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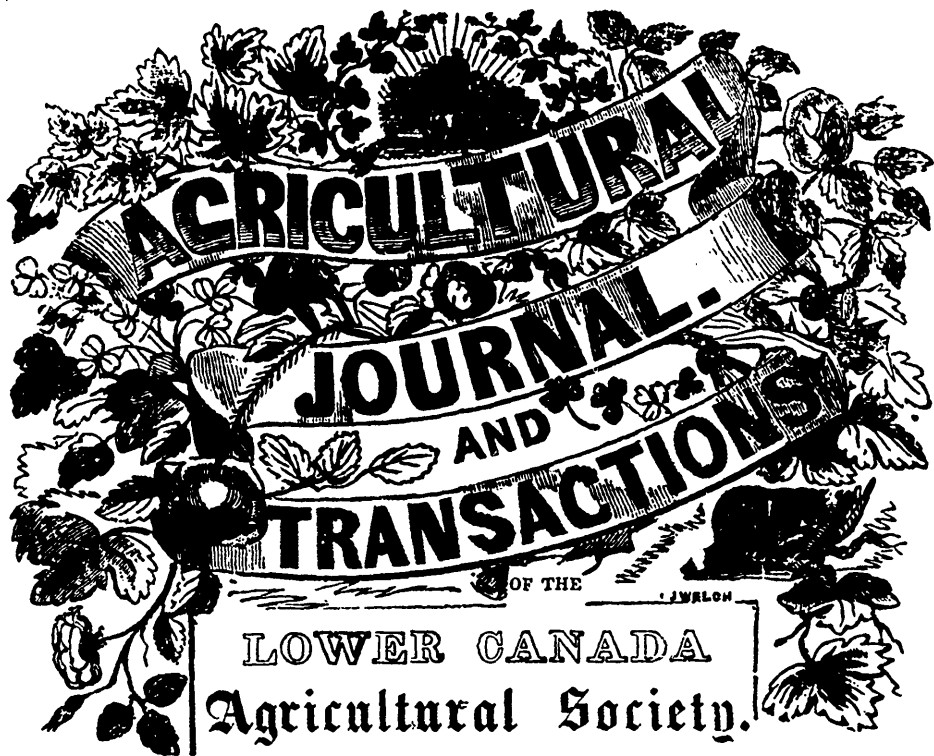
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No. 8.

TIME FOR CUTTING WHEAT.

It is a prevailing opinion that wheat should be cut before it is perfectly ripe, and there cannot be any doubt that it is the best plan to cut it before it is at full maturity, as the grain makes a better sample, and the danger of loss by shedding is in a great degree avoided. We, however, would not recommend that wheat should be cut a fortnight before it would be ripe. We have seen it stated that in England it is frequently cut a fortnight before it would be thoroughly ripe, and that it is found to be the best time to do so, and the same course has been recommended here. In the first place, a fortnight has a very different effect in ripening grain in England and in Canada. We have seen wheat in the latter country change from a green state to perfect ripeness in that space of time; but in England the same number of days would not produce any thing like the same effect on a crop. It requires to make allowance for the dif-

ference of climate in these cases. A crop of wheat or any other grain that would be cut in Canada a fortnight before it would become perfectly ripe, would not be of much value, and in the case of wheat, would act as injuriously upon it as rust would do. It should be sufficient to recommend generally to farmers to cut down their grain crops before they would be perfectly ripe, but to have it to their own judgment to determine what the state of ripeness would be when it would be prudent to cut it. Three or four days will make a great difference upon a crop here, when nearly at maturity; and in very few instances would it be safe to cut a crop here more than three or four days before it would be perfectly ripe? Circumstances alter cases. When grain is lodged, it may be better to cut it several days before it would be ripe, but a fair standing crop may be safely allowed to stand until it is very nearly at maturity.

SUGAR MAPLE TREE.

(From the *British American Journal of Medical and Physical Science*, July 1861.)

Examination of the Sap of the Sugar Maple Tree, the Acer Saccharinum of Linnaeus, with an account of the preparation of the Sugar. By GEORGE D. GIBB, M.D., Lecturer on the Institutes of Medicine, St. Lawrence School of Medicine, Montreal: Honorary Member Addisonian Literary Society of Montreal; Corresponding Member Literary and Historical Society of Quebec, &c.

One of the most noble trees, and one of the most common and well known in this country is the *Maple*. It may truly be designated the pride of our forests, contrasting strongly as it does with its variegated leaf, with the stately and lofty pine, which is equally abundant and numerous. The maple-leaf has not been inaptly chosen as the national emblem of the French Canadian, and is the badge worn by the members of the Society of St. Jean Baptiste, the Patron Saint of the Franco-Canadians.

A few observations upon the sap and sugar obtained from the maple, which were suggested by an experimental examination of the sap itself, I venture to hope may not prove uninteresting.

Professor Lindley mentions 3 genera and about 60 species, belonging to the natural order *Aceraceae*. They are spread over Europe, the temperate parts of Asia, the north of India, and North America. The order is unknown in Africa and the Southern hemisphere. "The species are only known for the sugary sap of the *Acer Saccharinum* and others, from which sugar is extracted in abundance, and for their light useful timber."

Canada and the United States (especially New York, Pennsylvania, Western Counties of middle States, and the banks of the Ohio,) abound in the greater number of the species mentioned, and they extend further northwards as far as the Hudson's Bay Company's territories.

In Canada, the hard, rock, or birds-eye maple, and the soft or curly maple are well known. The true sugar maple, the *Acer Saccharinum* of Linnaeus, is the tree that especially yields the largest quantity of sap, and furnishes the best sugar. This tree is the one commonly known as the hard maple, and is that which furnishes the best fire-wood. Large tracts of land in the Ottawa district are covered with it; it is found in great numbers in the Eastern townships, where large forests miles in extent contain nothing else, and in other places it is mixed with various trees; there is scarcely a spot in Lower Canada where it is not to be met with, and in every place is the manufacture of sugar known and practised.

* Lindley's vegetable Kingdom.

† Ure's Dictionary of Arts and Manufactures.

Captain Marryatt has stated that there were trees enough on the shores of Lakes Huron and Superior to supply the whole world with sugar.

Mr. James E. Campbell, who has had much experience on this subject, informs me, that the manufacture of a syrup from the maple tree, was known to the Indians at the time the country was first settled by the French; and it is supposed, on good authority, that the knowledge of its manufacture was first obtained from them. To this day, in the north-west territories belonging to the Hudson's Bay Company, this sugar is made by the squaws in the form of little round pallets, made from pouring the thickened syrup on chips, flattening them with the hand, and leaving the mark of the three fingers on its surface.

In the United States the manufacture of the sugar was first attempted about 1752, by some farmers of New England, as a branch of rural economy. This gradually spread wherever the tree was known. Now it forms an article of food throughout a large part of the country districts of the Lower Province, and even in many parts of the Upper, more particularly along the banks of the Ottawa. When travelling in that direction, I have been furnished with it, in a crushed form, for my tea; and on asking if muscovado sugar would not be cheaper and preferable, was told that almost every farmer prepares annually sugar enough for the year's consumption of his family, and often has a surplus quantity for sale. And as to its cheapness, it is sold from 2s. to 3½d. per pound, sometimes lower, whilst very common muscovado can never be bought for less than 4½d. to 5d. per pound. It has some advantages also over muscovado, of which I shall presently speak, and is superior to it when properly made.

In the month of March, I procured some fresh sap from a hard maple tree, and resolved to apply the various means for detecting the presence of sugar, and to estimate the amount yielded in a given quantity.

Its color was that of pure water, with the merest shade of opalinity. The taste was moderately sweet, and resembling the *eau sucrée* of the French. Its specific gravity 1.114, at the temperature of 60° Fahrenheit. Neutral, possessing neither an alkaline nor acid reaction.

Five fluid ounces, evaporated to dryness in a glass vessel, yielded 34 grains of residue, of a pale straw color and perfectly transparent, equal to 376 grains, or a little over ¾ of an ounce to the pint of 50 fluid ounces. The residue was almost entirely pure sugar, and contained traces of chlorides, phosphates, and sulphates.

From the lowness of the specific gravity in comparison to the fluid of diabetes mellitus, I did not expect that the results would have been marked in the application of rea-

gents, but the following were those obtained.

Moore's Test.—Equal parts of the sap and caustic potass were boiled for about two minutes; the fluid assumed a dark oily yellow or sherry color, which it retained. This "dark sherry color," will at any time result by boiling grape sugar, potash and distilled water, as shown by experiments in the *Lancet* by Dr. Hassal.*

Trommer's Test.—A solution of the sulphate of copper was added sufficiently to give the sap a light blue color, a deposit of phosphate of copper occurred; † caustic potass was then added in excess, when a heavy precipitate of hydrated oxide of copper fell, which became re-dissolved in the excess of alkali, forming a dark-blue solution. On heating to ebullition, a most marked deposit of red sub-oxide of copper fell.

Cappezuoli's Test.—A few grains of blue hydrated oxide of copper were added to some of the sap, in a conical glass vessel, and the fluid rendered alkaline by adding caustic potass. The fluid assumed a reddish tinge, and after the lapse of a few hours the edge of the deposit of oxide obtained a yellow color, which extended throughout the entire mass from the reduction of the oxide to a metallic state.

Muneme's Test.—A few drops of sap were placed on a strip of white merino, that had been previously acted upon by a strong solution of chloride of tin, and then dried. On exposing it to a temperature of from 260° to 300° Fahrenheit, it immediately produced a dark-brown spot. This is one of the most convenient and delicate tests that has been as yet discovered, and one of easy application, for strips of this saturated cloth may be carried about like the ordinary test papers. "By the help of this test the presence of sugar in the urine can be readily detected. Ten drops of diabetic urine, diffused in half a pint of water, would in this way yield a brownish black spot. Ordinary urine, urea and uric acid, produce no result of this kind."**

Nitrate of Silver Test.—On adding a few drops of a solution of nitrate of silver, nothing was observed, but on adding some caustic ammonia, a white precipitate was formed, which was reduced by a very slight heat, the metallic silver attaching itself to the surface of the vessel.

All these tests were satisfactory and clearly demonstrated the presence of sugar. Some specimens of sap, however, are richer than others in the amount of sugar present, and consequently possess a higher specific gravity. This fact is well known to some of the sugar-makers.

On reference to many standard works of

authority, † I find quotations from a paper published many years ago in the American Philosophical Society's Transactions, ‡ by Dr. Rush, giving an account of the sugar maple tree. All the tests here applied, were at that time unknown, and although I have been unable to refer to the original paper, I find that no examination of the sap itself was made.

Dr. Rush has described the process of manufacture in the States, which is a very simple one, as practised by the farmers.

In Canada the sap is procured and manufactured into sugar as follows:—

The tree is bored on its south side with an augur, or a brace and bit, or a gouge, or rounded chisel, until the hole is nearly two inches deep, in some cases it is much less, the diameter being from $\frac{3}{4}$ to $1\frac{1}{4}$ inches. Care must be taken that the alburnum or white bark is not penetrated more than half an inch, as experience has proved that a greater discharge of sap takes place at this depth than any other. It is neatly cleaned out, and a small and thin pine or cedar spile, or spout, is then tightly introduced to direct the flow of sap into the bucket or trough. In some parts of Lower Canada, instead of boring a hole, the *habitans* chop a pretty large opening with a hatchet, this would seem to answer well in obtaining the sap, but it very much injures the tree and frequently destroys it. When the sap ceases running on the south side, the tree is again bored on the east or west side, seldom on the north side, as that side furnishes but a small quantity of sap, supposed to be owing to the want of a warm atmosphere from that quarter.

Some trees have two openings made at the same time, a few inches from each other; others have holes in the most convenient place, without reference to the points of the compass.

Mr. Dillon, of Longue Pointe, who has kindly replied to a communication of mine upon the subject, states that there are two kinds of drifter besides the spout, one made of a piece of bent hoop, and the other a flat piece of cedar; the former made so as to fit the incision of a gouge, and the latter driven into the tree after tapping with an axe. He considers the tapping by the brace and bit as preferable to either the gouge or the axe, as the opening may be plugged at any time to prevent the entrance of air, which might injure the tree.

The age of the tree tapped is uncertain, but the diameter of the trunk must not be less than 9 or 10 inches; it attains its full growth in about 20 years, and is then from two to three feet in diameter.

Dr. Rush states that tapping does not injure

† Ure's Dictionary of Chemistry.—Thomson's Organic Chemistry. Ure's Dictionary of Arts and Manufactures.

‡ Vol. 3. p. 64.

* March 8, 1851.

† Traces of phosphates were present.

** London Medical Gaz, April 5, 1850.

the tree, but on the contrary it affords more syrup, and of a better quality the oftener it is tapped. A single tree, he says, has not only survived, but flourished after tapping for forty years. This fact is confirmed by Mr. Campbell, who informs me that in a forest of maple trees, where the trees are even full grown, when tapped for the first time, the sap is large in quantity, not so sweet, and does not yield on the average scarcely 2lbs. per tree; but the oftener tapping is performed, the stronger and richer the sap becomes, the tree seems to improve, and the amount of sugar yielded is very much larger. I have seen trees, full grown, quite healthy and flourishing, that have been tapped for upwards of sixty years, and apparently uninjured.

The sap scarcely varies in color during the time it is running from the tree; it is clear and limpid, inclining somewhat to amber or straw color. It is, however, very often perfectly colorless like water, and this will depend upon the presence of more or less sugar in solution, the darker the color, the higher the specific gravity, the sweeter the sap, and consequent richness in sugar. The richness and the quantity of the sap are influenced also by a variety of causes. A very important one is moisture of the earth: if the tree is on a hard, dry and elevated soil, the sap will not be so abundant, but it will be richer and of a yellow color; if it is in a low marshy situation, there will be a greater flow of sap, but very poor in its amount of sugar. Richer sap is also yielded in cold frosty weather, than in damp rainy weather. Hence the season chosen for tapping the trees, are the months of February and March, before the changes in the seasons occur. When the nights freeze hard and the sun comes out hot during the day, the farmers anticipate a good flow of rich sap; but if the night is warm with a warm wind in the day time, the sap they say is spoiled. A sudden thaw, such as occurred this last spring, ruins the sugar making. This was much felt in the Eastern Townships.

Each tree yields on an average about 5 or 6 buckets of sap, and a bucket-full of sap is estimated to yield over half a pound of sugar.* Mr. Campbell states that the sap from an old tree that has been tapped 18 or 20 years, will yield a pound a bucket. Many persons are satisfied with an average of 3lbs. of sugar from each tree, although there are instances, as Dr. Rush states, of as much as 20lbs. being furnished from a single tree. It would appear that sugar orchards improve if not tapped every year; my friend, Mr. H. J. Thompson, tells me that a rest does the trees good, and consequently they yield a larger quantity than if tapped every year.

Almost every farmer has his own method

of preparing the sugar, but those who prepare it on a large scale, do so in a very scientific manner, with great care and produce a better sugar. The sugar may be obtained in two forms from the sap, one in the form of a solid cake or lump sugar, the other in that of a soft, granulated or muscovado grain.

The sap (being previously strained through a cloth,) is poured into iron pots or kettles,* varying in dimensions, according to the size of the sugar bush, but, more generally containing from twelve to fifteen or twenty gallons. The boiling is rapidly performed until the sap is of the consistence of syrup, with the addition of a little butter, to prevent it from boiling over, when it is moderated, and gradually discontinued until resembling thin treacle or molasses, being carefully skimmed as the scum forms on the surface. A slow fire is now used to bring it into a state fit for making the cakes of sugar, and this is known by pouring a few drops in a little snow or ice, and, if possessing the least gritty taste, it is immediately run into moulds, forming the cake sugar as generally seen in commerce.

