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THE

Canadian Agriculturist,

OR

URNAL AND TRANSACTIONS OF THE BOARD OF AGRICULTURE

OF UPPER CANADA.

L. XIII. TORONTO, APRIL 1, 1861. No. 7.

Feeding of Horses.

he Horse while it is the most useful, is also ost expensive animal of the farm. In this try the same animal is generally used for irposes,—in drawing the pleasure carriage ll as the plough or wagon, and also for the e. Ours are in fact horses of all work;— enerally of large size and powerful muscle, light and active, and wiry, and not unfretly possess great power of endurance. Per- on the whole, they are pretty well suited e wants and peculiarities of the country. elieve, however, that our horses of late years not kept pace in improvement with horned , and others of the domesticated animals. fusion of fresh blood is, in many districts needed; and the importation of a few first ure bloods of the hunting and racing types, soon bring about changes and improve- of the most desirable and important kind. horse should be both fed and worked as rly as possible; avoiding alike great and pampering. He is by organization a nsitive animal, and greatly affected for good by the nature of the treatment he receives, e conditions in which he is placed. As a thing the food of our horses is not suf- y varied. Hay, straw, and oats, in a dry cut state, constitute their only food for a ortion of the year. These valuable ma- whould be rendered much more suitable ing; steaming the two former, and bruising the latter. Steaming in some instances may be thought inconvenient, and too troublesome; but cutting or bruising all kinds of dry food can be readily practised, and will be found economical. When whole oats are fed to horses a considerable portion, by escaping mastication, passes through the intestines, without yielding up to the wants of the animal but a small portion of nutritive matter.

We have said that Horses should be fed with systematic regularity, and both the quantity and quality of their food should be modified according to the kind and amount of work they perform. The amount of hay and grain fed to horses may be considerably dimmished by giving them a small quantity of bran and roots daily. Swedish turnips and carrots, either boiled, steamed, or given raw, are an excellent food, and potatoes and mangels, in moderate quantity, may be given with advantage. During our long Winters and protracted Springs, succulent food of this nature will greatly tend to keep horses in a thriving healthy condition; and every farmer should grow roots for his horses, as well as for his cattle. The white, or Belgian Carrot, yields a heavy crop in Canada, if properly cultivated; and when fed to horses tends to promote a soft sleek coat, and to strengthen the functions of the respiratory organs. Systematic feeding, cleanliness, a literal supply of pure water, and sufficient warmth and protection, combined with adequate ventilation, will not only promote the

health and strength of the horse, but will materially add to his years of active and profitable labor. We condense the following account of the method of feeding horses practised by Mr. John Croall, of Edinburgh, one of the largest work-horse proprietors in Britain, from the *Journal of Agriculture*.

His horses are fed as follows:

4 lbs of cut wheat, or oat straw, or chaff.
½ lb. of crushed oil cake.
1 lb. of barley.
1 lb. of beans.
2 oz. of linseed.
½ oz. of salt.

This is one feed for a horse, and the mixture is thus prepared:—The cut straw or chaff is spread out in a large wooden trough to the depth of six inches; the other ingredients are boiled into a liquid, and poured over the chaff; a fresh layer of chaff is spread over it, and then another dose of the mixture given, and so on, layer upon layer, till the trough is filled, when the whole is thoroughly mixed together and allowed to cool. Besides the above, each horse is allowed a bunch of wheat straw in their racks, and 12lbs of bruised oats mixed with peas, barley, wheat, or beans, with a sprinkling of salt, but no hay. Carrots are also a favourite article of diet. A case is mentioned of a farmer feeding his horses on 5½ stones of carrots, and 2½ stones of hay made into chaff, during the winter months. As the days became longer, some oats were added to the carrots and hay. When the carrots failed, 16 lbs. of oats did not keep them in as good condition as the 5½ stones of carrots. We shall be glad to be favored with an acccount of the practice of any of our readers, who have had experience in this important department of of farm-economy.

The Great International Exhibition of 1862.

It has been, finally decided that another World's Exhibition of human skill and industry in all the various departments of arts and manufactures, agriculture, &c., shall be held in London during the year 1862. A guarantee fund, amounting already to about two millions of dollars, has been commenced, and the necessary preliminary arrangements have been completed From the experience they have had in Europe in the management of these gigantic exhibitions, and the absorbing interest felt therein, the forthcoming exposition of the world's industry and civilization, will, it is confidently believed, very far exceed any of its predecessors.

It will be in the recollection of many of our readers, that Canada occupied a distinguished position at the first great exhibition held in London, in 1851, and also in that of Paris, in 1855. The amount of benefit, which this Province has, in different was, received in consequence thereof, it is impossible to calculate. Our position as a member of the great confederacy of civilized nations, has been recognized and respected; and we must be careful to show the world, by occupying our proper place in the exhibition of next year, that we are still moving onwards. It is of the utmost importance that our people should commence preparing *in time*. The Spring of 1861 will soon come round; and how much there is to do between this and then, provided we are determined to do our best. can hardly be conceived. We are glad to observe that our Board of Arts and Manfactures has already moved the matter, and the Board of Agriculture did the same, at its last meeting.

Nothing, probably, can be finally or very definitely determined on, till the intentions the Government are made known. In the meantime, our artisans and mechanics, among whom of course we include agricultural implement makers, should be on the alert, as no time should be lost in deciding what they are to capable of doing. And we trust that the farmers in all sections of the country, will do their most to produce the best specimens that our soil and climate are capable of yielding.

Composition and Nutritive Value of Cotton Cake.

Cotton Cake seems to be extending itself cattle food in England, and is said to be some respects superior even to linseed. The latter is not so well known in Canada ought to be, as we can easily grow flax, of seed of which it is composed, after the portion of the oil has been expressed

incipal points of interest, in reference to ot-
n Cake, are collected together in the following
ort summary from an article in a late number
f the *Journal of the Royal Agricultural So-
ety of England*, by PROFESSOR VOELCKER,
hemist to the Society.

1. The best cotton-cake is richer in oil and
luminous (flesh-forming) compounds than lin-
ed cake, but contains less mucilage and other
spiratory constituents.

2. The mineral portion of the cotton-cake re-
mbles closely in composition that of linseed
d other oil cakes. Like the ash of all cakes,
is rich in earthy and alkaline phosphates, and
ell adapted to supply animals with bone mate-
ials.

3. As far as the indications of chemical analy-
s can be depended on, the best decorticated
tton-cake possesses about the same nutritive
lue as linseed-cake.

4. At the present time four distinct kinds of
tton-cake are offered for sale in the market,
mely:—

(1.) Thin decorticated cotton-cake.
(2.) Thick decorticated cake.
(3.) Common cake, made of the whole seed.
(4.) Oil meal, or number 2 reduced to coarse powder.

The thin decorticated cake is a far better
more economical food than the ordinary
, which is often quite unfit for feeding
poses.

Thick cake scarcely differs in composition
thin cake; but being hard, and 2½ to 3
es thick, it cannot be crushed by an ordinary
ake crusher, and therefore presents incon-
ience to the consumer.

Genuine oil meal is simply thick decortica-
cake reduced to a coarse powder, and of
se has the same composition as the cake
which it is made.

The composition, and with it the nutritive
e, of different samples of cotton-cake, is sub-
to considerable variation.

Decorticated cotton-cake and oil meal, in
parison with other kinds of artificial food,
decidedly cheap feeding materials; and both,
ubt, ere long, will find that favour with the
h farmer which a really valuable and cheap
le of consumption is certain to command.

How to feed Pigs.—Farm Buildings and Manure, &c.

EDITOR OF THE AGRICULTURIST:

I beg leave, Mr. Editor, to propose a few questions:

1st, Which is the best mode of fattening hogs: to mix the meal in a thick batter, with hot water, and let it stand and get sour, or feed it dry, or in what other way?

2nd, Which is the best method of saving manure,—in barn-yards fitted with tanks, or in manure cellars?

3rd, The most economical way of building barns and sheds or stables, and whether it is best to build barns with sheds and yards, or to stable the cattle?

I would be glad to have some or all of these questions answered by you or some of your readers. By so doing you will oblige,

Yours, &c.,
JAMES COURTENAYE.

Hartford, March, 1861.

REMARKS.

1. It would be difficult to lay down any sytem of fattening swine that would not require modification in some of its details, when generally applied. An important point in cold weather is to keep the animal dry and warm; the sty, therefore, should be tight and front the south. Pigs make very slow progress in fattening in this country during the severe weather of winter; they should be pushed on as fast as possible during the fall, and got ripe for the butcher by the earlier part of the winter. The quickest way of fattening pigs is to give them animal substances, that is, grease, greave-cakes, &c. Linseed or oil-cake rapidly fattens. But none of these things produce a good quality of meat. The best materials are barley, peas, oats, and corn-meal. Any one or more of these substances, mixed with water, with a small quantity of boiled or steamed potatoes, will prove an excellent food. In cold weather the mixture should be given warm and in a fresh state. Skim milk, butter-milk, and whey, are well adapted to pigs, and may be given with advantage, to store pigs especially, as wash in connexion with the refuse of the kitchen; and such a mixture is thought to answer best when a state of acidity has been produced by fermentation. Peas and Indian Corn may be fed to pigs in a dry and whole state, and they will fatten in this way with a plentiful supply of wash. The meal of any of the above grains, with a small quantity of steamed potatoes, mangels, carrots,

or turnips, well mixed into a pretty thick batter is the best food that can be given. It is well to change the food occasionally, and to add a little salt. Regularity in feeding, attention to warmth and cleanliness, and not to give the animals more food at a time than they will clear up, are among the most important means of fattening pigs, with a view to quality and economy.

2. Manure can be made and pretty well taken care of in open yards, provided the roofs of the buildings are provided with eve-troughs. During our winters but little waste occurs, as decomposition goes on but slowly and very little rain falls. The danger is in the spring, and every precaution should be used to prevent the washing away of the soluble portions of the manure. Tanks will be then found useful, and a covered shed in the centre of the yards, for sheltering the heap as it is progressively formed, would greatly tend to preserve the heap from deterioration. Cellars would in many cases be found inconvenient and expensive. The chief thing is to prevent the water collected on the roofs coming into the yard, which should be kept well littered and in as dry a state as possible.

3. This is a difficult question to answer in a few sentences. Much depends on the size of the farm, the relative amount of grain raised and stock kept. Some close stables for horses and milch cows during the nights of our inclement winter are necessary; but we prefer also having a plentiful supply of sheds and open yards for young and growing animals, and likewise for sheep. The latter should be allowed plenty of space and ventilation, if kept dry and sheltered from winds the cold will not hurt them. Indeed, a regular supply of fresh air is as essential as food to all the domesticated animals: but sheep perhaps suffer more than any other kinds, by being pent up too closely. The sheds and yards should be carefully sheltered from the north-west, and opened as much as possible to the south. We shall be glad to hear from any of our readers who have had experience in these matters.

On Meadow and Pasture Grasses.

EDITOR AGRICULTURIST.—Iwish to sow some kind of grass along with clover, that will answer as well as timothy for hay, and that will give better pasture after being mowed than timothy does. I know that you have recommended several kinds lately in the *Agriculturist*, but as it would not answer me to try many experiments, perhaps you would give me your opinion as to which is the best kind, and whether the same kind would answer equally well on high and on low land. The land that I want to seed is one part high land—loam with clay bottom,—the other is low black land with clay bottom. Another thing in connection with this is, where can the seed be got, and can it be got without paying a ruinous price for it? I tried to get Alsike seed last spring in Hamilton; the price was 60 cents per lb. I thought it would scarcely pay, so I did not buy it.

A READER.

East Flamboro, March, 1861.

REMARKS.

Our correrpondent will find it difficult to get any better grass *for hay* than timothy,—or any, perhaps, that is *generally* equal to it in this climate. The Blue Kentucky Grass, and the American Orchard Grass are highly esteemed for *hay, producing, on good soils, heavy crops*, and for subsequent pasturage they are superior to timothy. These grasses, we think, would suit the soils mentioned by our correspondent Sow about 16 lbs. of the grasses, and 4 lbs. of clover to the acre. Mr. Fleming, seedsman, of this city, sells the grasses at 25 cents per lb, clover at 10 cents, and Alsike clover at 50 cents. The latter article has for some years maintained a high reputation in Scotland, and in the northern parts of England and Ireland. It has been tried by several farmers in different parts of Canada, for the last three or four years with increasing approval. It is hardy and very productive, yielding excellent pasturage, after being cut for hay. About 4 lbs. of Alsike clover, and the same quantity of timothy will be found sufficient for an acre.

