively Abinger, Denbigh, Ashley, Edingham, Anglesea, and Barrie.

The direct route to this section is by way of Kingston, Canada West, thence to Napanee, either by land or steamboat, and thence north to the Township of Kaladar, and the Village of Flint's Mills where Mr. Perry resides.

THE HASTINGS ROAD,

Almost parallel to the Addington Road, and at a distance West from it of about 32 miles is the Hastings Road. This Road beginning at the northern part of the County of Hastings, and running a distance of 74 miles, almost due north, also intersects the Ottawa and Opeongo Road and its extensions.

The Government Agent is Mr. M. P. Hays, who resides at the Village of Hastings, lately called Madoc, about 28 miles north of the Town of Belleville. The Road between these places is in good order. The land to be granted by the Crown under this Agency extends from 15 to 70 miles north of the Village of Hastings. The Road through this large extent of land is passable for 40 miles, and money is

now being expended to extend it 30 miles further, so that Settlers can get in and out without difficulty, and find a good market for surplus produce, as well as convenient facilities for bringing in whatever supplies they may require—abundance of which can be had at the Village of Hastings, where the Government Agent resides.

The direct way to reach this section, which is easily accessible, is by Kingston, Canada West, thence by Steamboat up the Bay of Quinte to Belleville, 56 miles—and thence by a good road to Hastings, 28 miles.

In order to facilitate the settlement of the Country, and provide for keeping in repair the roads thus opened, the Government has authorized Free Grants of Land along these Roads, not to exceed in each case One Hundred Acres, upon application to the Local Agents, and upon the following

CONDITIONS:

That the settler be eighteen years of age.

That he takes possession of the Land allotted to him within one month, and put in a state of cultivation at least twelve acres of the land in the course of four years,—build a house (at least 20 by 18 feet) and reside on the lot until the conditions of the settlement are duly performed; after which accomplishment only shall the settler have a right of obtaining a title to the property. Families comprising several settlers entitled to lands, preferring to reside on a single lot, will be exempted from the obligation of building and of residence, (except upon the lot in which they live) provided that the required clearing of the land be made on each lot. The non-accomplishment of these conditions will cause the immediate loss of the assigned lot of land, which will be sold or given to another.

The road having been opened by the Government, the settlers are required to keep it in repair.

The Local Agents, whose names and places of abode have already been given, will furnish every information to the intending settler.

The Log-house required by the Government to be built, is of such a description as can be put up in four days by five men. The neighbours generally help to build the Log-cabin for newly arrived settlers, without charge, and when this is done the cost of the erection is small; the roof can be covered with bark, and the spaces between the logs plastered with clay, and white-washed. It then becomes a neat dwelling, and warm as a stone-house.

The lands thus opened up and offered for settlement, are, in sections of Canada West, capable both as to Soil and Climate, of producing abundant crops of winter wheat, of excellent quality and full weight, and also crops of every other description of farm produce grown in the best and longest cultivated districts of that portion of the Province, and fully as good.

There are, of course, in such a large extent of country as that referred to, great varieties in the character and quality of land—some lots being much superior to others; but there is an abundance of the very best land for farming purposes. The Lands in the neighborhood of these three roads will be found to be very similar in quality and character, and covered with every variety of Timber—some with hard wood, and some with heavy pine.

Water for domestic use is every where abundant; and there are, throughout, numerous streams and falls of water, capable of being used for manufacturing purposes.

The heavy timbered land is almost always the best, and of it, the ashes of three acres—well taken care of and covered from wet, will produce a barrel of Potash, worth from £6 to £7 currency. The capital required to manufacture Potash is very small, and the process is very simple and easily understood.

The expense of clearing and enclosing heavily Timbered Lands, valuing the labor of the settler at the highest rate, is about Four Pounds Currency per Acre, which the first wheat crop, if an average one, will nearly repay. The best timber for fencing is to be had in abundance.

A Settler on these lands, possessing a capital of from £25 to £50 according to the number of his family, will soon make himself comfortable, and obtain a rapid return for his investment. The single man able and willing to work, needs little capital, besides his own arm and axe—he can devote a portion of the year to clearing his land, and in the numerous lumbering establishments, he can, at other seasons, obtain a liberal remuneration for his labor.

The climate throughout these districts is essentially