If it is desired to obtain it in the form of soft or granulated sugar, the boiling is continued a very short time longer, until it is a trilling degree more gritty to the taste than the last, when it is removed from the fire, and is then constantly stirred with a wooden ladle or that stick until it becomes quite cold, when it is obtained in the form of soft or crushed sugar. The more it is stirred, the whiter, drier, and clearer in color it becomes; this is produced by the evaporation of the remaining water, which goes on rapidly, and which prevents the cohesion of the particles which is so strong in the cake sugar. After it is thus prepared, it is placed in barrels or tubs, laid upon parallel sticks, with one or more holes bored at the bottom to permit the flowing out of the refuse syrup, very like honey in color and consistence, and which still further produces a dry sugar, being similar in this respect to Muscovado. Some manufacturers use various substances to clarify and render the sugar whiter, such as slaked lime, a few eggs, and some milk.* In this way, the sugar is obtained almost perfectly colorless, and in the form of minute crystals or grains, perfectly clear and transparent, and free from any impurities whatever. From this form of granulated maple sugar, a superior kind of loaf sugar has been manufactured in the States, not in any way inferior to the loaf sugar of Europe.

To test the superiority of Maple over Cane

* Copper vessels are sometimes used, and also vessels lined with earthenware, which are superior to those of pure metal.

* The Indians are said to clarify their sugar, in some instances, with the manure of dogs, which contains much phosphate of lime.

* An ordinary bucket contains $2\frac{1}{2}$ to 3 gallons.

or Muscovado Sugar, I instituted the following experiment:—

Some *Brown Muscovado Sugar* was placed at the bottom of a wine-glass, which was then filled with water, and allowed to stand 24 hours without disturbance; a scum formed on the surface.

Some *Maple Sugar* a year old, was pounded and treated in the same way; no scum formed on the surface.

The fluid and scum of the *Muscovado* were examined under the microscope, when large numbers of dead *acari* or *sugar insects* were found, many fragments of their bodies, numerous ova and young *acari*, and sporules of the *sugar fungus* in vast abundance; a few fragments of the *sugar cane* were present, showing the cells of the *parenchyma*, and a very few of the *woody fibres*.

The fluid of the *Maple Sugar* was examined, and *nothing whatever* was discovered worthy of observation.

This experiment is worth a host of arguments in favor of the superiority of the other. All the *brown muscovado sugars* contain this noxious insect, but the colorless muscovados are quite free from it. If granulated maple sugar can be obtained cheaper, or even at the same price as muscovado, and possessing a purity not to be reached by the other, is it not to be preferred? I shall not make any remarks upon the natural history of the insect, but would recommend those who may be curious in this matter to examine for themselves, or, I shall be happy at any time to repeat this experiment in their presence.

Independently of the presence of the *sugar insect*, maple sugar is not in any way inferior to cane sugar, but is infinitely superior in many respects. It is prepared at a time of the year when neither insects nor the pollen of plants exist to vitiate it, as is the case with common cane sugar. Its taste is superior to that of cane sugar, it possesses a delicious flavor, when well made, and it sweetens equally as well. It can be eaten in a pure state for a considerable time without any unpleasant consequence, which is the reverse with cane sugar, undoubtedly one of the sources of worms in the body. As it is free from moisture, it may be preserved for years, and if exposed to the air becomes dry; it is this moisture in the muscovado or cane sugar, which permits of the generation of the *sugar insect*, and which is prevented in the other from this opposite effect.

The subject of the manufacture of maple sugar, is one of such growing importance to the commerce of this country, that I shall resume its consideration at a future opportunity.

We should often blush at our best actions did the world but see the motives upon which they are grounded.

HINCKLEY AGRICULTURAL SOCIETY.

Gentlemen, I think I shall be able to convince you that in thus neglecting our breed of cattle we are taking a principal source of gain away, and it is more perceptible when you compare good stock and bad together. Why do we toil so much in preparing the soil for our seed? Look at the heavy expenses attendant on the plough; and shall we leave our stock for instinct to guide, and nature to perfect them? I am well aware that many of you have, and will continue to derive great benefit from a few pounds judiciously laid out in hiring and purchasing good *male animals* for the purpose of improving your stock. I calculate that it will make fifty per cent. difference in leaving a farm between good improved stock, and leaving it with inferior; then, gentlemen, if this be the case, we are nearly doubling our capital employed, beside having the advantage of always having had good stock to dispose of; and merely by a little attention and application in selecting the stock for use. I do think it would be wisdom in every young man commencing business, to lay out an extra twenty pounds (or two) in purchasing the best *male animals* he can lay his hands upon; it would be advantageous both in introducing his stock and recommending him. I think I have shown you clearly that it is to our advantage, as well as a pleasure, to apply our time and money in the selection of good stock; but let it not be supposed that it is to be attained without trouble; for I seriously tell you that without judgment, without constant application, without great research into the proper characteristic traits of breed and formation of animals, we shall never come to anything satisfactory: I consider *character* the main link in the whole chain of breeding; for without character you have nothing to guide you. Then comes the *touch or handle*—this is very essential: then there is the hide or pelt; and the color of a beast is not to be neglected—it must be in character according to their description. Now there are various kinds of beasts which uniformly support a character in themselves; and I may say the same of sheep. I am not disposed to flatter one breed or disparage another, for I really do think they are all useful in their separate localities; but I am decidedly against mixing or crossing distinct breeds, as by those means you get a nondescript kind of animal that no one can depend upon, and must be termed *nongrels*. The great object in breeding is to avoid as far as possible any affinity of blood; and here I perhaps differ with many of my brother breeders, who hold that you cannot retain the character without *in-and-in* breeding. But taking a retrospective view of the breeders of this country, I consider that numbers have lost themselves through persevering in this system. The evil applies to both sheep and beast, though no animal shows the ill effects

of close relationship like pigs. Some breeders assert in the present day that they have bred their flocks for 50 years without a cross or change of blood: it may be so, but they have not convinced me, nor do I think they will the public, that they have bred to the best advantage. I have heard it upon very good authority that the late Mr. Bakewell, of Dishley (who may justly be styled the father of the new Leicester breed of sheep) pursued the *in-and-in* system, until he found his flock degenerating fast, and sought advice from a breeder of fowls: and it was his opinion, as regarded fowls, that you might breed them to bear punishment, but would not have energy to retaliate. I have heard a similar opinion expressed by an eminent surgeon in this county, who said his neighbors inter-married till they had become all fools. I have myself twice experienced the ill effects of the *in-and-in* system of breeding in pigs, in the young ones all dying; and a similar circumstance occurred to a friend of mine last week. Let us now review the various breeds of beasts in our own immediate neighborhood. First we will take the long-horns, which are now only in the hands of a few individuals. This breed of beasts thirty years ago was nearly the only kind we saw in the county, and I can very well recollect some of the most celebrated herds. There was the Croxall, the Canley, and the Rollwright blood, and various others who were bred from these herds. Now each respective breeder had his prejudices, and seldom exchanged with each other. The Croxall blood differed from the others in this respect—their horns not being so long, but thicker, coarser hides, more lean flesh, and not quite so complete in form, less inclined to milk, but remarkable for their hardihood and feeding properties, and generally were mixed colors.* The Canley

* Mr. Webster, of Canley, near Coventry, was the first scientific breeder of long-horns, and his stock was founded on some good cows purchased of Sir R. Gresley, of Drakelow, near Burton-on-Trent; a gentleman who took much delight in keeping a dairy of cows of similar shape and color, and in importing bulls from Lancashire and Westmoreland. It has been much disputed what district originally possessed this breed; but general opinion points out Craven in the West Riding of Yorkshire, as the most probable. About the year 1790 very high prices, nearly £300 per head for bulls and cows, were obtained by Messrs. Fowler and Princes, and sixty to eighty guineas for the hire of bulls limited in use. The great length of the back in this breed yields more of the valuable cuts of beef than any other breed, and the flesh is deemed as much superior to the short-horn as the Southdown mutton is to the Leicester or Lincoln. The flesh is more marbled and intermixed with fat; and in the common expression of the butchers, there is more ninepenny than threepenny beef in the carcass: no breed can bear the summer's heat and winter's cold with so much impunity, and no cattle bear the straw-yard keep so well without losing con-

beasts were fine figures, with extreme long horns, great milkers, and consequently lighter of flesh; they were frequently self-colored, inclining to yellow or pale red, which in my opinion indicated want of constitution.* The Rollwright breed were very similar, but less in size; their symmetry, perhaps, more complete than the two former. Now it may seem to you surprising that these very eminent men, who were engaged in the breeding of long-horned cattle, should in the short space of thirty years have allowed this stock so to degenerate; either there must have been a want of foresight and application, or they must have possessed a bigoted prejudice against change or improvement. I am prepared to tell you this was the case, they being over jealous of each other; they considered it a degradation to ask each other for assistance. Why was only a part of the beast to be considered? Is it not as necessary to have milk as beef, and beef as milk? and why not borrow one from the other the properties most wanting? Bakewell said, "You might stick a patch on a sheep anywhere," and why not on a beast? surely this might have been done without making a rend. But I am led to believe that it was the *in-and-in* system that was a great cause of the falling off in the breed of the long-horns; it was the close affinity of blood that caused the loss of constitution and size.

dition. But the short-horn is a powerful rival, and by early maturity and a more liberal system of feeding them, has contributed to beat this once, and deservedly, esteemed breed out of general use; but a doubt still remains whether for the quantity and quality of the cheese or butter made they have ever been equalled. Mr. Bakewell's cow "Old Comely" lived to the age of 26 years; and when killed, the fat on her sirloin was four inches in thickness.

* The Rollwright herd appears to have been descended from the Canley herd. Mr. Fowler began with two cows purchased of Mr. Webster at what was then considered a high price, and to these he hired a bull called "Twopenny," of Mr. Bakewell. We see in the prices made at Mr. Fowler's sale in March, 1791, from the following prices obtained, that even high prices were justified in the great increased value of the offspring—

BULLS.

Garrick, 5 years old, purchased by Mr. Stone of Quorndon, for £215 5s.
Washington, 2 years, purchased by Mr. Michael Buckley, Normanton, for £215 5s.
Sultan, 2 years, purchased by Mr. Freeman, Hitchcott, for £220 10s.
Young Garrick, 2 years, purchased for Mr. Fowler, for £49 7s.

COWS.

	£	s.	d.
Young Brindled Beauty.....	66	3	0
Nell's White Back.....	89	5	0
Long-horned Beauty.....	44	2	0
Nancy.....	52	10	0
Brindled Beauty.....	273	0	0
Garrick's Sister.....	120	15	0
Young Nell.....	126	0	0

Yet there is another cause which suggests itself to me—Was it not in some measure through having *packed* committees at the various local agricultural societies, who have invariably selected for the judges of stock either the bailiffs of noblemen, or landed proprietors; men who had the run of a long purse, and who never knew what rent-paying was; who never thought of anything further than pleasing the eye; and who invariably awarded the premiums to stock that neither you nor I would be at the trouble to drive home if compelled to breed from them. This, no doubt, has hindered the progress of breeding, and had a baneful effect on this once useful breed of stock. We will now proceed to the Durham breed, which we are told entirely originated in the county bearing their name, and first produced by Mr. Collins.* The pedigrees may be traced to his stock, but beyond that we cannot go back. I believe it is admitted on all hands that this breed came to the largest size at the youngest age of any breed in the Kingdom (here you have early maturity); and although they were raised from crossing† with different breeds, they have now a peculiar character of their own; their colors red, white, and roan, or hazel; and if ever you see a clear spot on a beast, you may at once conclude

* A bull called "Hubback" was the sire of the dam of Mr. Charles Colling's "Foljambe," who was the grandsire of "Favorite;" the dam of "Hubback," was a cow, the property of a person in indigent circumstances, and who grazed the cow in the lanes: still she was a cow possessing propensity to fatten in a great degree, as, when she was removed to some good land she did not again breed; and "Hubback" was useful as a bull for a very short period. Mr. Collings found he could not, with any certainty breed *large good animals*, and from the outset endeavored to reduce the size. The celebrated Durham ox was by "Favorite," out of a common cow at 3 years old; it was computed to weigh 168 stones of 14lbs.

† Mr. Collings tried several experiments in crossing, but he generally resorted to breeds smaller than the short-horns. Amongst the most successful was the cross with the polled Galloway: no breed of cattle seemed so likely to improve the old short-horn as this: they were calculated, by their deep massive frames and short legs, to bring the short-horns nearer to the ground, and to dispose of their weight in a more compact manner. Their hardy habits would be essentially useful, and the quality of their flesh and hair was such as to render the experiment still more safe; and being also to be had of a red color, they appeared the most suitable of all breeds to cross with the Teeswater and original short-horn. Prejudice against this cross was at the height at Mr. Colling's sale; yet a cow, "Lady," 14 years old, sold for 260 guineas; "Countess," her daughter, 9 years old, for 400 guineas; "Laura," another daughter, 4 years old, for 210 guineas; "Major" and "George," two of her sons, sold for 200 guineas and 130 guineas; yet these were directly descended from the cross with the polled Galloway breed.

it is not a pure Durham. I have found them good milkers, and have a great propensity to fatten; but I am fearful they will meet with the same fate as the long-horns, if not bred with more caution. I have no doubt the Hereford breed, the Devons, and others, are well adapted to their respective counties, but I cannot think any breeds so profitable for dairying and feeding in this county, as the Durham, or the original long-horned.

I will now say a few words about sheep; but being a ram breeder, perhaps I ought not to advance an opinion on the subject; but before I enter on it, let me ask you, Mr. Chairman, one question. Do you think the breed of sheep improved in this neighborhood within the last five years?

The Chairman would not undertake to say they were. There were more cross-bred ones than there used to be.

Several gentlemen present did not consider so much care was paid to pure breeding as there used to be.

Mr. Spencer continued,—As you consider that they are not improved, it tends to prove that the rage for crossing* has not had that good effect that many supposed; but, on the contrary, in my opinion it has produced a nondescript sort of animal, without form or character, sadly disproportioned, more bone by half than necessary, and with a long thin back and large stomach, which, as a natural consequence, must require nearly double the quantity of food to make them fat. Perhaps some of the gentlemen who have made the change will tell us by what rule or system they have bred these animals, and how they are in future to proceed to keep this character together; because in all descriptions of stock I must have a character supported. Gentlemen, I hope the friends of cross-breeding will take an opportunity of expressing their opinions. I think it quite out of my province to make any distinction or remark respecting any particular flock of Leicester sheep of the present day;† for I have received

* This is not meant to express an exchange of blood of the same breed, and which is supposed to be the true method of successful breeding; but of late the rage has been for South Downs, Shropshires, Lincolns, Cotswolds, and other rams to cross with the Leicester ewes; thus the sheep in our fair are now mostly of a broken breed.