To secure good permanent pasturage, care should be taken, especially during the first year or two, not to allow sheep to eat it too close,—which weakens the plants,—clover in particular,—by injuring the crown, or connection between the root and the stem. When the pasture is getting too thin, a slight top dressing of farm-yard dung and plaster, with a little fresh seed, including white clover, sprinkled over, will be found to renovate and improve it.

Rape ploughed in as Manure.

MESSRS. EDITORS,—Would you be kind enough to answer the following questions in an early number of the *Agriculturist?*

1st, What time should *Rape* be sown when it is to be ploughed in as manure?

2nd, What quantity of seed per acre is required when sown broadcast?

Yours, &c., C.

Woodstock, 16th March, 1861.

REMARKS.

The time for sowing rape is not restricted to a few weeks, but in order to get a strong plant, the operation should not be unnecessarily deferred. The habits of the plant being very similar to the Swedish Turnip, it can be sown at the same time—May or June,—and treated in a similar manner. It is best to sow plenty of seed, say 3 or 4 lbs. per acre, and even more on the poorer class of soils. Rape being a gross feeder, requires good land, and when sown on poor soils, some slight manuring should be given: a sprinkling of plaster over the young plants will be generally found beneficial. When the plant is approaching flowering, sheep should be turned into the field to eat a portion of the leaves and stalks and to tread down the crop, in order that it may the more readily be ploughed under. Sheep are particularly fond of this plant, and it is extensively cultivated on the continent of Europe and in some parts of Britain for the purpose of feeding, and they readily fatten upon it. As a green manure it is excellent for wheat and grain in general. In feeding sheep with succulent rape there is some risk of the animals blowing, whichh is caused, as in cows on clover, by the generation of gas in the stomach. Among the means of preventing this, the sprinkling of salt over the plants is said to be beneficial, and the animals should not be turned in, especially at first, on empty stomachs, or in wet weather.

Flax Cultivation.

EDITOR OF THE AGRICULTURIST.—There has been a club got up in this place, for the general improvement of the settlement, wherein is debated what kind of cereals and other crops it is best to raise, and the most improved method of doing so. Some of the farmers have an idea of raising flax and hemp, but have no information of a practical character as to the best mode of doing so, upon which they can rely. If you would give us such information upon the subject as may be in your possession, you would much oblige,

Yours, &c., J. A. McDOWALL.

Demorestville, March 1851.

REMARKS.—We copied an able article on the culture and management of flax in the February and March numbers of the *Agriculturist* of last year, pages 75 and 104, from the Irish *Agricultural Review*, which, although written for Ireland, will convey all the information requisite, making proper allowances for differences of climate, soil, &c., to the cultivator in Canada. We refer our correspondent to that article, and to others which have appeared at various times in this journal. Land for flax should be in good condition. It should be sown as early as the season will permit, say at the end of April or beginning of May, according to circumstances, not of course till the weather is favorable, and the soil in proper condition. The Riga seed is considered the best, and should be sown about a bushel and a half to the acre. Great care should be taken that the seed is good, and free from weed seeds. The ground should be harrowed smooth before the seed is sown, and then it should be well harrowed in with a light fine harrow. The cultivation in fact is not essentially different from that of any of our ordinary spring crops. The same soil and mode of treatment for instance which might be relied upon to produce a good crop of barley, might also, with slight variation, be expected to afford the same result in flax. The rotting and preparation for market is an art, which would require some space to explain, and we cannot do better than refer to the article above mentioned. Messrs. Perine, Brothers, Conestoga, Co. Waterloo, who grow probably a greater quantity of flax than any other parties in Canada, amounting to several hundred acres annually, furnished the following statement to the Board of Agriculture, and which appears in the Transactions, in reference to some flax seed, for which they took a premium at the Provincial Show of 1858. The statement will convey the information desired by our correspondent and his friends, in a condensed and practical form. It is as follows:—

The sample of Flax Seed exhibited by us at the late Provincial Exhibition, held at Toronto, was grown in the town of Woolwich, County of

Waterloo, C. W., upon a soil termed by the farmers in this section "clay loam," which is the prevailing soil of the county. It is vegetable mould, with a very small proportion of sand, mixed, by cultivation, with clay. The subsoil is exclusively clay. We have found that soils of this kind are the best for the growing of flax. Sandy soils, however well adapted to raising wheat and other crops, are less reliable for flax. Neither are heavy clay soils well adapted to growing the flax crop. The success of a crop upon either of the last named soils depends too much upon the peculiarities of the season. But we have met with uniform success upon the "clay loam."

The cultivation given flax land, before sowing, is about the same as for other spring crops, viz: once ploughing and thorough harrowing. We used no manure on the field upon which this sample was grown. This sample is known as the "sapling seed." We usually sow seventy-four pounds, or one or one-half bushels per acre, harrowing it in thoroughly. We sow broad-cast, about the first of May. This sample was sown the 3rd of May. We give flax no other cultivation than as above stated. We harvested about the 25th July, pulling it by hand, and tying it in bundl s about four inches in diameter. We then set it on end in bunches of fifteen to twenty bundles, seed ends up,—untill dry enough to thrash.

The yield of this sample per acre was twelve bushels of fifty-six pounds. Yield of fibre was but little short of three hundred and twenty-five pounds per acre, which we consider a pretty fair yield for dew rotting.

We are growing, annually, about four hundred acres flax, and prepare the fibre for the cloth, thread, and twine manufacturer.

Boards of Agriculture of Upper and Lower Canada

We copy the following official notice from the Canada Gazette of March 9th.

BUREAU OF AGRICULTURE AMD STATISTICS,
Quebec, 2nd March, 1861.

The following gentlemen have been elected Members of the Boards of Agriculture for Upper and Lower Canada for the year 1861, under the 22nd Vict. Cap. 32—(Consolidated Statutes):

UPPER CANADA.

Hon. D. Christie,
A. A. Burnham, Esqr.
Hon. A. Fergusson,
W. Ferguson, Esqr.

LOWER CANADA.

Jos. E. Turcotte, Esqr.
Major Campbell, C B.
Hon. U. J. Tessier,
Hon. L. V. Sicotte.

WILLIAM HUTTON,
Secretary.

Spring work, the Provincial Show, &c.

EDITOR OF AGICULTURIST.—I have a few thoughts for the consideration of your readers. First, I would say to all my brother Farmers: get your farming implements in order, as the season of labor is now at hand, but do not be too fast about sowing, as you may look for a cold and backward spring, with the wind hanging around the north, and frequent flurries of snow, during the greater portion of the months of April and May.

I would also suggest to the Local Committee at London, a plan for the arrangement of field roots for exhibition, at the approaching Provincial Show, which is to take place in their city. My plan is to make three tiers of shelves, the lower tier to be the widest, the next to the bottom not quite so wide, and the top one the narrowest. Then I would divide these by partitions, thus making them into three rows of boxes, and these should all be numbered. By this arrangement Mangel Wurzel, could be put in the lower range of boxes or shelves, turnips in the centre, and the potatoes and carrots in the top or the uppermost tier. By the boxes being thus numbered, each person will readily know where to find his own roots. In Hamilton last year, our roots were first put into the palace, then they were carried into a tent by parties who were not as careful as they might have been, mixing one person's roots with others, and in some cases the tickets got misplaced, and some lost both roots and tickets. This of course was not pleasant, moreover many of the roots were crushed and spoiled by people walking over them and standing on them; such derangements as these will tend to prevent people from taking roots to shows.

BEES AND HONEY.—Mr. Jacob Temple of the Township of Glanford, who is one of my neighbors, had last year one hundred and nineteen swarm of bees, sold one thousand four hundred pounds of honey at 12½ cents per lb, $11 worth of bees-wax, and one skip of bees for $5, all of which realized the handsome sum of $191, besides supplying his family and visitors with an abundance of this delicious article.

And in addition to all this he has wintered 105 swarms of bees; who can beat this?

STEPHEN KING.
Ryckman's Corners, March 26th, 1861.

Agriculture: Its Past, Present, and Future.

(*Continued from page* 165.)

1600 TO 1660.—Matters moved slowly during this period. In agriculture, gardening, and manufactures, England was surpassed by several other countries, particularly by Holland and the Netherlands. These were the most industrious

countries in Europe; and their population had been longer trained in those habits of order which are essential to industrial pre-eminence, and in which ours was deficient. Our Dutch and Flemish neighbors improved us in fen drainage, and in reclaiming land from the sea: they also introduced new seeds, and improved our agricultural practice. Implements and usages still varied in every country, and almost in every parish. Bligh, in his "Improver improved" (1652), pointed out the advantage of growing clover for cattle; and Sir Richard Weston soon after published an account of the cultivation of turnips in Fanders, by which cattle and sheep might be fattened in winter. The woollen was still the most important branch of non-agricultural industry. Hackney-coaches made their first appearance in 1625, there being only twenty for the metropolis and its neighbourhood.

1660 TO 1760.—Our manufactures continued to improve by instruction from other countries; and the exportation of wool was now prohibited. Spitalfields, in London, now produced silk manufactures; and Frenchmen, at Ipswich, made fine linen, which sold at 15s. per ell—an enormous price, looking at the then great value of money. Agriculture also advanced. The historian says: "The state of things to which the Revolution of 1688 put a termination, was favourable to the development of agricultural industry during the present period. Other political circumstances also favoured the landed interest; and for eighty years after the Revolution, England, as we have seen, was a corn-exporting country. From 1697 to 1773, the total excess of exports amounted to 30,968,366 qrs. of corn, upon which bounties were paid of not less than £6,237,176. From 1748 to 1752, the average quantity exported was 643,961 qrs annually. The bounty paid in 1750 amounted to £324,176. Fresh land was brought into cultivation, and in 1710 the first Enclosure Act was passed. In 1697 a duty was laid in England on malt, and the same duty was extended to Scotland in 1713. In 1710 the winnowing machine was introduced from Holland: in Scotland its use was denounced from the pulpit as impious. The thrashing machine was first employed in the northern parts of the island about the same time. No instrument for saving labour has made such slow progress; and in many extensive districts its use is unknown even in the present day. In 1732 Jethro Tull commenced his experiments in drilling and horse-hoeing on his farm in Berkshire; but thirty years elapsed before they excited much practical attention, and before the really valuable parts of his system began to be adopted by intelligent agriculturists. Towards the close of the period, the extension of the turnip husbandry was already effecting the most important revolution in the history of modern agriculture. Those improvements were also commenced which have gone far towards eradicating the defects of the ancient breeds of domestic animals in this country. Bakewell, the great improver of live stock, began his experiments about the year 1760. The writings of Evelyn, published near the close of the last perod, had awakened a taste for horticulture and planting. Gardens had become a luxury, on which large sums were expended. The cottage of the labourer began to be considered incomplete without a plot of ground for the cultivation of vegetables; and a great increase took place in the quantity and variety of vegetables consumed by the labouring classes. The farmer who did not provide plenty of greens, peas, and beans for his servants to eat with their salt meat, was despised for his parsimony. By the middle of the century the cultivation of the potato had become almost general in every part of England, and the prejudice against its use had been nearly removed; but in some quarters premiums were still resorted to for the purpose of bringing this root into consumption amongst the poor."

1760 TO 1860.—This being decidedly the most progressive era in the history of British agriculture, I have annexed a chronological list of the many important agricultural events of that period—which progress was still mainly owing to our great manufacturing advance, and consequent rapid increase of population. Judging of the future by the past, what are we to expect in agricultural progress from 1860 to 1960, with a population of 50 or 60 millions, instead of 30 millions? Our population was, a century ago, probably not more than six or seven millions; now it is thirty millions. The mind naturally asks, How long is this manufacturing increase to go on, and when shall our manufactures have attained their climax, and when shall commence their deline? Because then shall, indeed, begin the decline of British agriculture. Begging pardon for this digression, I must again quote from the historian of that period: "In 1784 roads had improved, and Mr. Palmer started the first mail coach; previous to this 380 towns got their letters only three times a week, and 40 towns had no post at all, but now they get them daily. From 1785 to 1800 there were 683 Acts of Parliament relating to roads, bridges, &c.; 196 to canals; 834 to enclosures, draining, &c.

Legislation affecting Agriculture.—Our senators appear to have been constantly attempting to set agriculture in order; according to their own notions, by Acts of Parliament. They do not appear to have succeeded very well in their objects, for most of the Acts fell into desuetude, or were evaded; some of them would sound oddly at the present day, such as: No tenant should rent two farms. No tenant-farmer should have more than 2,000 sheep. 1538, That the King was to have half the profit from all land converted from tillage into pasture until a suitable house was built upon it. Every cottage was to have four acres of land; and no more than one family in each cottage. There was an Act

to restrain the excessive use of malt, and justices were empowered in quarter sessions to suppress the making of malt and the number of maltsters. Farm-houses that had decayed were to be rebuilt compulsorily, and 20 to 40 acres attached to them. Roast beef at Christmas appears to have been a luxury of modern times—thanks to turnips, mangel, cake, clover, and other winter food; formerly, as soon as the depasturing season was ended, the fat animals were killed and salted, to prevent their becoming lean again—the hay being required for cows and young growing animals. Bullocks and sheep, too, were then a long while growing to perfection for the butcher, much as it is now in many foreign countries, whose agriculturists—when they visit England—express surprise that our live-stock should be so large and so fat at so early an age.

Roads, Canals, and Railroads.—One hundred years ago we were without either, and in winter the country was impassable. Arthur Young, in his tours, execrated the ruts four feet deep on what were called roads in his time. I wish time would permit me to transcribe his graphic description of the difficulties of locomotion and intercommunication. After carriages were invented the nobility and gentry had their "footmen," who ran by the sides of the carriage, and with their long sticks, which are now used for ornament, propped up the carriage when in danger of turning over.

The Government Drainage Loans.—If evidence were wanting of the necessity for aggregating capital in the hands of great companies, for the purpose of agricultural improvement, we should find it in the eagerness with which the first Government loan of two millions sterling was taken up and made use of. Our keen Scotch friends were so alive to its advantages that they took the whole, and our less 'cute Southerners were too late in their application. So in the second loan of a million, a portion, was reserved for the tardy Englishmen. A noble duke, a great and acute improver, who had an immense estate in Scotland, told me that he had a large slice of the first loan, and would have taken much more had he been permitted to do so.

The Establishment of the General Board of Health has had a most beneficial influence on the sanitary condition of the nation, but, oddly and inconsistently enough, the tendency of its operation is to deprive the British people of their food; for the only means by which the national food can be permanently produced is by means of those very excrements which the Board of Health Act does not direct to be applied to the soil, but which are wasted in polluting our rivers. The calamitous national effects which must ultimately result from this suicidal system have been already fully commented upon, in the paper I had the honour to read before you, "On the Sewage of Towns as it affects British Agriculture"; I will, therefore, only say that, if the Legislature does not interfere to compel a different application of the sewage, I trust that the landholders and farmers of this kingdom will exert themselves to prevent so fatal and so palpable a waste of their substance.

The New Poor-Law of 1834 saved this country from desolation and agriculture from destruction; it taught the landholder and his tenant that property had its duties as well as its rights, and that agriculture was never in greater error than when it hoped to save itself by the non-employment of human labour. It also proved that to pauperize the labourer by paying his wages as alms, was to destroy his self-dependence and demoralize his character.

The Tithe Commutation Act of 1836 opened the flood-gates for investment and improvement, where they would not otherwise have entered. It has, also, removed an element of embitterment between the clergy and their flocks, and has greatly promoted the cause of religion and kind feeling. It caused the conversion of many woods and wastes into food-producing soil. Tithes were first imposed upon the Mercians in the latter part of the eighth century, by their King Offa, and the tax was extended over all England by King Ethelwolf in 855. Owing to the great extent of forest and waste, the total must have been small. Tithes were applied to the repair of churches, the expenses of worship, and the relief of the poor, as well as to the maintenance of the clergy. Pious individuals, however, contributed lavishly with lands, &c., and so enriched the church. This is now prevented by the law of mortmain.

Richard Cobden and Sir Robert Peel.—I do not venture to give an opinion on the much vexed political question involved by their names, for that is very properly forbidden by the rules of our Club; but, practically, free-trade has done for our country an enormous good. It has awakened the slumbering and heretofore unsuspected powers of the British agricultural lion. We all must well remember that the anticipation of a ruinous and impossible competition sorrowed the minds and angered the feelings of those who thought they saw in free-trade the loss of their capital and ruin of their families. But fear and despair gave way to reflection, and to the comprehension of his exact comparative position. The British farmer, like the British manufacturer, faced the difficulty, and has sustained the competitive race by rapid improvement. That great race, although sustained, will be more than won by unheard of and future progress, and half a century hence our agricultural grandchildren will look back upon the condition of their progenitors much as we do on ours of the past age.

The Act for the Enfranchisement of Copyholds will gradually sweep away the old feudal reponsibilities, and give security to improvers. A copyhold farm of my own is subject to a fine

heriot at my death, and no doubt when that occurs, the steward to the lord of the manor will claim my best horse or bullock, as well as 1¼ year's rent.

Implemental Improvers.—We owe to T. Bell the drill and horse-hoe, to Bell the reaper, and to Meikle the thrashing-machine. The two last were Scotchmen. It is hardly possible to overrate the important benefits these implements will confer on British agriculture. The time and money they save largely aid us in the successful competition with foreigners. It is a singular but significant fact that although Mr. Bell had used the reaper (invented by his brother, the Rev. Patrick Bell, still living at Carmylie, near Arbroath, who in 1828 received a £50 prize for it from the Highland Agricultural Society) for thirty years, no one seemed to know any thing about it; and when his machines, Americanized, appeared in the great exhibition of 1851, they were regarded as curiosities and novelties. The public trial of them, on my farm, in 1856, in the presence of a distinguished company, at once launched them into practical use. I have used one of them ever since.

Agricultural Implements and Machinery.—If I wished to convince agriculturists of the importance of steam, I would in their presence ask the implement makers how much they would enhance their prices if compelled to go back to manual labour or horse-power as a motive force? The answer would probably be, "It is not a question of price, for we could not produce enough even at an advance of 50 to 100 per cent." As I wander through the implemental labyrinth at our great shows, I ponder in my mind whether farmers ever entertained this question, and applied it to their own case. We no longer see the farmer or his men making their own wooden plough and other tools at home as in ancient times; but the steam-blast, the steam-hammer, the steam circular saw, and the steam-turned lathe, have transformed our blacksmiths' shops into gigantic and money-making factories, whence agriculture derives the cheap and effective means of a successful competition with less advauced corn-growing countries. It would be ungracious to omit honourable mention of the Ransomes, Garretts, Hornsbys, Claytons, Howards, Barretts, and others, who have so admirably met the mechanical demands of modern agriculture. It is my lot to welcome many foreign agriculturists, and as I catechize them, I often wish that I had by my side the agricultural alarmist. He would hear them say, "We have no roads, or we cannot use them in bad weather; we have the old wooden plough; we never hoe our corn, our men do not understand this machinery; we do not drill our corn; we keep our sheep three or four years before they are fat; we use no oilcake—our animals live on straw in the winter; we are very far from a market or river; we have no railways or canals; we grow three, four, or five bushels for one." A brother of a neighbour of mine emigrated to Amerida, and, writing to his brother, said, "I expect to see something of the country, for so-and-so is going out with a load of corn to market (Chicago); he will be gone three weeks, as it is 50 miles away." This I know to be a fact. It is a variety of these difficulties which beset the foreign cheap producer; and it is the reverse of all this that comforts and profits the British farmer.

The Establishment of Farmers' Clubs and Agricultural Societies has had a most beneficial influence on agricultural progress, which has been stimulated and improved by competitive exhibitions, by the reading of papers on Agricultural subjects, by the discussions following thereon, and above all, by the diffusion of those readings and discussions by means of the agricultural press. It is a painful, unaccountable, and not very creditable fact, that the only society in Britain that forbids the free and public reporting of its discussions and proceedings is the Royal Agricultural Society of England! In other respects it has conferred great benefits on British Agriculture, especially by its itinerating annual exhibitions for live stock and machinery. Its "Journal" has also done good service. The same good results have followed from the Highland Society and its "Journal;" and the Irish Agricultural Society, and its "Journal," and their exhibitions. It would be doing an injustice to Scotch Agriculturists not to compliment them on the talent displayed at their discussions, resulting, no doubt, from those more abundant educational facilities which have existed in Scotland, compulsorily, more than in England. Probably this was the cause of their "Agricultural Journal" appearing so many years before that of the English Society.

The Smithfield Club, by its early and original Exhibition of Live Stock, deserves especial commendation as the pioneer in animal competitive exhibitions, which have dispelled self-sufficiency and developed animal perfection. Among the greatest benefactors to agriculture stands

Baron Liebig.—If an accurate account could be taken of the quantity and value of the additional food produced through his discoveries, the world would be grateful, and we should look upon him as a great benefactor to mankind. By the light of his great mind, the darkness of agriculture, with regard to the nutrition of plants and of animals is being rapidly dispelled. Like a great magician, he has taught us to convert bone and mineral apatite, into milk, cheese, mutton, and beef. He has taught us that the earth on which we tread forms an indispensable portion of animal and vegetable structure. He discovered floating in the passing breeze the fat and muscle of our bodies. The once exhausted pastures of Cheshire owe to him their fruitful regeneration, and every Cheshire cheese should

in gratitude bear his impress. As an eminent chemist remarked to me the other day: "he has knocked down all the old skittles"—meaning the old erroneous agricultural theories. He has supplanted them by imperishable truths. He has pointed out to us, in perspective, why a "peppering" of guano rivalled the massive dung-heap. He has entreated us to believe that the waste of our excreta through our sewers is equal to an enormous exportation of corn and meat without receiving its value in return. I am a firm believer in his mineral theory. Agriculture will at some future age, raise a monument to his memory as the Sir Isaac Newton of agricultural discovery.

(To be continued.)

American Cheese and Butter.

From the Farmer's Magazine.

There can be little doubt that before many years are over, the dairy produce of the United states and Canada, will be received in enormous quantities in the English markets. Taken as a whole, no country presents greater facilities for the dairy farming, and no country has so large a proportion of its population engaged in agriculture. As a consequence, no country should have a larger surplus of dairy products for exportation, and if hitherto the surplus has been trifling, it must be owing to transient causes.—There must be difficulties which are inseparable from what may be termed the infancy of the newer States, and when overcome, these States, which practically give no attention to dairy farming will do so, and add their contribution to the supply of cheese and butter. Two prominent difficulties may be named. First, it is desirable to get as much land as possible into cultivation, and the settlers' means being limited the one object necessarily engages his attention. He does with as few stock as possible, and what milk his cows yield (should he have any) is consumed in his family or sent to the nearest town or village. The second difficulty arises from the prevailing ignorance among American settlers, as to the way in which cheese and butter should be made. Much as the agricultural shows have done in the way of example, and in disseminating information, it is scarcely credible how much remains undone. The struggling class of farmers, who are by far the most numerous, and to whom farming is a new occupation, take little or no interest in the shows, and the little cheese and butter which they make is so inferior as to be only saleable at a price that barely yields a profit. Under these difficulties the newer States, no matter what their facilities may be for dairy farming, have hitherto produced less cheese and butter than they have consumed. Instead of contributing to the general stock, they have diminished it, and Michigan, Illinois, Minnesota, and Iowa have bought freely of the dairy produce of Ohio, New Jersey, New York and Pennsylvania. The indifferent and deficient cheese and butter of Canada have been sent into the United States, or exported to the United Kingdom, while Canadian wants have been supplied from the abundance and prime qualities of New York.

This practice, necessary though it may have been, and still to some extent may be, has proved injurious to an enterprising and numerous class of farmers. Western and Canadian cheese and butter once said to be inferior and all but worthless, the bad name has adhered to them, and really good lots have, as a rule, gone with the really bad, commanding no better price.—No inducement may be said, therefore, to have existed for improved dairy farming, and a custom in the Canadian butter trade will serve as an illustration of how the matter stands. Canadian butter, it is clearly necessary to say, is made in the summer season, the farmer providing himself with a supply of firkins, into which he places the butter as it is made, spreading a little salt between the different makings. As soon as a few firkins have been filled, they are sent to the dry goods shop, or some other shop, at which the farmer supplies his domestic wants, and the net weight is passed to the credit of the account, at generally the munificent price of sixpence a pound. At this price the shopkeeper can scarcely lose; and should butter become scarce he has the chance of realizing a good profit. Nothing is, however, to be made by the selling of a firkin or two, and lot after lot is accumulated in the shopkeeper's cellar, until, probably, a few hundred firkins are in hand.—This, be it observed, is done during the summer, when the temperature is high, and when the least exposure reduces the butter to an all but fluid state; and unless salt has been used too freely, the butter when it comes to be looked at in the winter, in a frozen state, is sour or rancid. Thus improved dairy farming has been repressed by a mere custom in the trade, which originated when the quality of the butter was bad, and when the quantity produced was small. The maker of good butter was placed upon the same level as the maker of bad butter, and butter that was really good was spoiled by neglect when it left the farmer's hands, and before it was placed upon the market.