† Amongst the most celebrated of the Leicester breeders were Messrs. Buckley, of Normanton-upon-Soar, Messrs. Burgess (successors to Mr. Stubbins), of Holmepierpoint, near Nottingham, and Mr. Stone, of Quorndon; and there is scarcely a flock of Leicester sheep which has not a strain from one or all of these flocks. Mr. Buckley's plan was to regard above everything a good constitution, and firmness of flesh; while Mr. Burgess, his cotemporary, pursued a contrary course, looking to size and fatness above everything. The flocks of the late Earls Spencer and Talbot were bred purely from Mr. Buckley's; and we believe he obtained the highest price ever made for the hire of a ram—viz., 1000 guineas.

great benefit in my own flock from all the best bred ones; and I do think others may, by making proper selections—so much depends upon the selection, in all stock, especially the male animal. Robert Bakewell, of Dishley, whose name stands immortalized as the father of the new Leicester breed of sheep, commenced his career under great disadvantages: it was not on a sudden that he attained his high celebrity as a sheep breeder. It is recorded of him that the first ram he let out he drove to Leicester fair, and obtained only sixteen shillings for the use of him for the season. About the year 1760 his rams did not sell for more than two or three guineas each; and for their hire he received from 15s. to 1 guinea per head: he gradually advanced his prices, and in 1770 he let some of them for 25 guineas. Thus, you see, that although his first produce did not remunerate him, his views were not to be thwarted by trifles; he persevered, and overcame great difficulties. It is said no one ever knew his method of making his crosses; but from statements I have recently heard, he made some crosses in the latter part of his time, that were not approved of by some of his followers, and who would never use any of the produce: and this alloy or cross blood remains a stigma and stain in the breed of Leicester sheep to this day; yet this is a perceptible feature to those who ever knew the character of it. Robert Bakewell's great object was to gain the greatest weight of meat upon the smallest quantity of bone, and to combine this with symmetry of form, early maturity, fine quality of flesh, and a great propensity to fatten. He proceeded exactly on the same principle in his breed of sheep as cattle; viz., the fattening in the valuable parts of the body,* and the living on much poorer food than other sorts. He found, by experiments in many parts of the Kingdom, that *no land is too bad for good stock*, and particularly sheep, if dry. With regard to the Southdown sheep, they are a south country breed, well adapted for folding, and suitable for dry hot soils; but I cannot think they would suit Leicestershire, nor do I think the Leicesters would supersede them in the down countries. I have always admired them on account of their character being so uniform. The Shropshire breed has not the same truth of character, and would not be

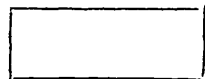
Earl Spencer regarded purity of blood before everything else; then vigor and constitution, then symmetry of form, then aptitude to fatten with early maturity, and last of all beauty. He considered the fleece of secondary importance, as the quantity, or fineness only made a few shillings difference, and preferred looking to more important points.

* It has been complained that Bakewell's stock were patchy when fat; but it is a question now, whether his was not the most profitable plan, in having the most weight of meat on the best parts of the body.

so suitable in the south; I have never seen two flocks of Shropshire Down alike; and that has led me to the conclusion that their origin cannot be traced to a true source.

A Member here observed that they were a bastard breed between the Cheviot and the Southdowns, and most probably intermixed with many other breeds.

I must, continued Mr. Spencer, apply the same observation to Gloucesters or Cotswolds; they are a mixed medley, being part Lincoln, part Leicester, and divers other breeds; and therefore have no truth of character. I have often wished some of the breeders of these sheep would have weighed their food against the Leicesters, as I think the result would have satisfied a great many who now remain in doubt; but it always happens when our graziers have brought them into this neighborhood they have never told us how they had been kept, and they are also rather shy at telling us the result of their trial. And there is another observation I have to make, and that is, when they have changed or crossed with these sheep, they invariably began to keep them better and nurse them better than their old friends the Leicesters. I shall now proceed to give you my humble ideas how a selection for breeding purposes should be made: when you order a piece of furniture you are very particular as to the dimensions, the quality, the pattern, and so forth; and when you receive it, if it does not correspond with the order you reject it. Then, I say, observe the same rule in purchasing or hiring your bull or ram. First picture to yourself the kind of animal you want; keep that picture in your mind's eye, and if you do not find him in one place, look till you do find him; for you may depend upon it a little trouble spent in looking out a good animal is time well spent; and you must always bear in mind that *like will beget like*. If you steadily pursue this plan, you will soon find that you will have what you want, and what is the beauty of all breeding—*"a family likeness."* I have often thought to myself that an animal to be well shaped should be in the form of parallelogram, the back from the



tail to the shoulder forming one side, and the feet on a level surface the other side; from the tail downwards to the hocks one end, and from the top of the shoulder down the forelegs the other end: the bone flat, and not round, as that at once denotes bad blood, always taking care to have plenty of it, as I think you will seldom have too much bone in a well shaped male animal. The males should always have a strong neck and large broad heads, with prominent bold eyes, and rather hollow faces (the reverse of a Roman nose); indeed I make more points on the head than many other parts, as it is

the leading feature in the character of the animal. The quality of the flesh is the next consideration, as it matters little what the form is if not good fleshed; and with this I shall combine the hide or pelt, which if you do err in, let it be with having too much, as in this depends very much the constitution; for how can the animals resist the cold without a proper covering? Yet there is no rule without an exception, and we should be partly guided by our own herds in making the selections as to what properties we want, and what we now possess. In speaking of sheep I must admit there are various opinions about the quality of mutton; some are favorable to *very firm*, or I may say, *hard* mutton, and some prefer *loose*; but I think there is a medium between the two to be observed, but take care to have plenty of it. All will agree that that which produces the greatest weight from the least food given, is the best. Some breeders have been very curious about bone, but I am of opinion that with very fine bone you are apt to lose constitution.

Gentlemen, I have now endeavored to show you the necessity of breeding good stock, the fallacy of keeping bad; and I have also given you my humble views, and some common practical ideas, how good stock may be bred, and how they may be maintained; but depend upon it, there must not only be application, but skill and perseverance; for one step wrong will often send you many steps backwards; therefore I will again urge caution as to breeding without *pedigree and character*.

In this brief sketch I have given up the feeding part of our subject, but I will make a few passing remarks. I do think, of all the mismanagement it is the worst to breed stock and starve them to death; and I am sure that I speak within compass when I say that there are farmers who starve as much stock to death annually as would pay half the rent, if properly attended to; but there is a wide difference between starving and overfeeding them: and there is also a great difference in localities as to the produce of food. I neither advocate high nor low feeding. Young stock require to be kept growing, with plenty of air; by that course they are more likely to breed and be profitable. I cannot think box feeding can be healthy for young stock, though it may be advantageous on large plough-farms: but in this county our grass lands require attention; and my plan is to winter my young stock in my meadows, giving oilcake and cut chaff; in this practice I have been very successful, not having lost one since I pursued it. These gleanings and observations are now laid before you—they are collected from practical observations, and you may now share them with me. I have had the pleasure of associating with many breeders, and find that all must, sooner or later, stand or fall on their

own merits—for profession is nothing without reality. Breeding has been my hobby-horse (if I may be allowed to borrow that phrase), and we have managed to jog together pretty comfortably up to this time; but, contrary to my wishes and spite of my remonstrances, my hobby-horse has been fed on *peeled corn*; and I am much afraid it cannot be depended upon in future.

Mr. Spencer sat down amidst the hearty cheers of the company.

Mr. Gilbert, the secretary, said,—I think we are all convinced that the great thing in breeding is to select the best females we can, and use the males most likely to correct any faults they may possess; and I am of opinion that (all we have heard to the contrary notwithstanding) that the evil is more in not following out the principles and practice of Robert Bakewell, than in too closely following them. (Hear, hear.) I have learned that in his time there was a number of spirited individuals who formed a society or Dishley Club, and who bred from, and exchanged animals from one another, (and in this number my relation, the late Mr. Buckley, of Normanton, was one of the foremost): thus they had a choice selection of pure-bred animals that they could rely upon, sufficient change of blood to answer all the objections against close affinity, and no fears of degeneracy from breeding from bad-bred animals; therefore I contend for the practice of Bakewell, and that it is the want of following his footsteps in this particular that the long-horned breed of cattle and the new Leicester breed of sheep have degenerated. I think there are sadly too many bulls kept of an inferior kind. Many of you buy the one that is old enough for your purpose at the lowest possible cost—say at £5 or £6: now in many cases one bull would suffice for three or four farms, in some cases for a parish, and by each putting their £5 together an animal that would improve each herd, and in a surprising degree, could be obtained; and in most cases the improved stock would cost less than the present inferior. In walking through our fairs I have seen half-horned bulls purchased for use, and upon remonstrating with the buyer on breeding from a broken stock, have been told that his cows were long-horns, or not true bred, and that he did not want to get into the breed too fast. Gentlemen, can you expect good stock when you put males and females together, the produce of which must be mongrels and probably of defective shape, without size, color, or constitution? Pedigree is necessary to guide you as to what the offspring will be; generally, I think, animals breed backwards—that is, the young generally resemble the sires or dams of their parents, and frequently cry back for several generations to any defect. I look upon pedigree to be, having been bred for certain points of excellence from *selected* parents through

successive generations; a pedigree on paper is of little use without judicious selections have been constantly made in the animals bred from. The man who uses Mr. So-and-So's breed one year and then uses Mr. So-and-So's because they are the best in the neighborhood, without considering over the why and the wherefore of that excellence, will never arrive at perfection. He must say I want size, or muscle, or hide, or what not, and look out where it is to be found in abundance—for perfect animals we do not possess.

Mr. Warner, of Weston-Hill, begged to make a few remarks as regarded the long-horned breed of cattle, and he would add that he agreed with every word Mr. Spencer had said. The long-horned breed of cattle he had always kept, and he should be sorry to change them; he thought they made more cheese; his village used to be noted as a cheese neighborhood, and frequently five hundred weight per cow had been made in a season, and in lots of nine or ten cows: can the short-horn cows do more? (No, no.) Some of my neighbors have changed them, and instead of cows have got a dairy of skeletons; in fact, if they were on my Hill I think a good wind would almost blow them away. I have heard of a gentleman selling fifty long-horned barren cows at twenty guineas each; and can the short-horned breed say more as regards their feeding propensities than that? I am only sorry the breed is degenerated, and that they are so much smaller than they used to be; and from the small number kept, there is a difficulty in getting any fresh blood into your stock. Now, as to Leicester sheep, I prefer them to any cross-breeds, or breed whatever; I am not a good keeper, and use no cake or corn, and have frequently sold my tegs *bareshorn* in the month of May at fifty shillings per head; and last year I sold them out of the wool about Coventry fair to average two guineas each; and I question if any half-breeds, kept as mine were, averaged more (Hear, hear).

Mr. Gilbert begged to remark that the teg trade appeared to have the most injurious effect on the breed of sheep, by selling off lambs at 8 to 12 or 14 months old. The object seemed to be, to produce a lamb that stood a good height up in a pen, with a long neck, a long back; and frequently these were found with their forelegs close together: a fat back and a long leg were sought for, to the prejudice of every other point; yet, although these made several shillings per head more than others, the apparently smaller ones, that were much thicker and better proportioned, would be pounds per quarter the heaviest when they came to be fattened. It was the teg trade that more than all others had raised the half-bred Downs and Shropshires into such repute; but he fancied graziers were now beginning to object to these flat sided, long-legged animals. Perhaps, per head, the half-breeds had the advantage;

but he thought per acre the profit was in favor of the Leicesters, as they would bear running thicker.

Mr. MacEwan begged to ask Mr. Warner one question. Did that gentleman think the longhorns were ever better than some of Mr. Warner's present cows, and such as the Hon. Mr. Nugent's "Lady Godiva."

Mr. Warner.—I think they are not much above half the size they used to be: "Lady Godiva" was almost the best cow I ever saw; but I do not think they are nearly so good as they were thirty or forty years ago; but I think we stock harder than we used, we do not give them the extent of ground.

A Gentleman remarked that formerly several cows in a dairy were seen not less than 10 or 12 score per quarter in weight, while in milk and good thick beef, too; but now 7 to 8 score frames, up to 9, was the general size.

Mr. Coleman, of Coventry, wished to ask Mr. Warner if he had ever tried crossing by way of improving his breed of cattle, which he admitted were degenerated. It was a well-ascertained fact that the human species were much improved by cross-breeding. The Bourbon family of France were a proof of this, and by intermarrying became imbecile, while the reigning family of Great Britain by German marriages were a proof how beneficial a change was in the numerous and healthy offspring. He thought by analogy it would hold good as regards cattle; and with deference to the superior practical skill of the present company, that superior strength and courage would result from cross-breeding.

Mr. Warner had abstained from crossing with other breeds; and vindicated the pure-breeds from some of the aspersions cast upon them, and though the butchers had mainly influenced the dairy farmers from keeping long-horns, and ridiculed those who would listen to interested men who did not find so much loose fat or butcher's profit in the carcass; he for one would not part with that breed to please the butchers.

The Chairman said he had abstained from crossing, as he considered that in beauty and weight the pure-breeds had the preference; yet sometimes he had seen the cross-breeds carry off the buyers, and saw some queer-looking animals sold for more money than he could sell his for; but he consoled himself with the idea that some parties would purchase a jackass if found in the form of a sheep (laughter). He was anxious to obtain the best breed he could; and asked if any gentleman knew of a good bull; as, if he could find a really good one, he, the chairman, would send half-a-dozen cows to him.

Several gentleman remarked that there was not a good rough bull in the neighborhood, the three best having been lately sold by Mr. Cruslands, Mr. Ortons, and the Rev. S. A. Procters.

A gentleman suggested that Mr. Ward, of Keresly, near Coventry, had the best he knew of; but that was said to be of doubtful pedigree, or pedigree on the side of its sire only; and it is much to be regretted that in a circle of twelve miles there is scarcely a bull that a tenant-farmer would be at the trouble to send cows to, the better bred ones being too fine in bone, and generally with too little hair upon them.

The Chairman asked if Mr. Spencer would continue his interesting paper as regards the fattening part of the subject.

Mr. Spencer agreed to do his best on that point, if it were the wish of the meeting.

Thanks were then given to Mr. Spencer and the Chairman by acclamation.

NECESSITY OF AGRICULTURAL EDUCATION IN IRELAND.—HOW CAN IT BE BEST PROMOTED?

TO THE EDITOR OF THE MARK-LANE EXPRESS.

SIR,—This is a subject for which we should agitate—being worthy of deep attention, and fraught with intrinsic good. Ireland, as a nation, has been nearly wrecked in her social joys, crippled in her industry, cramped in her energy, anomalies springing from national ignorance, the barrier to national happiness. If knowledge is power, grant to Ireland that power to overcome woe and wretchedness—the attributes of ignorance.

In the many measures proposed for Ireland's salvation, few will question her agriculture requires to be improved. How? By a practical mode of education founded upon known facts and principles; an education that will inform *youth* where to find a stimulus for the exhausted farms of their parents, by learning what the land is, and what can be done with it. But this mode of education, to be effective, must be cheap and popular—cheap, to embrace the humble; popular, to encourage exertion and enhance success. This leads me to notice that admirable plan of agricultural education as adopted by the Commissioners of Irish Education. The Commissioners, not unmindful of their duties, wisely foresaw with them rested in a great measure the means for advancing Irish husbandry. Let us see how they acted. They have established in different localities in Ireland Model Farms, varying from two to thirty acres in extent, under the management of trained agricultural teachers. These Model Farms at present number upwards of sixty-seven. What an engine is here at work for improving rural ignorance! In my former letter I described the normal institution at which the agricultural teachers were trained. Possessing, as the young men in training do, opportunities of observing the management of a well conducted farm, the management of crops, and the working of agricultural implements; receiving sound

instruction from the agricultural lectures of the superintendent, acquiring a practical knowledge of horticulture, attending the course of botanical lectures at the Royal Dublin Society's Gardens, and studying for useful ends the elements of an English education in its various branches—where, may I ask, are the appliances of education so happily organized? Can a young man not be here qualified for an agricultural profession—fully competent to take charge of a farm, to make it a *model* in some benighted district; to train youth, to awaken curiosity, fix attention, and induce such an exercise of the faculties as will invigorate them and lead youth to cultivate the power of attentive observation and reasoning? We want Model Farms in every parish in Ireland, to practically illustrate the advantages of house-feeding, the rotation and management of crops. No matter how small the farm be, a worthy example is the desired end; “from little things great things arise.” The pupil, while attending the agricultural school, is to receive agricultural instruction as an ordinary school lesson. By no means separate literary and agricultural studies—the one will assist the progress of the other. To teach the child, while at school the nature of the soil, crops, and manures, the season for sowing, and the quantities of seeds required for the different crops—such information, not alone from the *natural* desire which all seem to cherish for rural pursuits, will steal and ingraft itself on the mind. Will not the foot-prints of knowledge leave an impression, by preventing errors in husbandry, which it might be the lot of the child, when a man, to experience? To be forewarned is to be forearmed! The precepts thus taught in the school will lead to inquiry and research; the pupil will contrast the husbandry practised by his preceptor with that pursued by the neighboring farmers; honest criticism will be provoked, which will have a useful end. Satisfy the inquisitiveness of youth, and good will be engendered. If an industrial class be selected from the day-scholars to work for a few hours on the farm after school, business-habits will be thus acquired—the solid results of industrial education; and that tendency which unrestricted juvenility has, to run into idleness and mischief, checked; and an inclination for useful and regular habits ensue, accompanied by health and morality.

Such is the plan pursued by the Commissioners of Education, the narration of which is not its least recommendation. The urgency for extending this plan increases from year to year. The poor of Ireland, having so cheap a system of education within their reach, calculated to diffuse the steady light of knowledge, we cannot conceive the happy results which will ensue. We must have new men, and new ways to appreciate the facts, discoveries and processes of the age; prejudices must be dispelled, men

brought nearer to each other, and by increasing the comforts of the people, increase their thirst for education. Who stands in need of information more than the tiller of the Irish soil? Whose ideas require to be more definite and enlarged? Let not the zeal of my English friends lag in imitating that excellent plan of agricultural education pursued by the Irish National Board. Let us go hand and heart to work, and, with honest emulation, strive to exceed the zest of Erin's sons to be rurally instructed, by bringing to the cottage-hearths of England the truths of agricultural science and research, and making them "familiar as household words."

I heartily wish success to the yet infant growth of agricultural education as practised under the National Board, and with fond anxiety look forward to the day when, by its agency, industry will be crowned by intelligence, and many of the social ills which distract that unhappy and friendly isle removed.

YOURS, OBLIGED,
PHILOS.

DUBLIN, 28th May, 1851.

AGRICULTURAL LABORERS AT THE EXHIBITION.

A remarkable feature of Thursday's experience in the interior of the Exhibition was the appearance there, at an early hour, of nearly 800 agricultural laborers and country folk, from the neighborhood of Godstone, in Surrey, headed by the clergymen of the parishes to which they respectively belonged, and organized for the occasion into companies like a regiment of militia. They paid 1s. 6d. each towards the expenses of the trip, the rest being defrayed by the gentry of the neighborhood; and, notwithstanding the state of the weather, they were conveyed to the Exhibition and back again to their own homes in a very expeditious manner, and with the utmost care for their comfort. The railway station was reached by waggons, and from London-bridge terminus to Westminster they were brought up by steamer. Thence, after seeing Westminster-hall, they proceeded on foot and in marching order to the Crystal Palace, and, having spent several hours there in exploring the wonders of art and industry, at 4 o'clock they took their departure, returning as they came. The men wore their smartest smock-frocks, the women their best Sunday dresses, and more perfect specimens of rustic attire, rustic faces, and rustic manners, could hardly be produced from any part of England. The tower portion of the assemblage gathered round them as they mustered before departing in the transept, which looks full of curiosity, not unmingled with a species of half pitying interest; and many were the questions put to them as to what they thought of the Exhibition? what they were most struck by? whether they understood what they

had seen? and if they would like to come again? After some little marshalling they left the Exhibition in close order, moving three abreast—an affecting array of young and old, male and female, in which each observer might read with his own eyes the evidences of a laborious life, little relieved by intelligence or education, but simple, unpretending, and not unaccompanied by domestic virtue and happiness. They were chiefly, we understand, from the parish of Lingfield, and their rector, the Rev. Mr. Hutton, who attended them, deserves great praise for his truly benevolent and pastoral act, which ought to be extensively imitated.

EXHIBITION.—MESSRS. GARRETT & SON'S TREAT TO THEIR WORKMEN.

We have already noticed many acts of cordial liberality on the part of employers towards their workmen, in connection with the Exhibition; but the noblest example of this which has yet come to our knowledge is that which we understand is about to be given by Messrs. Garrett and Son, the well-known agricultural engineers, of Leiston Works, Suffolk. Messrs. Garrett have proposed that every workman and boy above fifteen years of age in their employ should spend a week in London during the Exhibition. Two vessels have been fitted up with berths, cooking apparatus, and every requisite, and a steam-tug has been hired to tow the whole party from Aldborough to London. The masts will be taken out of the vessels so that they may be towed under the bridges, and moored at the Westminster-wharf, near Vauxhall-bridge. The board of the party is to be of the old English character. Four bullocks and ten pigs, slaughtered, will form part of the freight of this novel and interesting flotilla. Plum pudding will be provided each day, and each man will receive two pints of porter per diem. The foreman will come up with the men, and superintend them during their stay, and see that they return to their lodgings at proper hours. In addition to visiting the Exhibition, means will also be placed at the disposal of the men to enable them to visit other places of recreation and amusement in the metropolis. Messrs. Thorne, the well-known firm of brewers, have, in the most liberal manner, placed their extensive wharf at the disposal of the party.—*Bury Post*.

GIANT COW PARSNIP.

SIR,—Allow me to lay the following few lines before you respecting the *Heracleum giganteum*, which is growing at present in the pleasure-grounds of Mrs. P. Ruxton, Red House; and I believe that the plant has been recently introduced by Messrs. Hardy and Son, seed-growers, Maldon, Essex. Although early in the season, as yet the leaves of this magnificent herbaceous plant are

measuring 54 inches in diameter; height of the plant, 6 feet 2 inches; stem, 12½ inches in circumference, at 3 inches over the surface of the ground; and the plant occupies exactly a circle of 29½ feet.

So much for the giant parsnip, which is well worth seeing, as a bold ornamental plant; and any respectable individual, who may feel himself curious enough to see a fine specimen of the largest herbaceous plant perhaps known, may have ocular demonstration, by paying a short visit to the pleasure-grounds at Red House. I had got only five grains of the giant parsnip-seed, from Mr. John Hamilton, last October, and three of them are now grown to the above-mentioned dimensions; and I expect that the plants will be still much larger in size before the latter end of July next.—Yours, &c., JAMES MURPHY, *Red House, Ardee, 5th. June, 1851.*

MONS. THIERS OPINION OF THE GREAT EXHIBITION.—The *Bulletin de Paris* says:—"M. Thiers has returned to Paris from London, full of admiration for the wonders at the Exhibition, of which, he says, none of the writers in the French journals have succeeded in giving anything like an adequate idea of its grandeur and magnificence. He spent nine days there, amongst the most eminent manufacturers and professional men, who, pleased to meet with so superior an intellect, gladly gave him every explanation. M. Thiers asserts that there can be no dispute as to the high position France holds at the Exhibition, especially in her silk manufactures. He was struck with the fact that France is pre-eminent in all the articles of luxury, which none but the wealthiest can buy; whereas England excels in the productions usually consumed by the middle and poorer classes. Thus democratic France works for the rich, and aristocratic England works for the poor. Since his return, M. Thiers has frequently expressed to his friends his admiration of the Exhibition, and he expatiates on the importance of this great page of industrial history as a means of showing the progress of civilization, and giving it a fresh impulse."

EARLY HOURS.—The stately dames of Edward the Fourth's Court rose with the lark, despatched their dinner at 11 o'clock, and shortly after eight were wrapped in slumber. In "The Northumberland-house Book for 1512," we were told that the family rose at six, breakfasted at seven, dined at ten, and supped at four. The gates were closed at nine.

EXTRAORDINARY UNDERTAKING.—It is asserted, on "indisputable authority," that there is a project in contemplation to extinguish the fires of Vesuvius! "It is understood that the bottom of the main or grand crater is several thousand feet below the level of the sea. The plan, therefore, is to

dig a large trench or canal from the sea to the crater—the expense of which will not exceed 2,000,000 dols., and thus extinguish the fires that have been burning for thousands of years. It is said that the fine lands thus to be reclaimed will more than ten times pay the expense of executing the grand design." Why should not Mr. Goldsworthy Gurney make the attempt with his steam-jet?

A BARN OF GLASS.—Mr. N. Tuckett intends to cover a large barn, 110 feet long and 28 feet wide, on his farm, at Heavitree, with a glass roof, after the model of the Palace of Glass. The expense will not be above two-thirds of the cost of slate, and he anticipates several advantages from the novel roof: among others it may be applied to drying corn during a catching harvest; the corn can be placed in the barn immediately upon being reaped, where it will have the benefit of the sun when it shines, be protected from the showers, and also dried by artificial heat, if required, and then stacked in ricks, under a covered-stack yard. This will enable the land to be immediately ploughed-up and sown with turnips or rape, which will prepare the land for another cereal crop the following year; so that he anticipates three crops in two years.—*Western Times.*

THE ATMOSPHERE.—It is a remark forced upon us, in travelling through some districts, that the owners of the land seem to regard a free circulation of air as unnecessary to the prosperity of the crops. Thickly-planted hedgerows, and small enclosures, in such places, intercepting every breeze, overshadowing the fields, and, by their widely-extending roots, withdrawing the nourishment from the soil, which is needed by the growing corn. This is, indeed, warring against nature. In all situations where man does not prevent it, a different state of things prevails. "Plants," well observes Dr. Lindley (*Gard. Chron.*, 1847, p. 571), "are never placed in such a situation in nature: on the contrary, the atmosphere that surrounds them is incessantly in motion, even in the calmest day, and by evening, or during the night, when they most especially are feeding, in rapid motion. The atmosphere is their pasture, and its ever-varying density is a natural phenomenon most intimately connected with the maintenance of vegetable health. It is a beautiful compensation for the want of locomotion: as plants cannot move to the atmosphere, the atmosphere, is ever moving towards them." The value of this motion of the air around plants, is not only to convey incessant supplies of its constituent gases, but to carry off its exhalations. Every 100 gallons of dry air contain about 21 gallons of oxygen gas, and 70 of nitrogen. "The carbonic acid amounts," adds Professor Johnston, "to only one gallon in 2,500; while the

watery vapor in the atmosphere varies from 1 to 2½ gallons of steam, in 100 gallons of common air." The variation of the atmospheric phenomena in different portions of England and Ireland is much more considerable than is commonly imagined. See a table on this subject by J. Glashier, Esq., of the Royal Observatory, Greenwich (Jour. Stat. Soc., Vol. II., p. 91).—*Farmer's Almanac.*

TWENTY DISSUASIVES FROM DESPONDENCY.

—1st. If you are distressed in mind—live; serenity and joy may yet dawn upon your soul. 2nd. If you have been happy and cheerful—live; and diffuse that happiness to others; 3rd. If misfortunes assail you by the faults of others—live: you have nothing wherewith to blame yourself. 4th. If misfortunes have arisen from your own misconduct—live; and be wiser in future. 5th. If you are indigent and helpless—live; the face of things, like the renewing seasons, may happily change. 6th. If you be rich and prosperous—live; and enjoy what you possess. 7th. If another have injured you—live; the crime will bring its own punishment. 8th. If you have injured another—live; and recompense good for evil. 9th. If your character be unjustly attacked—live; that you may see the aspersion disproved. 10th. If their reproaches be well founded—live; and deserve them not for the future. 11th. If you be eminent and applauded—live; and deserve the honors you have acquired. 12th. If your success be not equal to your merit—live; in the happy consciousness of having deserved it. 13th: If your success is beyond your merit—live: in thoughtfulness and humility. 14th. If you have been negligent and useless in society—live; and make amends. 15th. If you have been active and industrious—live; and communicate your improvement to others. 16th. If you have spiteful enemies—live; and disappoint their malevolence. 17th. If you have kind and faithful friends—live; to protect them. 18th and 19th. If you have been wise and virtuous—live; for the benefit of mankind. 20th. If you hope for immortality—live, and prepare to enjoy it—*Hogg's Weekly Instructor.*

LAWFUL STRUGGLES.—When we feel any pressures of distress, we are not to conclude that we can only obey the will of heaven by languishing under it, any more than when we perceive the pain of thirst, we are to imagine that water is prohibited. Of misfortune, it never can be certainly known whether, as proceeding from the hand of God, it is an act of favor or of punishment: but since all the ordinary dispensations of Providence are to be interpreted according to the general analogy of things, we may conclude that we have a right to remove one inconvenience as well as another; that we are only to take care lest we purchase ease

with guilt; and that our Maker's purpose, whether of reward or severity, will be answered by the labors which he lays us under the necessity of performing.—*Johnson.*

DISTRIBUTION OF HEAT ON THE EARTH'S SURFACE.—The heating of the earth's surface, and of the atmosphere, by which alone the vegetable and animal world can thrive, is alone owing to the rays of the sun, which must thus be regarded as the source of all life upon our planet. Where the midday sun stands vertically above the heads of the inhabitants, and its rays strike the earth's surface at a right angle, a luxuriant vegetation is developed, if a second condition of its existence, namely, moisture, be not wanting; but where the solar rays constantly fall too obliquely to produce any marked effect, nature is chained in eternal ice, and nearly all animal and vegetable life ceases.—*Dr. John Müller on Physics and Meteorology.*

RECEIPTS.

Family Washing.—[The following method, though not generally known, is much practised in the midland counties.] Melt together half-a-pound each of washing soda and of soapcuttings, mix well with sixteen gallons of water, pour it luke-warm over the dirty linen, and leave to soak for twenty-four hours. Drain this water from the clothes, and put them into a boiler, with a second supply of the same preparation cold, and let them boil for rather a longer time than if they had been previously washed. They will then require to be washed out in clean warm water, looking carefully over them that the parts requiring it may be rubbed; afterwards rinse in the usual way. This direction applies to all white and brown-holland articles. Bobbin, net and lace, retain their color best, if only scalded, not boiled. This mode of washing has been adopted for many years in a family of seven persons, the linen is of an excellent color, with only half the assistance formerly required, and the quantity of soap used is much lessened.

N.B. The refuse water is a good manure for fruit trees.

Polishing Paste.—Half-a-pound of mottled soapcut into pieces, mixed with half-a-pound of rotten-stone in powder; put them into a saucepan with enough of cold water to cover the mixture, (about three pints); boil slowly till dissolved to a paste.

Cement for mending Broken Vessels.—To half a pint of milk put a sufficient quantity of vinegar in order to curdle it; separate the curd from the whey and mix the whey with the whites of four eggs, beating the whole well together; when mixed add a little quick lime through a sieve until it acquires the consistency of a paste. With this cement broken vessels or cracks can be repaired; it dries quickly, and resists the action of fire and water.