It is satisfactory to observe, that this untoward state of things, is being changed, and that American dairy produce is in a fair way of getting rid of the bad name that has been so long attached to it. Within the past few years a class of men possessed of ample means, and to whom the making of cheese and butter is familiar, have found their way to Canada and the United States. These men, availing themselves of the facilities that now exhibit for sending what they have to market, have declined the services of the drapers and grocers and others,

and sent their cheese and butter to New York, and Boston, and elsewhere direct by railway.—Need the result be told? Well prepared Western and Canadian butter now commands the highest market price; and dairy farming has received in the course of the present season an extension which is scarcely credible. Milk has ceased to be bestowed upon the hogs, or to be wasted in the household; and milch cows are in great request. In short, dairy farming, which hitherto has been neglected on the American continent, is at length found to be highly profitable, and is being prosecuted in a way that will be felt before long in England. No better proof of this can be afforded than by a comparison of the statements of exports from the United States and Canada.

EXPORTS OF BUTTER FROM THE UNITED STATES TO GREAT BRITAIN AND IRELAND.

1858.	Tons.	1859.	Tons.
September	10	September	10
October	71	October	10
November		November	1
December		December	1
1859.		1860.	
January		January	23
February		February	125
March	23	March	278
April	30	April	125
May		May	222
June	88	June	495
July	76	July	437
August	7	August	414
From Sept. 1, 1858 to Sept. 1, 1859	307	From Sept. 1, 1859 to Sept. 1, 1860,	2141

EXPORTS OF CHEESE FROM THE UNITED STATES TO GREAT BRITAIN AND IRELAND.

1858.	Tons.	1859.	Tons.
September	396	September	722
October	555	October	729
November	257	November	650
December	287	December	684
1859.		1860.	
January	137	January	364
February	49	February	408
March	292	March	448
April	127	April	466
May	56	May	301
June	60	June	905
July	179	July	991
August	824	August	884
From Sept. 1, 1858 to Sept. 1, 1859	2599	From Sept. 1, 1859 to Sept. 1, 1860,	7542

BUTTER EXPORTS BY SEA FROM MONTREAL.

To October, 1860, 22,828 firkins; to October 1859, 7,871 firkins; to Oct. 1858, 4534 firkins.

The exports from Montreal do not represent the aggregate Canadian exports, but only a small portion. They represent the increase of the year, however, as fully as the aggregate will do when fully ascertained.

Such an increase in the dairy produce of one year may be said to be without example. Nor is there any doubt as to the ratio of increase being maintained in future years. The Canadian farmer may turn unlimited herds of cows into the bush to feed in summer; and the Western farmer has even more scope and less trouble upon the prairies. Cheese and butter can be produced in America without limit, and at a less cost to the farmer than in any other country; and now that the production is being taken in hand in a spirited way, the supply will be enormously increased. Nearly 7,000 tons more dairy produce have been received this year than last; and there is every reason to believe that the quantity to be received next year will at least be doubled.

[An extract from the above article appeared in a former number of this Journal.]

Agricultural Intelligence.

Meeting of the Board of Agriculture.

The board met pursuant to notice on the 13th ult., at the office, Toronto, at noon.

Present: Messrs E. W. Thomson, R. L. Denison, A. A. Burnham, Hon D. Christie, Hon G. Alexander, Hon H. Ruttan,; John Barwick, President of the Provincial Agricultural Association; Professor Buckland; Dr Beatty, President of the Board of Arts and Mannfactures: J. E. Pell, Vice President of do.

The Secretary submitted a communication from the Secretary of the Bureau of Agriculture at Quebec, showing that Hon D. Christie, Hon. A. Fergusson, A. A. Burnham. Esq., and Wm. Ferguson, Esq. had been re-elected members of of the Board.

The President for the past year, E. W. Thomson, Esq., delivered a brief address on retiring from office.

The Secretary took the chair.

It was then moved by Mr. Christie, and seconded by Mr. Denison.

That the thanks of this Board be given to Col. Thomson for his valuable services, and that he be re-elected President for the current year — Carried.

The President elect then took the chair.

Moved by Mr. Denison, seconded by Mr. Barwick.

That Hon. A. Fergusson be re-elected Vice President of the Board.—Carried.

The Secretary then submitted the following communications:—

From Wm. Ferguson, Esq., Kingston, stating his inability to attend the meeting of the Board, in consequence of County business requiring his presence at Kingston.

From James Keefer, Esq., Strathroy, Secretary of the West Middlesex Agricultural Society; James Wright, Esq, Guelph, Secretary of the South Wellington; Joseph Thomas, Esq., Barrie, Secretary of the North Simcoe; and E. A. McNaughton, Esq., Newcastle, Secretary of the West Durham Agricultural Society,—all submitting certain amendments desired by their respective Societies in the Agricultural Statute.

From Thos. Wilson, Esq., Kingston, Secretary of a Society claiming to be the legally constituted Electoral Division Society of the City of Kingston, dated January 26, 1861, detailing certain proceedings which had taken pl ce at the Annual Meeting of that Society in January, and which had resulted in the organization of another Society, also claiming to be the legal Electoral Division Society.

From John Shaw, Esq., Kingston, Secretary of the other organization claiming to be the legally constituted Electoral Division Society of Kingston, dated Janury 26. 1861, giving the names of the officers and directors elected by the Society of which he is the Secretary.

From Mr. Wilson, dated Feb. 13, referring to the subject of his former communication.

From Thomas Briggs, Esq., Kingston, President of the first mentioned Society at Kingston, dated March 1st, referring to Mr. Wilson's communication, and requesting the decision of the Board as to which of the two organizations is the legally constituted Electoral Division Society.

From Mr. Wilson, Kingston, of March 11th, on the same subject.

From Mr. W. McBride, Secretary of the Local Committee for the Provincial Exhibion of 1861, at London, dated Feb. 2nd, submitting the names of certain persons to be added to the Local Committee,

From Thomas Powell, Secretary of London Township Agricultural Society, requesting to know if the contribution by that Society of its funds for the year in aid of the erection of the buildings for the Provincial Exhibition would entitle the members to be admitted as members of the Agricultural Association for the year.

From James Johnson, Esq., Chairman of the Local Committee, London, enquiring if the members of Local Societies would be admitted as members of the Association, on the Society paying over to the Association their subscriptions and government grant for the year.

[The Secretary stated that he had replied to both these letters in accordance with the resolutions adopted at the meeting of the Board in February, 1860.]

From R. T. Pennefather, Esq., Secretary to the Governor General, acknowledging receipt of the resolutions of the Board at last meeting, in regard to the application of the donation of £200 by His Royal Highness the Prince of Wales to the Association.

The Committee appointed at last meeting to consider the amendments necessary to the Agricultural Statute submitted their report.

The Board adjourned at half-past one for an hour.

The Board resumed at half-past two.

The Report of the Committee on the revision of the Act was taken into consideration, and adopted, with some amendments, and the Secretary was instructed to transmit the same to the Minister of Agriculture.

Resolved, That when the Board adjourns on this occasion it do stand adjourned until 4th April next at noon, at the Tecumseth House, London, and that the Secretary acquaint the Chairman of the Local Committee with this arrangement.

Resolved, That in respect to the communications from Kingston, this Board hereby instructs the Secretary to inform the parties that it does not under existing circumstances feel itself in a position to decide the matters at issue, at the same time recommending a friendly compromise therein.

The Board adjourned to 9 A.M. to-morrow.

THURSDAY, March 14th, 1861.

The Board resumed at 9 A.M.

Present: The President, R. L. Denison, H. Ruttan, J. Barwick, D. Christie, Professor Buckland, Dr. Beatty, J. E. Pell.

The communication from Mr. McBride on the subject of the local committee was considered and concurred in.

The several communications on the subject of the Act were also discussed and disposed of.

Professor Buckland stated to the Board several interesting facts relative to agriculture and the management of Exhibitions that he had observed during his recent tour in Europe, and which will be communicated to our readers more in detail in future numbers of this Journal. He thought that the progress made of late years in Canada in agricultural pursuits would not compare unfavourably, when all circumstances are taken into consideration, with older and consequently more advanced countries. He considered that we are in the right track, and that our Provincial Exhibitions, though still susceptible of many improvements, are as creditable as they are beneficial to the country. In France and various parts of the United Kingdom, he met with many who evinced great interest in Canada and its future prosperity, and found several influential individuals connected with societies who will be happy to exchange with us specimens of agricultural productions, and implements; an arrangement he hoped the Board would be enabled to carry out as soon as they possess the requisite accommodation. He had two or three opportunities of a personal inter-

view with Professor Dick, The Principal of the Edinburgh Veterinary College, on the question of procuring a competent practitioner and teacher to reside in Toronto. Dr. Dick expressed a lively interest in the object and will do everything in his power towards its accomplishment. There is therefor reason to hope that something of a practical character will ere long be commenced in relation to this important undertaking. Professor Buckland offered some suggestions, which had occurred to him from observations made abroad that might tend to increase the efficiency of the Board and the Provincial Exhibition and Societies generally, which will be more fully considered hereafter. He also referred to some information he had received from parties who had experimented on the grains, grasses, and new varieties of potatoes distributed by the Board, which, with the results of his own experience, he would embody more fully in a future communication.

Some conversation then took place on the subject of obtaining a veterinary teacher, and it was agreed that Professor Buckland should correspond with parties in Europe in reference to this matter.

The subject of the intended great exhibition at London, England, in 1862, was considered, and it was

Resolved,—That a Committee of the Board of Agriculture, consisting of Colonel Thomson, Professor Buckland, and Colonel Denison, be appointed for the purpose of co-operating with the Committee of the Board of Arts and Manufactures, in reference to the representation of Canada at the great exhibition in 1862.

Resolved,—That in addition to the vote of thanks passed at a previous meeting of this Board, to His Royal Highness the Prince of Wales, for his liberal donation, and for the great interest he was pleased to manifest in the agricultural prosperity of this Province, he be now elected a life member of the Agricultural Association of Upper Canada, and presented with a life member's medal.

Resolved,—That with a view to ascertain the practicability and utility of procuring suitable accommodation for permanent offices, ware-house, and museum, a committee be now appointed to ascertain how the object can best be accomplished, and at what expense, and to report at next meeting of the Board that shall be held here, and that Messrs Thomson, Denison and Buckland be such committee

A communication was submitted from the Toronto Horticultural Society, requesting the Board to embody in their proposal amendments to the act, a clause to the effect that Horticultural Societies, possessing and occupying a certain quantity of land for the purposes of a Botanical Garden, and performing certain other acts, should be entitled to receive the same public aid as Electoral Division Agricultural Societies

Resolved,—That the Secretary be instructed to acknowledge the communication from the Horticultural Society, and to direct the attention of the officers of said society to the provisions of the Act 20 Vic. Cap. 32, Sec. 56, and to the encouragement for Horticulture, &c, therein contained.

Resolved,—That the President, Treasurer, and Professor Buckland be a committee on behalf of the Board to prepare the Prize list for the exhibition of 1861, and that the Board of Arts and Manufactures be requested to appoint an Associate Committee on the Arts and Manufacturing department.

The Board then adjourned.

West York.—The County and township societies in this Riding having come to the conclusion that it is unprofitable for them all to fritter away their means in holding four or five separate spring shows, in as many localities, have decided this spring to unite their strength in one show, to be held at Wes on, on 24th inst.; and to offer a larger amount in prizes than usual on these occasions in spring. We think this a very judicious move.

Short-Horns in 1860.

"We have before us," observes the *London Agricultural Gazette*, "a list of Short-Horn sales in 1860. They do not indicate any degeneracy in the breed, its market value, or repute. Is it not a remarkable thing to know that 1,000 animals of all ages were sold last year by one auctioneer for more than 40 guineas each: that no fewer than 310 reached prices between 40 and 100 guineas each, 84 of the number averaging £131 5s.!"

We condense the following facts from tabuted statements furnished by the above-mentioned journal.—

Eighty four animals sold at public auction at thirteen public sales amounted to £11,025, being an average of £131 5s. each.

The following table again gives the classification of the animals according to price:—

	No.	Value Received. £	s	d.
Cattle sold above 100 guineas ..	47	7638	15	0
" between 90 and 100 gs.	17	1653	15	0
" " 80 and 90 gs.	20	1732	10	0
" " 70 and 80 gs.	37	2807	14	0
" " 60 and 70 gs.	40	2628	3	0
" " 50 and 60 gs.	68	3765	6	0
" " 40 and 50 gs.	112	5074	13	0
" " 30 and 40 gs.	207	7221	18	0
" " 20 and 30 gs.	305	7583	2	0
Under 20 gs.....	297	4234	2	6

At 25 sales, from March to October, 1150 animals were disposed of. The aggregate amount

realized was £44,339 18s. 6d.; being an average of £88 11s. 2d. each!

"Even these large figures," observes the *Gazette*, "do not nearly express the sums realized by the breeders of first class stock. It is not always the successful breeder who disposes of his stock by auction. Larger prices are given by private contract than are paid in competition before MR. STRAFFORD. Enormous sums, too, are given for animals sent across the seas, and probably four or five times the amount here specified change hands annually between buyers and sellers of pure bred Short-horns in this country."

The above lists do not give any adequate idea of the enormous prices which are given for animals of any fashionable family or strain in the breed.

"We have before us a copy of the Annual Catalogue of the Branches Park Herd, the property of Lady PIGOT, in which the pedigree and personal history of the several animals specified are detailed. Among them we find "Queen of Athelstane," now two years old, purchased of Mr. DOUGLAS, of Athelstaneford, for £525; and "Victoria," now five years old, purchased of Mr. BARNES, of Moynalty, also for £525. In the notice of the 2d Duchess of Gloster, bred by Mr. JONAS WEBB, calved January, 1857, got by Cheltenham, (12,588,) it is related that Mr. JONAS WEBB has sold five yearling bulls by this bull, at 200 guineas each, for the colonies, and nine more at prices varying from 100 guineas to 180 guineas each, and eight heifers at over 100 gs. each. These prices we add to the list given last week in illustration of the high market value which a well-bred animal maintains. The publication from which we extract them is not the mere "Annual Catalogue" which it is entitled. It is most interesting as a record of what energy and perseverance will accomplish—of the failures which cannot check them, and of the successes which ultimately reward them. Let us also add that it is useful as a sort of annual appendix to the Herd Book. It would be of great service if of all our leading Short-horn herds similar annual catalogues were issued. They could never be a substitute for the Herd Book, which must periodically appear as the ultimate and authoritative book of reference; but they would be useful as intermediate and supplementary to a work which they could never supplant.

In her preface Lady Pigot writes thus of the history of her herd:

"I began in the winter of 1856 by purchasing 'Happiness,' a heifer bred by Mr. Jonas Webb, giving 250 guineas for her. She only brought a bull calf, and sank away out of condition soon after, and appeared in that plight at the Royal at Salisbury. Eventually she recovered her appearance, and went to Ireland to the Dublin Spring Show in 1858, where she took the 1st prize and silver medal; also the gold medal as best cow. She came home however to die, having been literally *bled* to death by the farrier *for cold* caught on the passage across.

"This purchase I made not knowing one trifle from another, and having no purpose or aim in view. I lost in the first year above £600 from deaths and inexperience, but I was determined to persevere, and at Mr. Wetherell's sale in 1859 I gave 300 guineas for Stanley Rose. I then began to question whether buying in the desultory way was the right course to pursue, and would it pay me, and so I went to Warlaby, and made outrageous offers, for animals *not to be bought*. I wrote in the same strain to various people possessing pure bred cattle of Mr. Booth's blood. Everywhere I was refused; and at last I saw that those who were lucky enough to possess these cows were quite determined not to part with them.

"My energy and perseverance, however, have at length been rewarded, as I have never allowed any hindrance to come between me and the purchase of particular tribes, and I have now succeeded in establishing a herd, the pedigrees of which lie in these pages. And now I give it as my opinion that nothing pays the farmer half so well as stock, if properly kept."

The following are notices of some of the cows and heifers in the list:

"The Queen of Athelstane, rich roan, calved February 1859 (bred by Mr. Douglas, of Athelstaneford) got by Sir James the Rose, 15290, &c. She has just perhaps earned her reputation being as is believed, nearly the best heifer in England. Lady Pigot gave 500 guineas for her to Mr. Douglas. She combines rare quality and style with great length and constitution, and is supposed by judges not a little to resemble the beautiful but unfortunate 'Queen of the May.' The Queen of Athelstane took her first prize at Saultoun, East Lothian, in 1860, and the first prize, also as a yearling, at the Highland Show at Dumfries. She was first again at Alnwick, first at the Lancashire show at Keighley, beating Col. Townley's prize heifer, and was first at the Craven show, at Skipton, 1860. In the Frederick cross is some of Col. Townley's best blood while Ringlet is in a direct line from the celebrated Bracelet, none of which tribe remain either at Warlaby or Killerby. Sir James is but two crosses away from the 'Royal Blood,' he is from the famous Paris prize cow 'Rose of Summer,' of the Mantalini tribe."

Rise of Farm Rents in Scotland.

Of late years there has been an increasing tendency to higher rents both in England and Scotland; particularly in the latter. We see stated in a late number of the *Scotsman* that in the district of Auchtararder, that rents have of late greatly augmented consequent upon the increasing demand for farms; and this appears

the buildings and lime being exhausted with my
o be more or less the case over the country in
general. From 30 to 50, and in some cases as
uch as 70 to 80 per cent of increase in rent on
hat of old leases is obtained on their renewal,
nd this frequently to new tenants. Much of
his increase, however, is attributed to the ap-
lication of capital by landlords and tenants in
he permanent improvement of farms, such as un-
er-draining, the straightening and renewal of fen-
s, the erecting of new buildings better adapted
o existing wants, &c. It must not therefore be
nferred that the greatly increased rents which
re now obtained in certain localities are just so
uch clear gain to the landlords,—who in most
nstances have expended large sums of money
n the permanent improvements of their estates.
A correspondent of the *Agricultural Gazette*
efers to this rise as the result of improved
states,—and not as the result of any greater
arket value in the estates of the same intrinsic
alue. This we believe to be only *partly* true.
ur recent opportunity of ascertaining person-
lly how land was selling and renting in England,
d us to conclude that the tendency of rents to
se, a law that has been more or less general of
te years throughout the United Kingdom,
rises in the first place from the greater com-
etition for farms caused by increased wealth
d population, and secondly from their much
reater productiveness brought about by the
dicious expenditure of capital in the various
odes of agricultural improvement, that
ve so strikingly characterized modern British
sbandry. In some parts of England where
ly a small amount of capital had been expend-
in permanent improvements we found that
e fee simple of land had risen since 1847,
om 15 to 25 per cent, and rents, where farms
d been re-let had experienced a similar
rance. The writer in the *Gazette* observes:
"Thus—if you melt a gold sovereign, and if,
ter adding to it five shillings' worth of gold,
u sell the whole for twenty-five shillings, will
at entitle you to say, that gold has risen
enty-five per cent? Certainly it will not,
ither will a rise in rent entitle you to say that
d in the abstract has increased in value. In
41 I took my farm for 19 years at £800 a
ar. A complete new set of offices were built
ring the first three years, and my performing
e entire carriages was considered a fair equiva-
nt for these offices during my lease. The
ole farm was drained in 1842, 3, 4, and 5,
th government money, the interest of which
£240 a-year. During my lease, I also went
er two-thirds of the farm with lime, and
herwise improved it greatly; and now that my
e is out, I am quite prepared to pay, in shape
rent, £1100 a-year, and yet you are not en-
led to say that I am offering an advance of
per cent, for in point of fact I have been
ying £240 a-year of drainage interest, which
w takes the shape of rent, and my interest in
lease, I am content to pay £60 a-year for them during a new lease, and you are not entitled to call this an advance rent. In order to ascertain the real advance in the value of land, you must find a farm that has neither been drained nor limed, and has had no new suit of offices during the last lease and the per centage of rise will not be so astounding."

The English Harvest of 1860.

We publish below from the *Mark Lane Express* of February 25th, some deductions which appear to have been most carefully made from upwards of three hundred statistical returns up to the 18th of Feb., including every county in England and Wales. The document is rather long, but its contents cannot fail to interest our readers. The results of the harvest in Scotland and Ireland are somewhat better, we believe, than those of England; but the whole of the British Islands, including a large portion of northern Europe, suffered almost unprecedentedly from the continuous wet and cold of the past year. In Britain nothing like it has occurred since 1816. The prospect of next harvest cannot be otherwise regarded than discouraging. Large breadths of land prepared for wheat last autumn could not be sown, and much that was planted has as yet an unpromising appearance. The *Express* observes:—

Our readers have now had time to examine the important Report of the late Harvest as given last week, and of which we now offer a condensed summary, exhibiting in a few lines an approximate view of the general result. Before we enter upon this we may say that all the gentlemen to whom application was made, were selected with due regard to their respectability and competence to give a correct and comprehensive reply to our enquiries. It may be further explained that they have generally extended their report over an area of from six to eight miles beyond their own immediate locality; by which means, having had a due regard to a proper division of the counties, as correct a view as possible of the whole country has been obtained. In the subjoined summary of their returns one great point has been to collate them with those of the Board of Trade—with the sales of corn of all kinds for the year 1860; the last of which, although only published this morning, we are enabled to give in our paper of to-day. We have thus been enabled to ascertain whether the deficiency or otherwise prevails chiefly in what may be termed the cereal counties, and from which the great bulk of the grain is procured. The deduction we draw is, that both

wheat and barley have proved generally most deficient and damaged in the districts where the largest breadth of those grains are sown; and this is further proved by the falling off in the weekly sales in those counties this season, as compared with that of 1860, as well as by the prices sustained, notwithstanding the largest importation ever effected. On the other hand, the defect in the quality is proved by the wide range of prices, which in wheat is frequently as much as from 30s. to 35s. per quarter, and in barley to fully an equal proportion. In arranging the following table, it will be seen that there are few cases in which *a good quality* is reported. It is possible that in some instances in which "average crops" are put down, the quality may have been good; but, as this is not declared, and being fully aware that owing to the unfavorable season, even a large proportion of the "average crops" were stained by the wet, and unfit in their present condition for the miller, we have omitted noticing, as in "good condition," those stated to be so, which, however, will be found to be very few in number. The following is a summary of the whole of the returns:

	Under average to the Extent of					Average.	Above average.	Failures.	Totals.
	⅔	½	⅓	¼	1-5				
Wheat.....	3	27	35	77	95	74	—	—	313
Barley.....	12	16	16	35	64	142	15	—	300
Oats.....	—	7	15	34	20	179	31	—	206
Beans....	9	16	11	25	24	121	46		252
Peas....	9	24	19	27	32	68	12	18	219

	Above average	Average.	Under average and diseased.	Under average not diseased.	Half average.	Under half average.	Failure.	Total.
Potatoes.....	6	34	53	21	39	124	14	291

	Over average.	Average.	Under average.	Very bad.	Failures.	Totals.
Turnips.....	6	63	145	87	11	312
Mangolds.....	4	23	106	149	18	300

On the whole the deficiency in the wheat crop appears to be very great, there being only 74 cases of average yield, whilst the bulk is one-fifth to one-half deficient. But even this does not represent the whole deficiency, or even the greater part of it. The main deficit is in the weight and quality of the grain, an inferiority without precedent since 1816. With regard to weight it ranges from 47 to 60lbs. per bushel, a very small proportion coming up to the latter weight, and the average being probably not more than 56 to 57lbs. per bushel. This is from six to seven pounds below the average of some seasons; and will of itself make a difference of at least 10lbs., per bushel in the produce of flour, or 80 lbs. per qr. So convinced by bitter experience are the millers of this fact, that they have ceased, in many instances, to purchase native wheat, except at such prices as the farmers will not at present submit to. The consequence is that, notwithstanding the enormous supply of foreign wheat since harvest, the drain upon the stock to supply country millers is beginning to tell heavily, and a cessation, in great part at any rate, of the importations, will cause the granaried corn to disappear before the new crop of the Continent can be brought down from the interior to the seaboard.

Again, though, owing to the coldness of the atmosphere during the harvest, a very small proportion of the wheat was sprouted, the bulk of the crops never ripened properly, and much was cut when very green. In the northern counties of England the harvest was protracted beyond precedent, many hundreds of acres being still in the fields in November, and even up to the beginning of the new year. Now it is impossible for the grain under such conditions to be fit for market, or even for human food; and we find, therefore, that a large deficiency will arise from this cause. Such wheat, even if not utterly spoiled, can never yield any tolerable produce of flour, either in quantity or quality, and is totally unfit to be worked up alone. This is in fact the case with a very large proportion of the crop in every county in England.