TO MAKE GOOD BUTTER IN WINTER.—We often hear the complaint that winter butter is poor. Ours was so for several seasons; it was very slow in coming, and frothy, whitish, and sometimes bitter, while butter made from the same kind of milk, in the warm season, was good. I devised my plans for improvement—such as throwing in salt, warm milk, scalding cream, &c.; but to no purpose. At length I scalded my milk when brought from the cow, afterwards setting it in either a cold or a warm place, as most convenient. I mean, I communicated sufficient heat to my milk to destroy the effect which frosty feed in autumn, or dry feed in winter, had upon it. Since which time we have made (with fifteen minutes' churning) purer, sweeter, and more yellow butter than we ever made in summer, and sometimes from frozen cream gradually warmed. Were it not for the scarcity of hands, I would also scald my milk before setting it, during the summer, as well as in winter; for, surely, butter made in this way possesses a delicious richness and dryness which cannot be found in any other.—*Boston Cultivator.*

HOW TO COOK POTATOES.—Mr. Cuthill, of Camberwell, writes as follows to the editor of a morning contemporary:—"I shall feel most grateful for the insertion of a new mode of cooking old potatoes. After the 1st of April potatoes ought to be peeled at night for the one or two o'clock dinner, and for late dinners any time before nine o'clock the same day. I have repeated this experiment many times, and the improvement in the quality of the potato is very great. It is well known that owing to the inherent nature of the potato, it will grow in spite of every precaution to stop its growth, leaving the tuber very spongy and with much of the water extracted out of it. By peeling and steeping them in cold spring water for 10 or 12 hours the pores and cells become filled, however limp the tuber may be, and in the process of boiling this fresh water is again discharged, taking with it all bad flavor as well as partly removing the dark spots which all potatoes at this time of the year have. I tried them steeped in salt and water, but the salt turned them dark. I have also steeped cut sets, which in twelve hours became firm, and like steeping seeds, they would vegetate directly. Water will, however, not penetrate through the tough skin of a whole potato so easily."

TO MAKE HENS LAY PERPETUALLY.—Hens will lay eggs perpetually, if treated in the following manner:—Keep no cocks; give the hens fresh meat, chopped up like sausage meat, once a day, a very small portion—say half an ounce a day to each hen, during the winter, or from the time insects disappear in the fall, till they appear again in the spring. Leave no nest-eggs; where hens lay, run them out the moment they

have laid. The reason hens do not lay in the winter, is the want of animal food, which they get in summer in abundance, in the form of insects.—*American Paper.*

TO CURE WARTS.—Dissolve as much common washing soda as the water will take up; wash the warts with this for a minute or two, and let them dry without wiping. This repeated will gradually destroy the largest wart.

"I would reprove thee" said a wise Hea-then, "If I were not angry." And shall not Christians say as much.

HYMN.

The heath upon the mountain top, each blossom,
bush, and tree,
The wild bird singing in the woods so joyously
and free;
The morning beam that wakes to life and light
the slumbering dale,
The flood, the stream, the mossy rock, green
hill, and dewy vale;
The summer breeze that warmly blows, and
lifts the heads of flowers,
The glorious sun's most gorgeous rays, that gild
the golden hours;
The lily in the far-off dell, the daisy on the sod—
They all rejoice beneath the care, the tender
care of God.
The tiny bud that sweetly blows in fair and
lovely guise,
Is His as surely as the star that gems the eve-
ning skies;
The rippling stream, the babbling brook, flow
on beneath His care
As noticed as the foaming floods, that fleets of
nations bear.
Triumphantly, triumphantly, each image points
on high,
Memorial of His Majesty who reigns beyond the
sky.
The eagle on the barren, bleak, foam-crested,
surge-swept rock;
The wand'ring lonely albatross, with all the sea-
fowl flock;
The howling winds that whistle loud 'mid win-
ter's storm and gloom;
The long grass growing by the side of some low
solemn tomb;
The calm moon on a silent night, the still lake
watching o'er;
The dark blue tumbling glassy wave upon the
sea-beat shore;
The cattle on the thousand hills where foot of
man ne'er trod—
They all rejoice beneath the care, the tender care
of God.
The iceberg on the Lapland shore, snow on the
Alp's tall peak,
Alike His providence and love, His might and
glory speak.
The voice of music on the gale of Holy blessed
spring,
Earth's myriad notes of harmony His praise and
goodness sing,
Triumphantly, triumphantly, each image points
on high,
Memorial of His Majesty who reigns beyond the
sky.

EMILY VARDELL.

Agricultural Journal
AND
TRANSACTIONS
OF THE
LOWER CANADA AGRICULTURAL SOCIETY.

MONTREAL, AUGUST, 1851.

ASSOCIATIONS OF AGRICULTURAL
CREDIT.

We propose to advocate the establishments of these Associations continually until some action is taken in the matter, or until it is proved that our proposition would be injurious to this country, if carried into effect. Strenuous efforts are made to abrogate the usuary laws on the pretence that it would bring capital into the country and promote its improvement. So far as agriculturists would be interested in the question, we feel perfectly convinced that the abrogation of those laws, far from being advantageous to them, would, on the contrary, be the ruin of nine-tenths of them. It is an admitted fact that more capital is required in agriculture to enable farmers to introduce improvements that would be directly beneficial to them, and generally so to the country; but to borrow capital for this purpose at high rates of interest, would be the certain ruin of any farmer who would do so. In England where agricultural produce is more abundant to the acre, and sells for a higher price, landed proprietors or farmers would not attempt to borrow capital at a high rate of interest for agricultural improvements, and seldom give even five per cent. for it. If the usuary laws were abolished in Canada, merchants in cities and towns, and little shopkeepers throughout the country would soon have all the lands of the country under mortgage to them, and on such terms as would be the utter ruin of poor farmers. We warn the true friends of the country to resist this innovation upon the long established laws and customs of the people. If the inhabitants of cities and towns wish for

this change in the laws, (as they are the only parties who are demanding it), let the operation of the law be confined to them should it be changed, but, in mercy to the rural population, let it not extend to them. Their habits are simple, and it was only lately, that in selling a farm, they ever thought of charging interest upon the part of the purchase money which remained unpaid, and even now interest is not often exacted on the purchase money of a farm. Do away with the usuary laws, and very soon the store-keepers of the country will have such a claim upon farms that the proprietors will never be able to redeem them, and they will be reduced to the dependent condition of mere scerfs, and never again be proprietors of either house or land. We know what loan societies have done for parties who were so unfortunate as to borrow from them—to lose every thing they had in the course of three or four years. We do not attribute any blame to those loan societies, because they acted in every instance strictly according to law, but we deplore the misfortune of the parties who were ruined by borrowing from them, and the abrogation of the usuary laws would produce a similar effect upon thousands before the end of seven years from this time. We would not offer the slightest objection that the commercial and manufacturing classes should be free to exact what amount of interest they may think proper among themselves, only let us have the rural population protected from the effects of a law that would be certain ruin to them. If the agricultural class cannot obtain what capital they might require at an interest of six per cent., or under, they would do much better without borrowing any. The Associations of Agricultural Credit, would be exactly calculated to afford them loans upon such terms as would be safe for them to borrow, and it would be better for them if they cannot obtain loans upon safe terms, never to borrow a shilling, however necessary it might be for enabling them to introduce improvements in their system of agri-

culture and of stock. It is all very well to say that money may be worth a high price, and no doubt it would to commercial men or manufacturers under certain circumstances, but it never will be worth a high price to employ it in agriculture, however judiciously it may be expended. Let farmers make up their minds to this fact, and if they buy money at a high rate of interest it will certainly prove injurious to them, notwithstanding all the plausible arguments to the contrary of those who would abrogate the usuary laws. Parties may be able so to employ money in certain speculations, that they could afford to pay any rate of interest for it, as they would have it in their power to make others pay this interest back to them. It is not so with farmers, they cannot obtain a higher price for their products by any scheme of theirs, whatever may be the cost of production. The products of agriculture are perishable articles, and seldom can be kept over in the hands of the farmers to force higher prices. There is no gambling or speculation in their business, and therefore they have no means of realizing large profits to pay a high rate of interest on borrowed capital. It is not the agricultural classes who petition for the abrogation of usuary laws, and it is, we humbly conceive, a great injustice to make such a material change in the law when they do not desire it, and particularly when it would be calculated to injure them most seriously. This subject may, perhaps, be considered to have no connection with the objects for which this Journal is published, but we feel persuaded that the establishment of Associations of Agricultural Credit, would have a great and beneficial influence upon the improvement and prosperity of agriculture, and that the abrogation of the usuary laws would have a direct contrary influence, at all events, upon the present race of Canadian farmers.

It is difficult for persons strongly attached to their interest to be strictly honest in their dealings.

LONG-HORNED BREED OF NEAT CATTLE.
 We recommend to the attention of our readers an article copied from the *Farmers' Magazine*, referring to this breed of cattle. We have always been favorable to the breed, from a long acquaintance with them in the Old Country, and when of pure blood we did not know a better description of cattle. They were long in the body, barrel shaped, short legged, fine about the head and neck, had a thick, soft hide, were a very hardy breed of cattle, and we believe would be very well adapted for Canada, provided the pure breed could be had, and not mongrels. It is a great disadvantage that we have not any herds of neat cattle here of pure breeds, to which parties might resort to purchase animals of a distinct variety to breed from. We have never seen in Canada a herd of pure bred cattle of a distinct variety, that had not some mixture or cross of other breeds. While this is the case, there is no certainty in the breeding or crossing of animals, and as to any pretence to pedigree, we might as well refer back at once for their pedigree to the cattle that were in Noah's Ark, and we shall then be sure they were descended from that breed. It can be readily perceived by any party who is a judge that there are few cattle here that do not lack some of the distinctive marks of pure breeds. We do not object to this, if farmers have the animals they approve of, and find them profitable. We only say that it is almost impossible for any farmer to tell exactly the true breed of the stock he has, or how far they are of mixed breeds. The long-horned cattle were very easy known by distinctive marks, particularly in the shape of the horns. We have seen hundreds in a lot with scarcely any difference in the form of the horns. We believe this stock would answer well here. They are said not to be so good for the dairy as other breeds, but taking them for the whole year we think they would prove otherwise, and make up for any deficiency in quantity by the richness of the

quality of the milk. Animals of any variety that are short legged will be easy to feed, provided the carcass is well shaped; and on the contrary, we have a great objection to long legged animals, whatever be the shape of the carcass. Length of leg, although it may add to the height of the animal, will not increase the weight or beauty much, and it is not a mark of any good quality in them that have long legs. Coarse head, horns, neck, and legs, are very objectionable points in neat cattle, and we never found any that had these characteristics prove profitable to their owners. Cattle with fine heads, horns, neck, and legs, with a well-shaped carcass, will be best for all purposes on a farm, and yield the most valuable returns for what they consume, if properly attended to.

AGRICULTURAL IMPLEMENTS EXHIBITED IN THE CRYSTAL PALACE.

WE copy the following extract from a communication which appeared in a late number of the Mark Lane Express on Agricultural Implements at the great London Exposition. We are not surprised at this statement, because we were previously convinced that the implements used for agricultural purposes in England, were superior to those of any other country. We have often been surprised at the mistaken ideas that exist with regard to ploughs. Some parties imagine that because a plough is short in the beam and handles, that it must be lighter upon the horses when ploughing, than ploughs with beams and handles of double the length. We however maintain that those short ploughs are more difficult of draught, taking the same width and depth of furrow slice than the ploughs with long beams and handles, and with the short ploughs no man can make a perfectly straight furrow, or handsome ploughing. It is that part of the plough which opens and turns the soil that makes the draught heavy or light, and not the length of the beam and handles, and

any man of judgment must perceive at once that some of those short ploughs cannot but be difficult of draught. A well constructed plough will cleave and pass through the soil much more easily than one of those short stumpy ploughs with very wide shears will do. We say without hesitation, that in fair competition in the field those short ploughs would have no chance of executing work equal to a well constructed English wheel plough or Scotch swing plough. We make this statement to induce farmers to make a fair trial of the comparative excellence of implements before they give their money for those of inferior description.

But the question may be asked, what has this to do with the Exhibition, so far as it relates to agricultural produce and machinery? We reply, it has had much to do with the progress of agricultural improvement in other nations, as an examination of the very few instances in which foreigners have ventured to exhibit their implements will show; from which it may fairly be stated that agricultural *machinery* is not yet in use in foreign countries, and that their *hand tools* are of a coarse and inferior description. This difference is mainly owing to the right which every person in England possesses of choosing and varying his occupation, and of free and mutual discussion, by which the ideas of one class improve those of another, if not directly, yet by exciting a spirit of emulation—as, for example, in the case of Mr. Mechi and his Tiptree farm, and other amateur scientific agriculturists: and thus the public, taken generally, going by every real improvement, and individuals alone suffer in case of the failure of an experiment.

But there is another reason why improved agricultural machinery is nearly confined to England; and this is, the English system of holding farms. In Belgium and France, the cottage farming may lead to a greater attention to minutiae, but it also tends to a waste instead of a saving of labor, and to the use of simple tools, with which it is impossible to exercise that economy of working which is obtained by the machinery and implements of a large farm.

The system of lord and vassal in Russia,

Poland, and Austria is even worse; for the tools of the serf who cultivates a few acres, and pays a share of the raw produce, will be of the roughest character, and often of his own making; and where the serf has to labor a certain number of days on his lord's domain, he will only be able to use the same implements that he has been accustomed to on his own.

These remarks will, perhaps, account for the fact that there is no foreign agricultural machinery shown in direct competition with the English, and that almost the only agricultural implements in the foreign compartments are a few ploughs, mingled with the other articles.

Belgium exhibits some ploughs with a single stilt or handle, whence probably our Suffolk one-handled plough may have originated; France a few with cast-iron mouldboards, but keeping to their own ideas in form, and to the short beam and handle, which, by lessening the power of leverage, increases the difficulty of keeping a straight furrow. This is also particularly noticeable in the American ploughs, which, with the exception of the varnish and high finish, remind us of the prints in agricultural works intended to represent ploughs that were used several hundred years ago. They also show us, the Americans must either have a very friable soil to cultivate, or that their tillage operations are executed in a very imperfect manner."

ANALYSIS AND APPLICATION OF SOOT.

THE most neglected of all the valuable manures, available to every householder, is soot. In most cases the chimney sweeper is allowed to carry it away, rather than that he shall have a few more pence given to him for leaving the black treasure behind; for a treasure it is, and its value is shown by the fact, that the sweep has to be paid for leaving it, instead of for taking upon himself the trouble of removing it. The reason for this is, that the farmer knows well the value of soot as a top-dressing, even for his wheat; though applying it on the surface is the most wasteful of all modes of adding it to the soil. The value of soot, as a manure, principally arises from the salts of ammonia which it contains, and a large portion of these are lost

by exposing it to the sun and wind. The best time for applying soot, as a top-dressing, is during rainy weather, for the rain washes the ammoniacal salts into the soil before the sun and wind can drive them off.

Soot is that part of common coal which is driven off by the heat of the fire without being burnt; and, as the air which bears it along is cooled, it is deposited on the sides of the chimney. Soot is composed, therefore, of the most volatile parts of the coal, and of some of its most solid parts, in a state of very fine division. It has been analyzed, and 1,000 lbs. found to be composed as follows:—

Charcoal (very fine)	371 lbs.
Salts of ammonia	426 "
" potash and soda	24 "
Oxide (or rust) of iron	50 "
Silica (finny and very fine)	65 "
Alumina (pure clay, very fine)	31 "
Sulphate of lime (gypsum, or plaster of Paris)	31 "
Magnesia (carbonate of)	2 "
	1,000

Now, every one of the above constituents of soot are constituents also of our garden plants. The charcoal buried in the soil is gradually converted into carbonic acid gas, and in that form is sucked in both by the roots and leaves of plants; and all the other constituents are more or less soluble in rain water, and, consequently, are also taken in by the roots as food for their parent plants.

Having thus shown that soot might be recommended confidently as a valuable manure, even from a mere knowledge of the substances it contains, let us now see what practical men say, who have tried it in their gardens.