And further, by collating our reports with those of the Board of Trade, as stated above, we find that the largest wheat-producing counties are Norfolk, Suffolk, Essex, Cambridgeshire, Yorkshire, Nottinghamshire, Kent, Berkshire, Hertfordshire, and Gloucester. In all these the deficiency in average yield and condition is fully as great, and in some cases greater, than in the non-cereal districts. We shall probably have to refer to this part of the subject again at a future time, when we shall be able to offer the proof of this deduction by the falling-off of the sales of both wheat and barley this season (since harvest) as compared with the previous ones.

It may then be safely asserted, taking the deficiency in the yield per acre in the produce of flour per quarter, and in the loss from the weather and the protracted harvest, that the wheat crop will prove to be one-third at least less than an average, or five to six million quarters deficient. This, with an annual consumption of nearly five million quarters beyond the native produce, will render necessary an importation of ten million quarters between the harvests. Such was the deficiency as estimated in the *Mark Lane Express* on the eve of harvest, a result, however deplorable, that has fully justified our calculations; supported as these were at the time by so few of our contemporaries.

The barley crops have suffered in an equal degree with the wheat, as regards the damage done by the rain to the quality. From all parts of the country reports in this respect are unfavourable, there being a very small proportion of that grain fit for malting; whilst even that to be considered so, is complained of by the maltters on account of its immaturity, which prevents it sprouting freely.

Oats appear to have been less affected by the weather than either the two principal cereals, and but for the continuous rains would have been a splendid crop. Still, owing to the violent storms that prevailed before harvest, a considerable amount of damage was sustained, and but few of the fields of this grain were cleared in a condition to render it fit for the market until March. We do not, however, in the best seasons grow sufficient for the consumption, and we must this year have a large importation to meet the demand, which annually increases.

Both beans and peas have suffered more from the weather than any other produce. The former were almost universally cut before they were fairly ripe, and housed in a damp condition; so that it has been impossible to thrash them properly, or to do anything with them when thrashed, unless kilndried. There is no question, however, but that beans would have been the largest and best crop ever known had the harvest been favourable. As it was, a large proportion of them were still in the field in the northern counties in December, in some cases with six inches of snow upon the stooks, in common with wheat, and other unharvested crops. There will still be a good supply of them after the March winds have dried the stacks.

The pea crop never was worse. In many cases they were shelled in the field, and in the majority were so damaged as to be worth little, whilst eighteen cases of entire failure are reported.

The accounts of the potato crop are the worst of all. The disease appears to have been universal this season, and to have destroyed a greater amount than in any year since 1846, to which the last has been aptly compared. We much question whether one-third of an average crop will be fit for human food. Only 40 cases of "average" are noted out of 291, whilst 163 are half and under half a crop, and 14 total failures. Even of those stated to be average crops many of them are much diseased, so that they cannot be estimated at what the report would otherwise warrant. The enormous deficiency will throw the masses of the population more upon bread, and this will still further press upon the wheat crop. The high price of potatoes is the certain criterion of the deficiency, and this extends to Ireland as well as England. We shall probably be able to import in the spring, but it is a question whether in sufficient quantities to meet the demand, as the disease has been prevalent on the Continent as well as with us.

Both turnips and mangolds are bad, particularly the latter. The late-sown turnips improved before the frost set in, but the very circumstance of their continuing to grow to so late a period was against them when the frost came. They were all the more tender and susceptible of its influence. This was also the case, and to a more fatal extent, with the mangolds, which unfortunately in many instances were left in the field and caught the frost, always more destructive to them than the turnips. More than three-fourths of the latter and nine-tenths of the former are stated to be under an average. This offers but a poor prospect for the graziers, many of whom will scarcely be able to keep their stock through the season. It is unfortunate that the failure of the mangold crop should occur, now that, owing to the uncertainty of the turuip of late years, it had begun to come more into use; being in ordinary years a far more certain plant in its early stages of growth, as not subject to the fly or other destructive insects.

Upon a careful review of the whole produce of the past season, we believe that the prices of either vegetable or animal food cannot possibly be lower before another harvest, if even then. It is certain, whatever may have been effected since Christmas, that previously not one-half of the usual breadth of wheat was sown; while that put in was with the land foul with weeds and saturated with water, and consequently in a very ungenial state for the progress of vegetation. To that may be added such evil influence as the inferiority of the seed from immaturity and damp, for it has been found that this was much longer than usual before it appeared above ground. While, therefore, we may hope for the best, we must prepare for the worst; and when trusting in the bounty and goodness of Providence, keep a good look-out ahead for whatever contingency may happen.

Horticultural.

The Garden.

It is seldom that the operations of the kitchen or flower-garden can be advantageously commenced in this climate till the beginning of April; preparatory measures have of course to be previously taken as early as circumstances will allow, but it seldom happens that much can be done by way of putting in out of door crops till the middle or end of the month. In this respect the character of the season, the state of the soil in relation to mineral composition, dryness, exposure, &c., will frequently occasion a difference of two or three weeks. The proper time for putting in garden crops, and indeed field-crops,

ought not to be determined so much by the day of the month, as by the state of the ground, and the temperature of the air. Ground ought never to be worked or sown, if it can profitably be avoided by waiting a reasonable length of time, when in a wet and unkindly state. The success of the crop will materially depend on getting a well pulverized seed-bed, judiciously manured, and not to deposit the seed till the soil and the atmosphere have attained to a sufficiently warm temperature, when germination will be quick, and the early growth healthy and rapid. In this and succeeding numbers we shall cull from the sources within our reach, such information as may appear suited to the generality of our readers, few of whom, we trust, are without the luxury and advantages of a garden. Communications from professional or amateur gardeners will always be thankfully received. We have of late been favoured with a few very valuable articles of this kind, and trust the number will increase.

On Planting.

The season has now arrived for transplanting fruit, and deciduous trees, in general. As soon as the frost is out, and the surface of the ground sufficiently dried, this important operation should be proceeded with without delay. Many people plant too late, hence one among the various causes of failure. But on the other hand, it is not advisable to perform the operation till both the soil and air are sufficiently dry and warm.

It should be carefully borne in mind in transplanting, that a tree is a living and highly organized being, and that its future growth and health will mainly depend upon the manner of performing the operation, and the kind of treatment to which it may subsequently be subjected. Judging by the careless manner in which these things are too commonly done, and the ill success consequent thereupon, one might imagine that trees are regarded in no higher light than stones, or simply dead matter. Till higher and correcter notions obtain, and better attention is paid to the promotion and preservation of the growth and health of plants, the raising of both fruit and forest trees will continue to be in great measure a failure. Not only should the soil be properly selected and prepared, and the work of transplanting carefully and correctly done, but the *after treatment* must be equally attended to. Protection, judicious pruning, &c., are absolutely necessary to any large and permamnent measure of success. We subjoin the following brief directions for properly transplanting trees from the catalogue of *Mr. Geo. Leslie, of the Toronto Nursery*, who has had long and extensive experience in matters of this nature, and whose capacious nursery grounds every stranger coming to this city, would do well to visit:

1. Dig the hole large enough to receive the roots entire, easily and without bending.

2. Pare smooth on the under side, *with a* sharp knife, all bruised and broken parts of the roots.

3. Let one person hold the Tree upright in the hole, whilst another is filling in the soil. The surface soil made fine, should be first put in, carefully spreading out every root and fibre, that each may meet the soil, and shaking the Tree gently, so that no vacancies or crevices are left.

4. The hole being filled, press the soil gently but firmly with the foot, and the Tree thus planted should stand about on inch deeper than it did in the Nursery; deep planting is fatal.

5. Mulching is indispensable. Put around each Tree, on the surface, to the extent of a foot or more, a depth of five or six inches of long manure, after the whole are planted.

6. In dry weather, in Spring, it may be necessary to throw a pail of water in the hole when *half filled, allowing* the water to settle *before* filling it up. For some years keep the ground, a little way around each Tree, loose and free from grass or weeds. No cattle must be allowed in the enclosure till the Trees are large.

STAKING—The moment the trees are planted, and particularly in exposed situations, Trees should be tied to a stake, with hay or straw rope to prevent them shaking about, or blowing sideways, *before they take root.* All *crooked* Trees can easily be made straight by tying judiciously to a stake.

Twenty-five to thirty apart each way, is the proper distance to plant Apple Trees in an orchard.

The Tree Peddling Business.

EDITOR AGRICULTURIST.—A "Fruit Grower's" account of the Picture book gentry in the tree business, brought to my mind the following anecdote, which I received some four years ago from the lips of one of those geniuses, who gave it as his opinion, that the Canadians were the most gullible people on the face of the earth. He said, "I have taken some two thousand dollars in orders from the vicinity of the city of Hamilton, and I will give you one instance of my mode of proceeding:—On the mountain at

Hamilton there lives a certain local magnate, to whom I sold a lot of fruit and ornamental trees, amongst them quite a number of Horse Chestnut, and in making out my bill, I added after the name Horse Chestnut, (*Carthagenian*) $1,00 each; but Mr. Amateur, thinking it was rather a big price, said he could buy them from any of Nurserymen in Canada at 50 cents each, quite as good trees, and with far better roots. Fully expecting this however, I said with some little pretended warmth; Sir, I beg your pardon, but I defy you to get them in Canada at all, why sir, the Carthagenian Horse Chestnut is quite a new thing, and I will give you now, a dollar apiece for every true Carthagenian Horse Chestnut you will bring to me; 'Oh!' says Mr. A., beg pardon, beg your pardon, Carthagenian,—Carthagenian Horse Chestnut are they? certainly, certainly, and then he gives me the cash without another word."

"Then," adds the man with the pictures, when relating this story to me, "God knows I never heard of Carthagenian Horse Chestnut before."

CHARLES ARNOLD.

Paris, C. W., March 23rd, 1861.

On Fruit Culture.

EDITOR OF THE CANADIAN AGRICULTURIST.—In your issue of January 1st there is an article headed, "Mode of destroying the Gooseberry Caterpillar." The plan there spoken of is one which I could not advise the adoption of. I have known similar means being used to young apple-trees in England, with fatal results. I have been a grower of gooseberries in England, and partly in Canada for the last 30 years, with abundant returns. In England, I had bushes upwards of 40 years old, that *every year* produced a most excellent crop of fruit. My method of cultivating the Gooseberry is this:—Early in the spring, I move the top soil from the roots, give a moderate portion of stable manure, covering it with soil. I then give each bush a slight pruning; taking out part of the old, and shortening the luxuriant branches of the new wood. Afterwards, when the buds are full, and ready to open, I dissolve about ½lb. of common salt in two gallons of water; with this, from a watering-pan, I wet the whole bush; immediately after I dust the bush with quick lime until it is well covered with the lime.

The effects produced by this dressing are these: The birds will not injure the buds; if insects are generating it will destroy them; and if the stems are infested with moss it will destroy the vegetative properties of the moss, the rains will wash it off, leaving a clean, healthy, fruit-bearing bush.

The foregoing is with pleasure at your service.

In your issue of February 16th, Mr. Ball, of Niagara, asks six questions on the planting and taking care of fruit trees.

I would say, on question 1. That in transplanting apple or pear trees, I would head back every branch to the 4th bud in luxuriant growers, to the 6th or 7th in the hardy grower; cutting out the superfluous branches.

2nd. After the hole has been well prepared, no root should be deeper than one foot from the level of the surface. Each fibre should be placed in its original (horizontal) position, and equally occupy the space around the stem. After filling the spaces between, and slightly covering the roots with fine rich soil, add a moderate quantity of good manure, and finish with soil, giving the whole a slight treading, the top being a little above the regular surface.

3rd. Mulching the ground is good, after the first year. If the soil is loose around newly planted trees, and they are not secured by stakes, the winds frequently put them in disorder. Early in the spring of the second and future years, I would cover the ground about two feet around each stem with a good coat (6 inches thick) of manure; this method will effectually prevent injury, from the severest drouths. In the fall spread this manure over the other ground.

4th. I prefer a crop of Indian Corn for three or four years after planting: it keeps the land clean and cool, for the expansion of the roots; and protects the stem and top from the scorching effects of the sun. I planted 120 apple-trees in May, 1853, and by using Indian corn as a crop, I only lost four trees: it is now one of the best and most productive orchards in the County of Bruce.

5th. No doubt whatever that trees brought from a distance succeed better than those raised in the immediate neighbourhood. I have proved this in England as well as in Canada. I have an orchard in England containing upwards of 800 trees: part were from a distance; these made very superior progress to others from our own locality.

6th. Cattle will not destroy an orchard, if kept out of it: and he's a wiseacre, that allows his cattle to go in.

Yours, &c.,

JOHN MOSELY.

Kincardine, March 16th, 1861.

Orchard Culture in the Northern Districts of Canada.