STRAWBERRIES.—Mr. Cuthill, of Denmark hill, Camberwell, who grows this fruit extensively in pots, puts a large handful of soot over the crock at the bottom of every pot. The roots of the plants, he says, delight in it, and it keeps out worms. He entertains a very high opinion of soot as a manure for all plants, thinking it both beneficial to them as a food, and as a protection against insects. He uses it largely as a manure for tulips, carnations, piacotees, and indeed all his crops, with the most marked success.

POTATOES.—So beneficial has soot been found, when dug into the ground at the time of planting, by Mr. Barnes, Mr. Morton, and others, that some persons have been so sanguine as to think it a preventive of the potato murrain. Although we do not entertain this opinion, yet we know it to be a capital manure for the potato. On a light soil, without any manure, the late Rev. E. Cartwright

grew 157 bushels of potatoes per acre; but an acre of the same soil, manured at the time of planting with thirty bushels of soot, and eight bushels of common salt, produced 240 bushels.

The grass of *lawns*, dressed in April, by sowing over them, in rainy weather, one bushel of soot to every seven square rods, we have seen increased in closeness and fineness of growth. But we think soot too valuable to be employed for that purpose.

LIQUID MANURE—Made of soot and water, has been found, by Mr. Barnes, and other gardeners, an excellent mode of employing it. One writer says—"My manure is soot mixed with water, in the proportion of one table-spoonful of soot to a quart of water, for plants in pots; but for asparagus, peas, &c., I use six quarts of soot to a hogshead of water. It must never be applied to plants whilst they are in a state of rest. It succeeds admirably with bulbs, and has benefitted every plant to which I have applied it."

PINE APPLES—Though not within our province—we may notice, are manured with soot, and most beneficially, by Mr. Fleming, at Trentham hall; Mr. Barnes, at Bicton, and Mr. Alexander, at Carleton Gardens.

CARROTS—Are much benefitted by soot; for if well mixed with the soil, it not only increases their size, but protects them from the carrot grub. The late Mr. G. Sinclair, gardener to the Duke of Bedford, found that an unmanured soil, which produced only 23 tons of carrots per acre, produced 40 tons when manured with $6\frac{1}{2}$ bushels of soot mixed with $6\frac{1}{2}$ bushels of salt.

ONIONS—Are benefitted by the application of soot, more perhaps than by any other manure. At the time of sowing, sprinkle soot thickly along the bottom of the drill, and stir it gently with the corner of the hoe before putting in the seed. It will improve the growth of the onion, and save them from the grub of the onion fly. After losing the plants of three sowings from the attacks of this pest, Mr. Moseley, of Rolleston-hall, at length put it to flight by watering the bed with the following mixture:—20 gallons of rain water, 1 peck of lime in lumps, half a peck of soot, 2 gallons of urine, 1 pound of soft soap, and 1 pound of flour of sulphur. This mixture was poured upon the bed so soon as it had settled sufficiently to pass through the rose of a watering-pot.

GARLIC AND SHALLOTS—When planted, should have only the root ends of their bulbs just buried in the soil; and at the spot where each is thus put in, about a dessert spoonful of soot should be sprinkled previously. This saves them from the attack of the grub, as well as from the decay to which they are subject.

QUANTITY PER ACRE.—Twenty bushels per acre is the smallest quantity that can be ap-

plied alone with much benefit, and twice that quantity is still more advantageous. The best time for applying it is at the time of sowing or planting a crop, or by pointing it in about the roots of plants in the spring, when they begin to grow.—*Cottage Gardener*, vol 1., page 155.

Captain McMahon, of Carlow, has a Kerry cow, giving twelve quarts of milk per day, which produces 12lbs. 10oz. of butter per week.

ANGER.—Wise anger is like fire from the flint; there is a great ado to bring it out; and when it does come, it is out again immediately.—*Mathew Henry*.

Being positive in judgment to-day is no proof that we shall not be of a different opinion to-morrow.

REMARKS ON THE PRESENT STATE OF AGRICULTURE IN CANADA.

As Exhibited in a Review of the Report of the Special Committee of the Honorable House of Assembly, on the state of Agriculture in Lower Canada, the Agricultural Journals of both sections of the Province, and the various Acts of Parliament regulating the Agricultural Societies now in existence,—compared with the general effects produced. By the author of "Remarks on Education," and "Remarks on the Geological Survey of Canada," which have at various times appeared in the Montreal Medical and Physical Journal; dedicated, with all respect, to the Honorable Members of the Legislature, and to the Agricultural Community of Canada at large."

As the publication of the work does not arise from any desire of profit, the price will be kept as low as possible,—not to exceed 1s. It is expected to consist of about 100 pages octavo, letter-press, of which about 100 will be devoted to the "Remarks," and the remainder to an Appendix, comprising the following useful and desirable documents:—Copies of the Report of the Special Committee, with its appendix, and of the Acts of Parliament above alluded to—to two Tabular Lists of the different Agricultural Societies in Upper and Lower

Canada; and two interesting extracts from Professor Johnston's valuable Report on the Agricultural Capabilities of New Brunswick,—as equally applicable to Canada.

We have been some time anxiously looking out for the work of which the above is the Prospectus, but are sorry to learn, on inquiry at the publishers, that the list of subscribers is still insufficient to defray the expense of publication, in consequence of the very low price to which he is restricted. This we regret, as we understand that one of the objects which the author had in view was to have the work in the hands of members of the legislature, during the present session of parliament. It is long since we commenced complaining of the apathy of the people of Canada on a subject of such vital importance to every class of the community. But so it is. In the wish to assist in, if possible, expediting the publication of this work, we beg to present such of our readers as may not have seen the advertisement with the above particulars; and from what we know of the respectable author's previous labors, we can assure them they may expect the subject to be well treated. The appendix alone would be worth more than the price of the whole book. [Reference to be made to the Publisher, J. C. Becket, Great St. James' Street, Montreal.]

DRAINAGE AND WEEDING.

SUFFICIENT drainage, and the destruction of weeds, is so necessary to the improvement of Canadian agriculture, that we feel it our duty constantly to advert to it. For the general advantage of the country, and to give a good example, all who possess the means should be very particular to drain their lands sufficiently, and keep down the growth of weeds. On all public works, whether in the hands of Government or of Corporations, this matter should be carefully attended to. So far as Military works, the most careful attention is given to drain, and not to suffer a weed to grow on any spot that is occupied

by the Military. We leave others to say whether the public works in the hands of the Government of our country, or in the hands of corporate bodies, are carefully attended to as regards draining and the keeping down of weeds. The only reply we would presume to make to this enquiry is to suggest a careful inspection of the whole of the public works in question. If they are found to be drained sufficiently, and kept clean from weeds, we shall not allude to them again; but if, on the contrary, it is found that draining and weeding are altogether neglected in numerous instances, we must say that it acts most injuriously upon the rights of private individuals, and as a bad example to the public. We often have had pointed out to us the neglect to these matters on public works in the neighboring states, and therefore why should we complain if we experience similar neglect. We, however, object to this sort of reasoning, and we deny the rights of public works, whether in the hands of Government or of Corporations, to do any injury whatever to individuals, without paying full compensation for it, or adapting means to prevent injury. This we conceive to be the principal of Canadian justice, and we should be very sorry to see it departed from. But all other considerations are out of the question, the bad example of suffering lands to be injured by water, and by seeds of weeds, has an exceedingly bad influence, particularly where there is no want of means to check or prevent those evils.

The Grand Provincial Exhibition of the Agricultural Association of Upper Canada, to be held at Brockville, on the 24th, 25th and 26th September, 1851, is advertised, and we perceive that about £1,200 is offered in Premiums for stock, implements, farm products, manufactures, &c., &c., &c. We have no doubt the Exhibition will be numerously attended, and we wish it all possible success. They appear to have got into the proper spirit for doing these

things well in Upper Canada. We hope at no distant period to be able to follow their example in Exhibitions; but even now we are prepared to enter into fair competition with our friends in Upper Canada in the progress of agricultural improvement. We have as good farming to show in Lower Canada as can be seen in any part of North America. We do not pretend that our farming is generally so, but we have a fair proportion, and this proportion is increasing every day. We know that this information will be satisfactory to our brother farmers of Upper Canada. We rejoice at their progress in improvements, and hope we shall not be far behind them. We have as much of good farming throughout Lower Canada as to prove that we understand what it is, and to answer as an example for the introduction of general improvement in our system of agriculture, and there is no doubt that improvement is advancing rapidly and prosperously.

"FARMERS' GUIDE—To scientific and practical agriculture," by Henry Stephens, F. R. S. E., assisted by Professor Norton, M. A., of Yale College, New Haven.

We have received from Mr. Davson, bookseller, Place d'Armes, Montreal, the 22nd and last number of this valuable work. This number contains a complete index to the whole. We have carefully perused the work from the commencement, and can recommend it to every farmer who has not made a resolution not to be instructed by any information that comes before him in a printed form. It is impossible to read the work without receiving an amount of benefit, equal to ten times the price of the book. Perhaps it may not in every instance be the best guide for a farmer in Canada, but in numerous instances it will be found as good and safe a guide as a farmer can have. The arrangement of the work altogether is excellent, and the illustrations of implements, and of every thing else, except those of some of the animals, are very good and accurate. We

have a great objection to illustrations of animals, unless they are exact likenesses, and that is seldom found in wood cuts. Indeed we frequently see illustrations of animals that give no idea of what the animals are in reality, and if they did, they would be the most ill-shaped brutes it would be possible to find. But apart from the illustrations of animals, some of which are very good in the Farmers' Guide, the book should be in the library of every farmer who has one, and it should be the first book for the library of the farmer who has not yet got one. Book-farming may be ridiculed by some parties who may think themselves very clever, but we feel persuaded, notwithstanding, that it has been the chief means of producing the recent improvements in agriculture.

A false and malicious communication appeared lately in the "Morning Courier," charging us with having fabricated a letter which appeared in the July number of this Journal, under the signature of "A Paying Subscriber," for the sole purpose of having "a slap at the publisher." This letter was from a subscriber residing on the St. Foy Road, near Quebec, Mr. Mathew Davidson, and we have the original in our possession, and far from designing to have "a slap at the publisher," as the malicious communication of "Humbug and Twaddle" would wish to insinuate, we thought the letter was calculated to serve the publisher, as it strongly advocated the extended circulation of the Journal through the County Agricultural Societies. The irregular delivery of the Journal by the agent of Quebec was complained of, but this was a trifling matter, easy to remedy, while the other suggestions contained in the letter, were very favorable to the Journal and to the publisher, and for the correctness of this view of the matter, we refer to the letter in question in the July number. In the same communication we are charged with forging another letter which appeared in the April number of the Journal, and

which praised us as editor "up to the skies." Fortunately we have the original of this letter, which was addressed to us in French by a Roman Catholic clergyman, and came to us through the post office from L'Islet; and we recollect that the day we received it, we had an occasion to go direct from the post office to the house of the then President of the Society, Alfred Pinsonneault, Esq., to whom we handed the letter before we had read it, and the name of the party is known to that gentleman. This communication appeared in the French Agricultural Journal. We had it translated into English for the English Journal, but after giving the copy to the printer, he returned it to us, telling us that it required to be revised, and we accordingly revised it and copied it in our own hand writing for the printer. This circumstance was known to several persons at Mr. Lovell's printing office. We also have the original translation made of this communication. Our revision of it may not have been perfectly correct, but it is in the power of any one who wishes to compare the English copy in the English Journal, with the original French copy in the French Journal. We feel perfectly persuaded that the communication which appeared in the "Morning Courier" was not written to serve any useful purpose, but with a malicious design to injure us in public estimation in our capacity as editor of this Journal, and Secretary of the Lower Canada Agricultural Society. We have many letters in our possession as flattering to us for our humble labors in the cause of Canadian Agriculture, as any that have been copied in the Agricultural Journal, and a few of them much more flattering.

We have inserted several communications without requiring the writers name, when they were harmless, and had reference only to Agricultural subjects and matters connected with them, and during a period of nine years that we have been editor of an Agricultural Journal, we trust we may appeal to the public that we have

never once offered intentional offence to, or written one line that was calculated to damage any one. We believe we know the author of the communication in the "Morning Courier," and that it is not the first time he has adopted the most unworthy and unjustifiable means to insult and damage us, although we never injured him nor had any thing whatever to do with him. Let him now come forward in his proper name, and the public will be able to appreciate him and his motives in this transaction, and in a former one connected with the April number of this Journal, when he made a most unvarrantable attempt, (and one which we believe no other man in Canada would be guilty of making) to interfere with, and supersede us as editor of this Journal.

AGRICULTURAL REPORT FOR JULY.

THE month of July up to the 20th was warm, with frequent falls of rain, and vegetation made great progress, particularly the late sown crops; the weather was, however, unfavorable for hay saving. The growth of weeds was equally rapid as that of cultivated plants, and we have never seen the fields have more weeds in the growing crops than this year, particularly wild mustard, which in many places appeared as if it was the only seed sown. Farmers generally do not seem to regard this plant as an injurious weed, and hence allow it to grow and perfect its seed, the greater part of which falls on the ground before the cultivated crop is ripe, and there the seed remains to grow again the next year, or in twenty years from this. It is impossible to destroy it except by weeding it out, or by summer fallowing the land. In the process of summer fallow, the seed in the soil might be sprouted, and when in plant again ploughed in, and thus the seed would be destroyed. The whole of the seed in the soil might not be sprouted by one ploughing, but it, probably, would be by repeated ploughings. It is said that the seed may remain in the

soil for 100 years, and vegetate, but if it is once sprouted its vitality may then be destroyed by ploughing in. The oxeye-daisy is another most pernicious weed, which it is almost impossible to eradicate, and is extending very much about Montreal. We have no doubt that it was introduced upon the farm we occupied by manure brought from Montreal, and, perhaps, some of the seed may have been mixed in clover and other grass seeds sown. This weed, allowed to prevail, will soon take exclusive possession of the soil, and although tillage will check it, we have seen it grow again with the first crop of grass or clover. It is possible, however, that the seed may have been carried to the soil during the period it has been in tillage. The farmer who allows weeds to mature constantly upon his land, not only injures himself, but does a great injury to his neighbors and the public. Manure carted from towns ought to be so managed by fermentation, that the vitality of all seeds that might remain in it, would be destroyed before it would be made use of in tillage. We once had a field of about seven acres, which we had cultivated from the forest, and after remaining in meadow a few years, without a weed appearing in it, we had it ploughed in the fall, intending it for potatoes, but in spring, in consequence of the uncertainty of the potato crop, we applied the manure that was brought from Montreal during the winter to the land in spring, and sowed barley in it, the land being of excellent quality, and well pulverized, and seeded it down again with clover and timothy. The following year there was a most luxuriant growth of clover and weeds, such as we had never seen upon the farm before. We cut it the next year for hay, and the weeds were not much diminished, and in this particular instance we are certain the seed of the weeds must have been in the manure. We believe that in the clover and timothy seeds, there are frequently seeds of weeds mixed with them, and it

is a difficult matter to discover the difference between some small seeds if nearly alike in color and size. There is not anything a farmer should be more particular in than the choice of seeds, not to sow any that were not pure and unmixed. In growing flax, for which this country is exceedingly well adapted, there is no pure seed to be had, and consequently the crop will be mixed with plants that are not flax, although they may resemble it. If it is desirable to cultivate flax, (and we are convinced it would be) we should have some pure seed imported from Russia or from Holland, (the first we would prefer) as there is not any seed, we believe, to be had in North America that is pure and unmixed. Weeds are generally allowed to prevail to a great extent in all parts of that country, and if one farmer should attempt to keep his farm clean, his next neighbor may not do so, and hence weeds will be constantly on the increase. Sowing most of our crops in drills, and introducing horse and hand hoeing upon every farm, is the only way to put a stop to the growth of weeds. We have seen the advantage of sowing fall wheat in drills this year. The straw is much stronger, the ears of wheat are of a more uniform size, and there are not many diminutive stems or ears, as in a crop sown broad cast. We would recommend where fall wheat cannot be sown in drills, that furrows should be shoveled, and the soil spread over the ridges, after the seed has been harrowed in. By all means it should be sown early—the last week of August or the first week of September. There are many places near Montreal and Quebec, where potatoes are dug out early, that fall wheat might be sown in drills. Four or five bushels of salt to the acre would be a useful application, and if mixed with three or four times that quantity of lime, so much the better. These substances should be harrowed in with the seed. We have never observed the beneficial effects of thorough draining, more clearly demons-

trated, than we did this spring. It is such a spring as this has been unusually wet, and cold, that the thorough draining is so advantageous. We have seen crops on thorough drained land this year, most luxuriant, and perfectly even in every part, while on land not so drained, the crops were poor and stunted and will not yield one third of the produce of the drained land. We, perhaps, introduce the subject of draining more frequently in consequence of having suffered severely from the want of it, where the remedy was not in our own power. This circumstance demonstrated in the clearest manner possible that upon soil too much saturated with moisture cultivated crops could not be raised advantageously. The great advantage of sufficient draining is the certainty it affords the farmer of being able to cultivate his lands in the proper time, in almost any season, however wet. We observed that peas are a very luxuriant crop this year in many places notwithstanding that the season has been unusually wet. The danger now to be apprehended is mildew should the weather continue to be moist, and hence increase the foliage. A luxuriant foliage is not always sure to produce the most abundant crop of grain, and in peas particularly this is the case.

We have heard complaints of the wheat fly but to wheat extent it may have damaged the wheat we are not aware. There is some fall and spring wheat growing on the farm upon which we reside, and the fall wheat was coming into ear about the 25th of June. Some spring wheat sown the 12th of April was coming into ear the first week of July, but although we have carefully watched for the wheat fly, we have not seen many of them this year, nor do we see much injury done to the wheat on this farm. We attribute this circumstance, in a great measure, to there having been no wheat grown last year in any direction, whether 10 acres of where it is growing this year and the interme-

diate space, is all in meadow or pasture, and consequently the wheat maggot could not have taken up its winter quarters in the soil within that distance of where the wheat is now growing. We have no doubt that the wheat fly is produced in spring from the maggots that destroy the grain the previous summer, and then falls out of the ear upon the ground and remains in the soil during winter, and in spring becomes the wheat fly. The insect is not capable of travelling to any great distance, and we have never seen them move many feet from where they remain concealed about the roots of the wheat during the day. They rise from this place of concealment late in the evening, when the weather is perfectly calm, and go to their work of destruction, by depositing their eggs or larvæ in the ears of wheat; but if there is the slightest breeze of wind they will not leave their place of retreat. While wheat crops are injured by the fly and wheat is constantly grown near the place where the crop was damaged the year previous, there is not much chance that it will escape from injury, unless sown after the 20th of May, or unless the wheat is a variety that will resist the fly, and the only variety that we believe will be nearly proof against their ravages is the flint wheat. It is almost impossible to sow spring wheat here that will be in ear many days before the end of July when the fly appears, and it is the great advantage of fall wheat that it may be in ear before the last week of June, and be out of the power of the fly to damage it.

The month of July has been too wet and warm we fear for the healthy growth of the potato crop, and we have been told that disease has appeared in some of the early sown. If the weather was now to become dry it would probably check or prevent disease. There should be the greatest care observed in the cultivation of the potato, not to apply farm-yard manure in large quantities at the time of planting,

but rather to employ special manures, including ashes, soot, salt and lime, if to be had. Potatoes should also be planted a considerable distance apart in drills or be planted in alternate drills with beans or indian-corn. It is a very serious matter that the principal feed of man, wheat and potatoes, should be liable to destruction by the wheat insect, and by a disease that has never yet been satisfactorily accounted for. With all our high pretensions, we cannot check the wheat insect unless by sowing wheat at such a time that it will not come in ear when the fly appears, and potatoes, notwithstanding every precaution, will occasionally be diseased, and become useless for food. These circumstances should remind us, that after all we can do for ourselves, it is the Giver of all good who alone can bless our labors with success, and grant us an abundant harvest. The season has been favorable for meadows and pastures, and the farmers' stock should be in good condition this year. The markets are well supplied, and prices moderate. The orchards in Montreal and in the neighborhood do not promise to yield much fruit for this year. The general appearance of the country is very favorable, and a large portion of the crops look most luxuriant, and all appear healthy. We may therefore hope that we shall have fine weather to mature the crops, and harvest them. The prices of produce may be low, but a large production for the use of man and his domestic animals, is always desirable and advantageous for a country, and we hope our next report will be as favorable as farmers could wish for.

Since writing the foregoing part of the Report, we had an opportunity of seeing most of the crops on the island of Montreal, and find that the heavy rains and hail in the latter end of July, have beaten down some of the heavy and best crops. There is also a considerable portion of hay spoiled that had been cut, and heavy crops of hay not yet cut down, are deteriorating in quality every day they remain in that state.

If the favorable change in the weather the last few days continues, it will be an immense advantage to the farmers and to the country, be the means of saving much of the hay crop that would otherwise be useless, and would probably check the further progress of disease in the potato which has undoubtedly made its appearance in some places. The wheat fly has done considerable damage, but with fine weather we shall have a fair crop of wheat, as it has been extensively sown, and looks well wherever justice has been done to the land.

31st July, 1851.

The following is the report of the Judges on Crops, for the County of Montreal Agricultural Society, for the present year:—

JUDGES:

MESSRS. A. KIMPTON; WM. EVANS: J. B. QUESNEL.

WHEAT.

Mr. John Prenner, Lachine; Mr. John Drummond, Petite Cote; Mr. Wm. Lenny, Long Point; Mr. Smith, Waterloo; Mr. Craik, St. Luke.

OATS.

Mr. Logan, Montreal; Mr. Allen, Bout de l'Isle; Mr. Kidd, Petite Cote; Mr. Crawford, Lachine.

POTATOES.

Mr. Harland, St. Laurent; Mr. Kidd, Petite Cote; Mr. Dawes, Lachine; Mr. D. Drummond, Petite Cote; Mr. Scott, St. Michell.

BARLEY.

Mr. Dawes, Lachine; Mr. Logan, Montreal; Mr. Morice Gougeon, Cote St. Pierre; Mr. Muir, St. Laurent.

PEASE.

Mr. Leishman, Lachine; Mr. Jerome Decarie, Cote St. Pierre; Mr. Peter Fisher, Long Point; Mrs. Mills, Cote St. Pierre.

HORSE BEANS.

Mr. Smith, Waterloo; Mr. Thompson Cote des Neiges; Mr. James Fisher, River des Prairies; Mr. Leon Laporte, Point aux Trembles.

INDIAN CORN.

Mr. Louis Dajenais, Point Claire; Mr. Antoine Gougeon, Cote St. Pierre; Mr. Hibbard, Long Point.

TIMOTHY.

Mr. Robert Boa, St. Laurent; Mr. Ogilive, St. Michel; Mr. Hutchison, St. Laurent.

CLOVER.

No Competitors.

FLAX.

Mr. John Prenner, Lachine; Mr. Desjardins, River des Prairies.

CARROTS.

Mr. Peel, Montreal; Mr. Brodie, Cote St. Pierre; Mr. Quinn, Long Point.

MANGEL WURZEL.

Mr. Headly, River St. Pierre; Mr. Peel, Montreal; Mr. Joseph Lepout, Long Point.

TURNIPS.

Mr. Loghead, Currant St. Marry; Mr. Allen, Bout de l'Isle; Mr. Hugh Campbell, Petite Cote.

BEST MANAGED FARMS.

Mr. John Drummond, Petite Cote; Mr. Penner, Lachine; Mr. James Somerville, do; Mr. Lanouette, River St. Pierre.

The Inspectors of Crops respectfully recommended Antoine Seurs, of Lachine, and Wm. Lenney of Long Point, for premiums for summer follow. Also, Louis Dajenais, of Point Claire, for great exertions in the improvement of his farm, which he is carrying out with great judgment, and in the best manner. Further, they beg to mention Mr. Crevier, of St. Laurent, for his excellent improvements. All which is submitted.

ALPHEUS KIMPTON,
WM. EVANS,
J. B. QUESNEL,

A. MONTREUIL,
Secretary.
1st August, 1851.

WOOL.—We were under the impression, that there was not a certain or favorable market in Lower Canada for wool, but we have been told by a gentleman lately, that the proprietors of the woolen manufactory at Chambly alone, had to import last year 20,000 lbs. of wool from England for their manufactory. We suppose the very least amount which this wool would have cost when at Chambly, would be from £1,500 to £2,000. It is certainly an extraordinary circumstance that this quantity of wool could not have been supplied by Canadian farmers, or five times the quantity if required—unless the wool imported was coarse Highland wool that sells at a very low price. The price which ordinary English wool would have cost when

landed here, would be a very good price for the Canadian farmer to obtain for his wool. There must be something wrong in the matter; it appears like “sending coals to Newcastle,” to import wool from England to manufacture in Canada. We have land in abundance, and the country is not by any means unfavorable for sheep, and therefore we do not see why we should not be able to supply our manufacturers with all the wool they may require.

GARDENS.—We insert, with pleasure, the communication of “Observer” on the subject of gardens. There is, undoubtedly, a general want of good kitchen-gardens throughout the country, whatever may be the cause, and as our correspondent observes, a good garden might produce a considerable portion of the support of the family during the summer season. There are some handsome gardens in the country, and well stocked with flowers, but they are small and deficient in many things necessary for a good kitchen-garden. Farmers that are not very wealthy, cannot of course employ a regular gardener, or spend a large portion of their time in the garden, but, nevertheless, a useful garden might be an appendage of every farm-house, and both soil and climate are favorable for them. One acre of garden-ground has been frequently known to yield a produce in a year that sells for from £200 to £300 in the London markets. It is incredible what one acre of well cultivated land would be made to produce in a year.

To the Editor of the Agricultural Journal.

DEAR SIR,—It has often been a matter of surprise to me, that on large farms such small, and very often miserably poor, kitchen-gardens are seen. This appears to me rather an anomaly, for I had always conceived that they had advantages and facilities for keeping good gardens which no others were possessed of. There is no doubt it proceeds from neglect and carelessness, but I cannot help thinking that neglect and carelessness grow, and strongly against their own interests—not to say anything of the

pleasure or amusement to be derived from such a source; a very profitable revenue might be raised from the products of well-kept gardens, and the advantages of which would more especially apply to those in the immediate vicinity of large towns, or good and ready markets, besides furnishing the board with abundance of healthful and gratifying viands. I have remarked too a great scarcity of good orchards—true, there are many orchards where some fine fruit is raised, but there is not that care of selection in the *kinds* of the fruit which ought to be shown; and many large farms of 300 acres are totally without them.

I was struck with this in a recent tour through the surrounding country, and I regretted to see it, as good gardens and plentiful orchards are so connected and associated with a farm. I beg to remain,

Yours truly,
OBSERVER.

AGRICULTURE IN EAST-LOTHIAN IN THE LAST CENTURY.

BEFORE proceeding farther with the improvements, it will be well to take a retrospective glance at the state of the country previous to the date to which we formerly limited our remarks, viz., 1786. The Phantassie property may be selected as perhaps the best for this purpose, affording the most striking example how much of the present fertility of East-Lothian is owing to a comparatively long course of high cultivation. Within a space not extending eighty years, a portion of the property lying betwixt the public road and the Tyne was in a state of nature. The tenant at that time was Mr. James Rennie, father of the celebrated George Rennie, and still more celebrated engineer Sir John Rennie. George Rennie, when a boy, was herding the horses upon the land, and one evening, having lost sight of them among the brushwood and broom which then covered it, they could not found that night. Within these ten years the same land has been let in grass for pasture for upwards of £6 per Scotch acre. Even after this period, what was cultivated of Phantassie produced such a growth of wild mustard, &c., that there was often difficulty in obtaining corn to make bands to tie up the bundles of weeds. After his father's death, George Rennie entered upon the farm, and partly from a large supply of manure obtained from a distillery at Linton, and partly by the introduction of the drill husbandry, the land soon became comparatively fertile. About the beginning of the present century the

Earl of Aberdeen was proprietor of the original land of Phantassie and East Fortune. They were purchased together by a Mr. Walker for the sum of £50,000. With him Mr. Rennie had made an agreement before the purchase, that on its being effected they should get equal shares of the property. Mr. Rennie's share, however, being considered the best, he had to pay £27,000, and to this portion of land he afterwards added other 90 acres, purchased from neighboring small proprietors. This property was sold in 1813 for about £63,500. East Fortune is now offered for sale, upset price £33,000. East Craig, another property now in the market, was purchased in the latter half of the last century at £18,000; the upset price is now upwards of £9,000. When this property was purchased, it was intermixed with another property, and let at £60 for the whole hundred and sixty acres. It was afterwards sub-divided, and at one time let for £4 4s. per acre; but the landlord and tenant quarreling, the tenant offered to give up the farm, which was accepted. The landlord farmed it for several years himself, and it was afterwards let at £2 2s. 6d. The present rent is in wheat. West Barns was let about 1760, upon a lease, at £2 2s.—then believed to be the highest rent in the county. The present rent is upwards of £5 5s. Lawhead, about 1760, was let for £60, or about 5s. per acre; in 1790 at £260; next lease, in 1809, £600, which, however, was afterwards converted into a grain rent. Castleona sea-coast farm, containing about 450 acres, was let in 1779, only part then arable, about £200; in 1798 at £1,200; in 1817 at about £1,600; but, owing to great agricultural distress which prevailed in 1823, the money was converted into wheat at 70s. per quarter, or 450 quarters of wheat. In 1834 the farm was partially divided, but let upon the whole at more quarters of wheat. The North Berwick Mains was let at the close of the last century for £2 2s., in 1812 for £7 5s., in 1823 also converted into wheat at 70s. per quarter. It was let in 1830 at about twelve bushels of wheat, and re-let in 1849 at a slight rise. One of the most marked improvements which has taken place has been in land lying immediately to the west of Lawhead. At the end of last century a park of sixty acres in grass was let for £3. The land is now in possession of the proprietor, but it would, if let, bring something near £100. If we take land nearer the Lammermoors, such as the farm of Duncanlaw, consisting of between 200 and 300 acres, we find it let in 1722 for money, grain, service, &c., on a lease of three fifteen years, with a grassum at the beginning of every fifteen, the rent thus made up amounting altogether to about 4s. an acre. A new lease was granted in 1752 at a slight decline, for two fifteens and a liferent to the then possessor. It was again let in 1816 at 30s.

6d. per acre. Ewingston, another high-lying farm, let in 1782 on a liferent lease at £200, was in 1845 let for £650. These are fair examples of the rise in rents, and in the market value of land. The last sales show a tendency of greater advance of the selling value as compared with the yearly return. This rise in the market value of land has not been caused by a rise in the price of farm produce; on the contrary, the fall in the price of grain is equally remarkable. Take Phantassie as an example. The average price of the preceding ten years of wheat, barley and oats, previous to Mr. Rennie's purchase, was about triple the average of the ten preceding years of the same grain previous to Mr. Mitchell James's purchase in 1843.