EDITOR OF THE AGRICULTURIST.—In a former communication on the subject of raising fruit in the northern counties of Canada, I promised some further suggestions on the manner of preserving the apple tree from the evil effects of frost. I have come to the following conclusions with regard to this subject:

1. That our extreme frosts rarely injure the apple tree, and then only under one condition; viz: when there is no frost in the earth on account of the depth of the snow. In this case the roots of the tree are in a medium the temperature of which must be above 32°, whilst the stem and

branches are exposed to a temperature of 20° below zero, making a difference of over 50°.

9. That more than nine-tenths of the injury done to the apple-tree by the winter, arises from the slight frosts that occur after the tree has commenced its growth in the spring,—what are called *late frosts.*

The only remedy for the former injury is to remove from about the roots of the tree any snow that may fall in the beginning of winter, before the ground has become frozen.

To prevent the latter injury the following is the plan I would propose:—In the latter end of winter, before the frost leaves the ground, place a coating of coarse manure above the roots of each tree, to the depth of six or eight inches. Let it extend from the tree as far at least as the branches extend. Allow this to remain until the tree has blossomed; the greater part of it may then be removed and spread on the adjacent land. This will keep back the blossoming of the tree from ten days to two weeks by retaining the frost in the soil; and it would thus lessen in a great degree the chances of the tree being injured by the late frosts. I have seen this practiced on a small scale with admirable effect, and I firmly believe that were it universally adopted in Canada it would at once double the product of this invaluable fruit; and thus save to the country the present large importaion.

To plant an orchard in any back County of Canada the following rule will, in my opinion ensure success:—Choose the highest piece of ground *convenient to your dwelling.* If the soil is clay, or if it is some lighter soil, inclined to be damp, run a series of covered drains through the lot, in the direction you wish to plant your rows, one drain for each row. Do this the summer before you wish to plant your trees. Then, if the land is level, or a stiff clay, plant the trees on the tops of the drains; if not, plant them midway between them. Choose your trees from the *nearest* Canadian nursery. If they could be *properly* raised on your own farm it would be all the better. See that they are properly set out. Don't plant them yourself if you have never seen it done. Mulch the trees during the hot weather for the first two or three years. Keep the tops well pruned, and don't let the stems and roots become lined with suckers and sprouts. Observe the rules mentioned above for preserving them from the frost, and you will soon have an orchard producing yearly an abundant crop of fruit.

Would the fruit be worth the trouble? Let us see. One acre of orchard, the trees, once planted, will require less labour than any other acre on the farm for any crop whatever. If it contain 50 full grown trees, they should average 4 bushels each, making a yield of 200 bushels. Valuing these at 50 cents, (what we pay for the poorest apples in our back counties) this acre would produce yearly $100 worth of fruit. Add to this the the luxury of having the farm house furnished with pies and puddings, cider and jam and eating apples the whole year round, and who will think that it is not worth the trouble?

H. R.

Hints on Sowing Seeds, Transplanting, Watering, Insects, &c.,

[The following useful suggestions are taken from the *Descriptive Catalogue of Garden and Agricultural Seeds* by JAMES FLEMING, SEEDSMAN AND FLORIST, TORONTO. The reader will find in them much information of a valuable and practical character, and pressed into a small compass.]

Sowing Seeds.—Warmth and moisture are essential, and seclusion from light is favourable to germination. The first care in sowing seeds should be to choose suitable ground, the proper season and state of the earth, and then to place them at such a depth beneath the surface as will ensure the requisite supply of moisture. In general all seeds should be covered more or less, according to their size and the advance of the season; late sowings require to be covered the deepest. The smallest seeds ought to be sown very shallow, in fine earth, and rolled or beaten firmly with the back of a spade.

The freshest seeds of some kinds often fail, from unseasonable and improper management in sowing, and other circumstances affecting their vegetation. When sown too early or too deep, while the ground is cold, wet, and heavy, they are apt to rot; when sown too shallow in a dry time, and late in the season, there may not be sufficient moisture to sprout them, or they may be dried up by dry winds or a hot sun after they have germinated. Sometimes insects destroy them before or immediately after their appearance above ground, so that the complaints occasionally made by the inexperienced are not always to be attributed to the quality of the seeds.

Soaking in warm water twenty-four or forty-eight hours, and then rolling in plaster or ashes will very much hasten the germination and growth of hard and dry seeds. It will give the plants a start of the weeds, and lessen a good deal the labor of cultivation.

To Prove Seeds, place a few in a pot of earth and keep it warm and moist. Onion Seed tied in a cloth and put first into cold water and boiled half an hour, will sprout in that time if it is good.

Transplanting should be done just at evening, or immediately before or soon after a rain. Make the holes with the *dibble,* hold the plant in one hand, and with the other bear the point of the dibble into the ground by the side of it, and press the earth closely to the *bottom* of the root, and shade with a shingle in sunny weather.

Watering.—The best time to water plants is

t sunrise or just at evening, and always use rain ater when to be had. If well water must be ed it should be exposed to the sun a day or two, ntil it rises to the temperature of the air, before is applied. Water may be given to the roots t any time, but never should be sprinkled over e leaves in a hot sun.

Thinning is a very important operation.—rerything ought to be thinned very early, even the seed leaf if the plants stand too close.—nother thinning may be necessary when they more advanced, to give them room to grow ocky. All plants when crowded together, run tall and slender: such never succeed so well.

Hoeing and Weeding.—It ought to be remembered that it is the easiest to kill weeds hen they are small, and that it is better to hoe r this purpose soon after, rather than immedi ely before, a rain. It ought also to be remem red that Cabbage, Couliflower, and Brocoli, uire *deep*, and that Onions and Turnips require *allow* hoeing; that Beets, Carrots and Pars-ps, will put out side roots and grow scraggy hoed deep after they are nearly grown; and

The rotation of Crops ought to be regarded planting a garden. Fusiform or carrot-shaped ts *earthing up* is more proper for fibrous than r carrot-rooted plants.

ots should follow fibrous-rooted ones, and every ceeding crop should be as dissimilar to the pre-ing one as possible. Onions are an exception.

Frost.—Plants are more liable to be injured frost in a dry atmosphere, and immediately er the ground has been worked. When frozen, ts may sometimes be preserved from destruc-n by a copious watering in the morning, be-e they are exposed to the sun. In spring and , when frosts are to be expected, look out for ere one the first night after the clearing up a rain storm, with the wind changing to the t or northwest.

nsects are troublesome and sometimes very tructive. Plaster of Paris, snuff, ashes, or tsifted on Cucumbers and Squashes when wet dew, is very useful against the *striped bug*. e, road dust, ashes, or snuff, scattered over ng Cabbages and Turnips, will sometimes pre-t the ravages of the *black fly*. Rolling the nd after sowing, answers a good purpose, but best preventive is a thorough sprinkling of plants just at night with whale oil soap suds, roportion of one pint of soap to seven and a gallons of water. This will kill *cabbage lice* all other *aphides*. It is sure death to all er insects when forcibly applied with a gar-syringe or rubbed on with a brush. For the t of whale oil soap, strong soap suds may be - Salt is sometimes sown in the drills with on seed to drive away the *grub*. Fine salt en broadcast over Cabbage is the best appli-on we know of for destroying the little *green -age worm*. Ducks, chickens, and toads de-y a host of insects, when suffered to inhabit garden.

Transactions.

(*Continued from page* 190.)

LAMBTON.

County Society.—One hundred and thirty four members; amount of subscriptions, $137.60; balance from 1858, $392.76; deposited by townships, $266; received for wheat sold, $200; government grant, $598.61; received for a bull, $43; sundries, $3.50; total received, $1641.47. Paid township branches $612.75; paid for agricultural papers for members, $66.50; paid for wheat, and freight &c., on do., $203.23; paid for two bulls purchased for society, and expenses on do., $145; paid for land, $272.95; sundries and incidental expenses, $92.91; balance in treasurer's hands, $248.13.

Extract from Report.

At the commencement of 1859 the prospect of all classes was gloomy indeed; very few farmers had sufficient grain to maintain themselves till harvest; flour had to be purchased at famine prices and carried into all parts of the country. When spring came there was a general scarcity of seed, few comparatively having sufficient to sow their own fields, and many had no means of purchasing that which was brought from other parts of the country. In this emergency Parliament passed a Bill, enabling County Municipalities to borrow money for the express purpose of supplying seed where it was needed. The municipalities took advantage of this Act, and were thus enabled to supply those who needed aid. The cold chilly weather in May, and the severe frost in June appeared most unpropitious; but the splendid weather which succeeded restored all that was not destroyed, and a kind and gracious providence granted us an abundant harvest. Several kinds of crop were better than ever before in this county. Of winter wheat very little was cultivated, but that little was in several cases a good crop. Spring wheat was a fair average crop. Oats were much above an average both in quantity and quality—the same may be said of peas and barley. Roots of all kinds were particularly good. Fruit was a total failure, having been destroyed by the frosts in June. Hay was scarcely half an average crop—the yield of Hungarian Grass when not sown too early, was very large—in many cases over 4 tons to the acre. Indian corn and buckwheat were in many cases in-

jured by the frosts of June and early part of September. But even with these drawbacks there is in the country an abundant supply of food. This year instead of buying, we are sending to market very considerable quantities of pork, flour, oats, &c., &c. Business of all kinds has greatly improved and the prospects for the future are brighter than for some years past.

It is said that the beautiful statue lies hid in the rough block of marble—that in order to appear in all the grace and beauty of most finished workmanship it only needs to have the superfluous matter removed by the hand of the sculptor. In like manner we may say that the beautiful and fertile field yielding its annual golden harvests, lies hid in the dense forests of Canada. The superfluous matter is removed by the strong arm of the patient settler, and the forest, once the home of the wolf and the bear, becomes in course of time, transformed into fruitful fields,and becomes the home of an industrious and prosperous population.

The future resources of such a country as this can, at least in the present state of our agriculture and manufactures scarcely be over estimated. To bear a part in assisting to develope these latent resources is the object of this and kindred societies. Let us do our part manfully and cheerfully, and in the result we will not be disappointed.

TOWNSHIP BRANCHES.

Bosanquet.—One hundred and sixteen members; amount of subscription, $116; grant from township council, $100; share of government grant, $103; received for use of bull, $10; total received, $330. Amount paid for purchase and expense of breeding stock, $324.19; incidental expenses, $13.84; balance due treasurer, $8.03.

Moore.—Seventy three members; balance from 1858, $18.33; amount of subscriptions, $75; public grant, $102.25; total received, $195.58, Amount paid in premiums, $125.-08; expenses, $45 27; balance in hand, $25.23. The directors report the society in a prosperous condition, and the results of farming operations very encouraging.

Plympton.—Eighty four members; amount of subscription, $84; balance from previous acc., $51.90; total receipts $135.90. Paid in premiums, $116.50; expenses, $12.-85; balance in hand, $6,55. Speaking of the plowing match, the directors say:

"It is rather discreditable to the mechanics of this county, that there was only one plow used at the plowing match that was made in the county, the others being made by Mr. Walker in Westminster, and the reason assigned by a great many for not competing was that they had not a plow fit to perform good work."

Sombra.—Forty one members; amount of subscription, $41; balance from previous year $60. 37; public grant, $55; total received $156.37. Paid for keep of breeding animals $35; premiums, $27.25; expenses, $8.17 balance in treasurer's hands, $85.95.

NORTH LANARK.

County Society.—One hundred and eleven members; amount of subscriptions, $22[illegible] balance from previous year, $129 93; deposited by township branches, $139 25 government grant, $479 98; total receipts $969 16. Paid township branches, $8[illegible] 85; paid for agricultural publications, $9[illegible] premiums, $347; general expenses, $132[illegible] balance in treasurer's hands, $69 91.

Extracts from Report:

The crop-viewers make the following remarks: "The long continued and exeeeding dry weather which prevailed during the summer, has materially injured the spring crop where the soil rests on the flat limestone rock and also on the stiff clay land, in the eastern section of Ramsay and Pakenham; but on the Western part of Ramsay and Pakenham and the eastern side of Lanark, where the metamorphic rocks prevail, the crops of all kinds are excellent, and fall wheat will be considerably above the average.

Several fields of fall wheat examined, will yield not less than from thirty to forty bushels per acre, and it will be of a very superior quality. The fly appears to have done but little damage, and very little rust or smut could be discovered.

Spring wheat, oats, barley, and peas, although deficient on the light lands, will, on the whole, be a fair average; in several instances, very fine fields of spring wheat were observed, particularly in the Boyd settlement in the Township of Lanark, and on the 7th line of Ramsay.