Towards the close of the last and beginning of the present century, rents rapidly began to rise. They had previously remained nearly stationary for a century. The civil wars in the early half of the eighteenth century would so far operate in keeping them low; but the principal cause was that, up even to the close of the century, farmers had been content with the unaided natural produce of the soil; about that period a greater degree of enterprise was infused into them, partly from the rise in price, but chiefly from the results anticipated from turnip cultivation. During the last century, leases were generally granted for a specified term of years, and at the end of the term further in liferent to the possessor. Rents not only consisted of money payments, with or without grain, but meal, kain-hains, service, and, to the end of the century, thirlage to certain mills. The tenant also became bound to perform certain duties, such as riding marches, days' labour in hay time or harvest. The leases were short, simple, and easily understood, and were so far better than the present forms of leases, which generally contain clauses full of ambiguity and one-sidedness. With a rise of rents and prices tenants began to display more enterprise, particularly in adding to their possessions. Improvements were stimulated by the introduction of turnip husbandry. The profits obtained from the fattening of stock were not in general great. Three-pence per week was considered a fair profit for feeding a sheep, now 6d. is the common rate. The great fluctuations which took place in the price of animal food produced a spirit of gambling in the purchasing of stock. This arose, of course, from the profits of feeding being occasionally very large; in one instance we know of £33 per acre was realized from the folding of sheep on turnip. The following list of actual purchases and sales will indicate the rate of these profits:—Purchased at Falkirk Tryst as follows:—Cheviot wethers at 14s., sold in spring, fat, at 43s.; resold by purchaser again at 44s. Sixty-three black-faced ewes for £15

or £5 per clad score, sold in spring the first twenty-two lambs for £15. Cattle at £5 sold, fat, for £10.

At this period, on ordinary soils, not more than from 2 to 5 per cent. of the farm was under a turnip crop; now the same lands will have from 20 to 25 per cent. under turnip, and by the use of other substances, such as oilcake, corn, &c., even this amount of food is often doubled. The number of animals fed then and now is as follows, taking the same farm:—About 1786, the average number of cattle fed was five; After the turnips were grown in drills, the number rapidly increased. In the average of the last ten years, the number of fed cattle has been upwards eighty, exclusive of sheep. As a necessary consequence, the supply of manure has increased in proportion. On the same farm the extent of land manured in 1786 was generally about five acres, now from sixty to eighty acres; besides there is yearly expended a considerable sum on foreign manures: The produce of the grain crops has also increased, but not in the same proportion with the fattening of stock. The quantity of grain sold has certainly more than doubled, and on most farms wheat particularly has been more than quadrupled. The Haddington Market returns, previous to the opening of the North British Railway, so far confirm this estimate. This increase of grain arises not alone from increase of produce per acre but also from a greater breadth of land being under crop. On most farms at least one-fourth of the land was uncultivated, and to all appearance never had been under the plough. This, after being reclaimed and lined, often produced luxuriant crops of oats, followed by beans or peas. On the farm we have been alluding to the number of horses kept was eight, there being two four-horses ploughs; now there are ten, or five pair; number of hinds two, with three boys—two to drive the plough, and one to attend to the stock; now there are five, with one shepherd, and a foreman, and an extra boy or two to attend to stock. The out-door labor was, as is still the practice in several districts of Scotland, performed by the ploughmen, with the assistance of the household; now there are generally employed during summer ten out-door workers. In 1786 the household servants received £1 per half-year, now £3 to £4; hinds then received 43 bushels of oats, 18 bushels of barley and eight bushels of peas or beans, one peck of lint sowing, a few potatoes planted, and the keep of a cow—the cow at this period always sharing the coat-house with his owner. They were also allowed to keep hens, paying kain to the tenant; now they receive 72 bushels of oats, 18 bushels of barley, and eight bushels of beans, with £1 for lint, and one thousand yards of potatoes planted or from three to five bolls, with the keep of a cow or £5 or

£6 in lieu. The paying of ploughmen in grain is nearly confined to this county—all the hinds upon a farm receiving the same "gains." The foreman paid a few extras. During last century, from the absence of fences and sown grass, horses were herding during the day upon the wastes and pastures, and at night were confined to the stable, and often fed with thistles pulled during the day by the hinds. The pulling of a back-load of thistles out from among the growing crops was considered a day's work, and was their usual summer occupation. During winter the ploughmen, and even the farmers' sons, instead of going to school, had to trash in the morning and, afterwards to follow the plough during the day. This is a common practice yet in the west upland districts of Scotland. The want of fuel was severely felt. Furze, and, where possible to obtain it, turf formed the chief supply. Now the farmer carts for the hinds and cottars generally as many coals as they choose to pay for. The whole gains of a hind could not exceed £12 to £14, now even with the present prices it must be about double this sum. At that time tea was never to be seen in a cottar's house, now it generally forms a part at least of the afternoon repast. The boys that drive the plough got from 20s. to 30s. per half-year, and were fed in the house, sleeping in the stable—now they get, when so engaged, from £3 to £5. They often underwent great hardships, and little regard was paid to stated hours of labor. In the last century, at cock-crowing, three o'clock A. M., they got up and foddered all the stock. Artisans were paid at proportionately low rates. The payment of a tailor per day was then 4d., with food, now it is 1s. 6d., with food. Smiths, wrights, in proportion, being both paid in grain—generally oats. Day laborers received 8d. per day, now 1s. 6d. to 1s. 8d.; females (but seldom employed) 4d., now from 8d. to 10d. Baron Hepburn, writing in 1793, states "I remember since laborers received 5d. during winter, and 6d. during summer, harvest excepted. When we reflect upon the price of clothing, food, &c., the wonder is how they maintained themselves and families. Harvest laborers were usually engaged for the whole harvest, extending generally to three weeks at 10s. with food—now they are engaged by the week at from 6s. to 10s. The hands employed were generally people of the district, with a few stray Highlanders. Few Highlanders come now, although harvest wages for six or eight weeks may amount to from £2 to £3. The strong national dislike to the Irish now prevents the Highlanders from coming. Previous to the introduction of the Irish, the Highlanders were extremely difficult to manage, and at the time of the feeing markets, held weekly at Linton during harvest, a small detachment of military had to be kept ready in the

neighborhood, with special constables—now, neither are required. Reapers were sometimes so scarce during the war that military had to be got from Edinburgh to cut down the crops—now the number of Irish is so great that they are seldom all employed even at the busiest time of harvest. Their introduction into the county is comparatively recent. About forty years ago two Irishmen came for harvest work, and remained all harvest work, and remained all harvest at Waughton. They have rapidly increased, till not less than 12,000 are annually employed within the county, accompanied by women and children at least to another 1,000, who live by begging.

About the middle of the eighteenth century a few potatoes were introduced, supposed to be from Ireland. At first the cultivation was confined to the gardens, and were not grown to any great extent. When the cultivation extended to the field the great want of manure restricted their cultivation, and the demand for them was comparatively limited. The taste of the people at first was rather against their extensive use: but they soon began to appreciate them as an article of diet.

Mr. John Dudgeon, of Tynningham, and Thomas Russell, a market gardener at Waughton, were the first who grew them to any extent. Towards the end of the last century the disease termed curl affected them. It was soon discovered that this could be prevented by changing the seed from a high district to a low one. It is somewhat remarkable, that still the period of the potato rot a change of seed was always found necessary; now the disease termed curl is comparatively unknown, and little attention is bestowed on changing from one district to another.

Neither the climate nor soil of East-Lothian is the best suited for the growth of the potato, the former being considered too dry, and the latter containing too much clay. Its cultivation up to the period of the rot had not been found profitable, except that of the coarser varieties for fattening stock, and comparatively few even of these were grown.

About 1830, some farmers commenced to grow them extensively for the Newcastle and London market, but in the end it proved unprofitable. The expense of rising them with the uncertainty of the rates obtained partially caused this. It is only since furrow draining and the more extended introduction of portable manures, that potatoes have come to be considered by the best farmers as a profitable crop.

The railway which now intersects the county, affords an easy access to the Edinburgh and Glasgow markets—added to this for the last four years, the disease has been almost unknown in this county, while, on the western coast, the potato crop continues

to fail. From the high prices thus obtained for the potato, it has been found by far the most profitable crop in this county, some farmers realizing as much as £30 per acre. This has induced several farmers to extend the breadth planted. This extent has been gradually increasing, and some farmers have begun to substitute the potato for the bean crop in the six-course rotation. The most common varieties now cultivated are the Regents and Cups; the latter when first introduced were found of such inferior quality, as to be only suitable for giving to stock; now the quality is generally good, particularly in the spring months.—*North British Agriculturist.*

A light Biscuit.—Half-pound of flour, three ounces of butter or fresh lard, two ounces of sugar, one egg, half a teaspoonful of volatile salts.

A Remedy for a Burn, which will remove the pain in a few minutes.—Half-a-pound of camphor broken up in a pint of good rum. Keep it well corked and tied with a bit of bladder. Apply it with a linen rag to the part affected.

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The undersigned gives notice to the public in general that he has just invented a

THRASHING MACHINE,

which exceeds, by one-half, the power of all others used in this Province; and is ready to thrash with this New Machine

1,500 Sheaves per day,

making clean grain. He will also undertake that with the same horse power and with grain of the same quality, he will thrash fully one-half more than any other hitherto manufactured or seen in this Province, with the further advantage that his New Machine will clean the grain so as to fit it at once for Market or Mill.

Not only does the New Machine possess the movements necessary for thrashing Wheat, Oats, Rye and Buck Wheat; but also Pens, Beans and Indian corn; and the last may be husked.

It is also to be remarked that it economizes at least three quarters of the oil which is used to prevent friction, which is due to a newly contrived groove. And not only will this advantage be perceived, but eight others, all replete with powers, which have never been known in any other machines in this Province. Those who wish to purchase, have only to visit the workshops of the undersigned, Great St. Joseph Street. The conditions will be easy, and the advantage of the machine being guaranteed. A deduction of \$100 will be made if the machines do not thrash one-half more than machines from other shops.

JOSEPH PARADIS.

Montreal, 1st Decmber, 1850.

AGRICULTURAL SOCIETY.

Office of the Society, at No. 25, Notre Dame Street, Montreal, opposite the CITY HALL, and over the SEED STORE of Mr. George Shepherd, Seedsman of the Society, where the Secretary of the Society, Wm. Evans, Esq., is in attendance daily, from 10 to 1 o'clock.

MATTHEW MOODY,

MANUFACTURER OF
THRASHING MACHINES, REAPING MACHINES, STUMP AND STONE EXTRACTORS, ROOT CUTTERS, REVOLVING AND CAST-STEEL HORSE RAKES, PATENT CHURNS, WAGGONS, &c. &c. &c.

THE Subscriber has been employed since 1846 in manufacturing his improved THRASHING MACHINES, with Horse powers. He was awarded the highest Prize at the Terrebonne County exhibition after competition with many others. They have thrashed and cleaned, with 2 horses, from 100 to 124 minots of Wheat per day, and from 200 to 250 of Oats, and have given universal satisfaction. He guarantees all purchasers for any recourse by Paige & Co., of Montreal, who allege having a patent for these machines, dated December, 1848! and warrants them equal to any made here or elsewhere, for efficiency and durability.

One of his Reaping Machines may be seen at Kerr's Hotel, St. Lawrence Street, price £25.

Having lately erected new and enlarged Works for the above articles, he will execute promptly all orders in his line.

Thrashing Mills constantly on hand. Two second hand Mills, in warranted order, cheap for cash.

Thrashing Mills repaired, and finishing work done.

Agency in Montreal, at Ladd's Foundry, Grifftown; in St. Andrews, L. C., at Mr. Henry Kempley's.

TERREBONNE, August, 1850.

THE SNOW DROP; A JUVENILE MAGAZINE.

THE publication of the "Snow Drop," THE ONLY WORK OF THE KIND IN CANADA, will continue to be conducted by the Subscriber. The first number of Vol. 2, new series, is now ready, and will be forwarded at the earliest notice to new subscribers. Each succeeding number will contain not less than four wood engravings, and one appropriate piece of music, besides many other embellishments which will increase the interest of the work. In short, the publisher pledges himself to spare no reasonable exertion to make the Magazine all that is desirable, or could be expected, in a publication designed for young people.

The Editorial department will be continued by the same talented and popular writers who have been so successful in rendering the Magazine not only entertaining, but highly useful and instructive.

It will be printed, as heretofore, by Mr. John Lovell, whose extensive printing establishment affords every facility for executing it in the best style. It will be printed uniformly upon paper of a superior quality, manufactured expressly for the purpose, by Messrs. W. Miller & Co.

It is hoped that the interest thrown in the work,

will lead its former patrons to continue not only their support personally, but induce them to lend their influence in favor of a wide circulation.

That the work may receive a circulation commensurate with its importance, the following inducements are offered for the formation of clubs.

Any person who will forward \$4, free of postage, shall receive five copies of the "Snow Drop" for one year. There probably is not a town in Canada, in which four subscribers could not be obtained; any boy or girl disposed to make an effort, can at least, secure this number, and by sending the publisher the amount specified, will receive four copies for their subscribers, and one copy as a reward for the effort.

R. W. LAY.

MONTREAL, 1st July, 1851.

Extract from Notarial agreement entered into between the Lower Canada Agricultural Society and R. W. Lay.

ARTICLE 1. It is also further covenanted and agreed by and between the said parties hereto, that the said party of the second part (R. W. Lay) is by virtue of these presents constituted, the attorney of the said parties of the first part pending the present contract, and not further, for the express purpose and with full power and authority to collect all arrears for subscriptions due by subscribers to said Journal while published heretofore by the said parties of the first part.

(Signed,) ALFRED PINSONNEAULT, President.
WM. EVANS, Secretary.

THE AGRICULTURAL JOURNAL AND TRANSACTIONS OF THE LOWER CANADA AGRICULTURAL SOCIETY, in the French and English languages, will hereafter be published by the Subscriber, to whom all COMMUNICATIONS relative to SUBSCRIPTIONS, ADVERTISEMENTS, and all business matters connected with the past or forthcoming volumes of the Journal, must be made.

The work will be increased in value and interest, by the introduction of DIAGRAMS of the FIXTURES and IMPLEMENTS of HUSBANDRY, together with PLANS of MODERN FARM BUILDINGS, and descriptions of the best variety of Fruits, Illustrations of Domestic Animals, &c.

As Publisher of the JOURNAL, I have wished to visit Agents and Subscribers to the Work, in the different parishes in Canada, to ascertain the interest felt in its prosperity, and awaken, if possible, a fresh zeal in the cause of Agricultural improvement. This I have done to some extent; but I regret that business here, obliges me to defer for the present many of my proposed visits. I have therefore, conceived the idea of addressing a Circular to the Clergy and Agents, confident that they will feel deeply interested in the wide dissemination of the Work, and cheerfully distribute the Circulars in an advantageous manner.

Anxious to avail myself of every facility to secure an extensive circulation to the JOURNAL, I have made successful application to the Hon. Mr. Morris, Post-Master-General, to send the French Journal and Circulars to all parts of the Province free of postage, for six months. At the end of that time it is hoped that free postage for papers and periodicals will become a permanent thing.

I have not sent the JOURNAL in every case where there were subscribers before, for these reasons:—I had no means of knowing who would continue it; and I thought it better to wait, being assured that all who wished to obtain the Work would give me notice. I trust this may be a satisfactory explanation, and that I shall receive orders from every quarter fully proportioned to its importance.

The Journal contains 32 pages Monthly, is published at \$1 per annum, and any one obtaining new Subscribers, on remitting \$5, will be entitled to Six Copies of the Journal for one year.

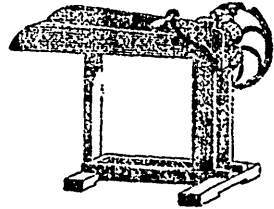
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