Potatoes, ruta baga, mangel wurzel, and other root-crops, all cultivated pretty extensively, have suffered from the dry weather but still have a fine appearance, and will probably give very nearly an average crop.

The improvement in stock of all kinds is ery perceptible; but there is ample room r still further improvement.

Orchards have been planted very extenrely, and are beginning to produce fruit; t many of the trees were either killed or jured last winter, and the late frosts this ring will very much reduce the crop for the esent year.

A Nursery for the supply of young fruit es has been established by Mr. Robert Mcarlane, in Ramsay, which will, we trust, be le, with Mr. Blair's, in Dalhousie, to supply better description of trees than those imrted from the United States.

Underdraining is very extensively practised; d, as a result, many fine fields of grain ma w be seen, where, a few years ago there re bogs and swamps, producing flags and shes. Among many examples of industry d perseverance in draining may be mention- Mr. James Dickson of Pakenham, who s reclaimed a large quantity of land on his rm by cutting drains.

The mixed system of agriculture practised the farmers in the County of Lanark, re a fair proportion of the various grain d root crops are cultivated, and animals of erent kinds kept for these products, is, we ceive, much superior to that in the western tion of the Province, where many farms e devoted almost exclusively to the produc- n of wheat, by which the soil must very n be exhausted, and where a failure of that ticular crop is attended with the most dis- ous consequences."

We have drawn very largely from the re- rt of the crop viewers, not only because it ncurs with our own views, but because they e had the advantage of personally visiting reat section of the Riding, and consulting ny of our best farmers on the topics here oduced, we would further remark, that the crop, of which the viewers have taken no ice, has been almost a failure, owing efly to the spring frosts and dry season. ny will feel severely the want of this icle.

We would remark that labor-saving maes are being very generally introduced, a great part of the mowing and thrashing one by machinery. Before concluding we ld make one further extract from the re- t of the crop-viewers :—

For many years after this county was first ded the people had to struggle hard for their existence; but the turning point has been reached; and it is evident, from the fine farms, the good stone and frame houses, and all the other comforts and conveniences with which the industrious are surrounded, that they now enjoy, not only the necessaries, but many of the luxuries of life in abundance."

TOWNSHIP BRANCHES.

LANARK.—Sixty-nine members; subscription, $69; balance from previous year, $152.25; received for seeds sold, $68.42; public grant, $92.86; sundries, $12; total received, $394.53. Paid for agricultural papers, $24; paid for seeds, $70.23; premiums, $64; paid for two Rams, $22; expenses, $18.79; balance in treasurer's hands, $195.51.

PAKENHAM.—Thirty-nine members; subscriptions, $72.25; balance from previous year, $8.27; public grant, $94.49; subscriptions for ploughing match, $21.25; total received, $196.26. Paid premiums, $158.76; expenses, $35.70; balance in hand, $1.80.

NORTH LEEDS AND GRENVILLE.

COUNTY SOCIETY.—Ninety-six members; subscription, $221.75; balance from previous year, $72 22; deposited by township branches, $235; received from Grenville Society, $12; Government grant, $479; total received, $1019.97. Paid township branches, $521; paid for *Agriculturist*, $5; premiums, $346.35; expenses, $78; balance in treasurer's hands, $69.62. The Directors report a gratifying progress in the agriculture of the county.

TOWNSHIP BRANCHES.

SOUTH GOWER.—Sixty-two members; amount of subscriptions, $85; public grant, $105; total received, $190. Paid in premiums, $151.30; expenses, $38.70.

OXFORD.—Seventy-six members; amount of subscriptions, $79; balance from 1858, $32.18; share of grant, $97; total, $208.18. Paid in premiums, $176.50; expenses, $22; balance in hand, $9.68.

WOLFORD.—Fifty-two members; subscriptions, $68; public grant, $86; total received, $154. Expenditure in premiums and expenses, $143,47; balance in hand, $10.53.

SOUTH LEEDS.

COUNTY SOCIETY.—Sixty-one members; amount of subscription, $62.63; deposited by township branches, $306; grant from Gananoque Society, $170,82; Government grant

$479.98; total received, $1019.43. Paid township branches, $593.98; contributed to Kingston Committee in aid of Provincial Exhibition, $100; paid in premiums, $269; paid for copies of *Agriculturist* for members, $23.40; expenses, $33.05.

Extracts from Report:

In this section, in common with other parts of Western Canada, the weather last summer was extremely dry. As a necessary consequence, the hay crop was very light. Great economy, however, was displayed in saving fodder; and straw, in place of being wasted, as been too generally the case heretofore, has to a large extent been saved and fed out.

The variety of wheat generally sown in this part of the country is that known as "Fife" or "Scotch." It has never been known to *rust* so as to injure the crop, and last year the yield was about an average. That which was sowed early succeeded the best. Some which was sowed late, did not ripen until it was injured by frost. On the front, where the land has been often cropped and become to some extent exhausted, the crop was rather lighter than usual; but a few miles back where the land is comparatively new, and has lost but little of its original fertility, the crop was very large. On the front the yield was from four to eight fold; a few miles back, a yield from twelve to sixteen fold was not uncommon.

Several members of the society, by way of experiment, sowed small quantities of wheat imported from France and Scotland. These gentlemen deserved credit for their enterprise, but unhappily the experiment was unsuccessful. There were two varieties from France—red and white—both rusted and yielded no crop at all. The variety from Scotland did a little better, but it rusted too, and the crop was almost worthless.

The oat crop was large, and of good quality. The same may be said of Peas, and the small quantities of barley and rye sowed yielded a fair return. The crop of potatoes was the best which has been known for years. There has been little or none of the rot which for so many years has proved destructive to this valuable plant, and the tubers are dry, mealy, and in every respect like the potatoes of the olden time. The few turnips sowed, were generally a good crop, and will be found peculiarly valuable when hay is scarce.

The Directors would notice that it has afforded them great pleasure to see so large and excellent a display of Agricultural Implements at the Exhibitions of the Society—all of home manufacture. They are proud to know that Gananoque, which may be regarded as the *capital* of this Riding, can now by the skill and enterprise of her manufacturers and mechanics furnish these implements of as good a quality and on as favorable terms as they can be supplied from any part of the Province.

TOWNSHIPS BRANCHES.

BASTARD AND CROSBY.—Forty six members; amount of subscriptions, $161.45; balance in hand from 1858, $12.90; public grant, $158.75; total $333.10; paid in premiums, $253; expenses, $49; balance in Treasurer's hands, $31.10.

GANANOQUE.—Forty eight members; subscriptions, $92.50; balance from previous from previous year, $116.73; public grant, $89.13; total, $298.36. Paid for keeping a bull owned by Society, $30; prizes at plowing match $45.50; paid County Society in aid of exhibition, $170.82; balance on hand, $52,04.

YONGE AND ESCOTT,—Thirty two members; subscriptions, $48; grant, $46.75; total, $91.75. Paid in premiums, $58; Agricultural papers, $11.07; expenses, $14.12; balance in treasurer's hands, $8.56.

BROCKVILLE.

ELECTORAL DIVISION SOCIETY.—Amount of subscriptions, $275; public grant $240. Paid in premiums, $234. Balance in treasurer's hands, $111.99. The report is imperfect.

Miscellaneous.

What are Trees made of.

If we were to take up a handful of soil and examine it under the microscope, we should probably find it to contain a number of fragments of wood, small broken pieces of branches or leaves, or other parts of the tree. If we could examine it chemically, we should find it more strikingly that it was nearly the same as wood in its composition. Perhaps, then, it may be said, the young plant obtains its wood from the earth in which it grows. The following experiment will show whether this conjecture is correct or not. Two hundred pounds of earth were dried in an oven, and afterwards put into a large earthen vessel; the earth was then moistened with rainwater, and a willow tree weighing

five pounds, was planted therein. During the space of five years, the earth was carefully watered with rain water. The willow grew and flourished, and to prevent the earth from being mixed with fresh earth, being blown upon it by winds, it was covered with a metal plate full of very minute holes, which would exclude every thing but air from getting access to the earth below it. After growing in the earth for five years, the tree was removed, and on being weighed was found to have gained one hundred and sixty-four pounds. And this estimate did not include theweight of the leaves or dead branches which in five years fell from the tree.

Now came the application of the test. Was all this obtained from the earth? It had not sensibly diminished: but in order to make the experiment conclusive, it was again dried in an oven and put in the balance. Astonishing was the result—the earth weighed only *two ounces* less than it did when the willow was first planted in it! yet the tree had gained *one hundred and sixty four pounds.* Manifestly, then, the wood thus gained in the space of time was *not* obtained from the earth; we are therefore obliged to repeat our question, "Where does the wood come from?" We are left with only two alternatives, the water with which it was refreshed, or the air in which it lived. It can be clearly shown that it was not due to the water: we are consequently unable to resist the perplexing and wonderful conclusion—it was derived from the *air.*

Can it be? Were those great ocean spaces of wood, which are as old as man's introduction into Eden, and wave in their vast and solitary luxuriance over the fertile hills and plains of South America, were all these obtained from the thin air? Were the particles which unite to form our battle-ships, Old England's walls of wood, ever borne the world about, not only on wings of air themselves? Was the firm table on which I write, the chair on which I rest, the solid floor on which I dwell, once in a form which I could not as much as lay my finger on and grasp in my hand? Wonderful truth! all this is air. —*English Paper.*

Sanitary Science.

In New-York there is a "Sanitary Association," but although it objects are benevolent and deserve the support of all classes, we believe it has yet been unable to effect much good. A meeting of its members was held at the Home for the Friendless on the evening of the 27th ult., at which a resolution was passed recommending the formation of a female sanitary missionary association for the city. On the occasion, several speeches were made. Dr. Harris spoke particularly of the importance of a public knowledge of the practical science of ventilation, light, economy and correctness in the formation of personal habits. The Rev. H. W. Bellows stated that there was great difficulty in gaining popular attention to sanitary reform, as it was a question involving many details. There was an unwillingness on the part of those who considered themselves very charitable persons, to stoop to the real work which charity requires. Hygiene is almost as little understood by the higher as by the lower classes. Rooms were not well ventilated and ladies' clothing was not worn in accordance with the laws of health. James T. Brady, Esq., spoke of the defective style of public houses. He stated that there were no cities in Europe where the places of refreshment were kept under ground, as in American cities. Several speakers, such as Dr. Muhlenberg and Dr. Griscom, gave it as their deliberate opinion that most of the degradation of the lower classes was directly traceable to evil habits, such as the drinking of ardent spirits and the chewing of tobacco.

Edwin Chadwick, Esq., of London, recently delivered an address on this subject, in which he stated that in several districts known to him, by a proper drainage within the houses and the use of water led into them by pipes, the death-rate had been reduced one-third annually. He said "I know one instance, in an agricultural district, and with laborers alone, where the death rate has been reduced to less than one-half, and within twelve in a thousand. From common lodging-houses, the enforcement, through the police, of sanitary regulations, typhus and diarrhea, as epidemics, (whilst prevalent among the houses of the laboring classes), are banished. In our well-regulated district institutions for pauper children, those epidemic visitations which ravage the children of families of working men are almost unknown, and the death-rate is reduced to one-third that prevailing amongst their children. The death rate among British soldiers used to be 17.5 per 1,000 annually; now, by sanitary reforms, it is reduced to 4.7 per 1,000."

The city of Liverpool, in England, used to be one of the most sickly in the world, but owing to the scientific sanitary measures which have been carried out in it during the last few years it has become one of the most healthy. During the past ten years there has been a reduction of 30 per cent. in the mortality bill. This, certainly is a very important subject, and yet it is very difficult to excite the public mind to give it proper attention.—*Scientific American.*

Curious Facts in Natural History.—"About thirty years ago the first crow crossed the Genesee River westwardly," so says a writer in the *Democratic Union*, and "that the fox, the hen hawk, swallow, and many other birds and insects, seem to follow civilization." Within thirty-six years the locust-borer made its first appearance in the United States, and as yet has not reached the locust trees of the South and West. It commenced its ravages on the east side of the Genesee River in 1830, and it was

seven years before it crossed to thewest side. The grain weevil began its course in 1828, and it progresses in the course it takes from ten to fifteen miles a year. Rose bugs have been so common in some of the Eastern States, that on their sea shores they have floated in windrows on the sands, having been driven into the sea by winds and drowned. The cedar or cherry birds were first noticed west of the Genesee River in 1828, and they are now great a pest as to induce many to give up the cultivation of cherries, especially near woodland. The curculio, which is indigenous to America, was first discovered by Mr. Gaul, the first editor of the *Genesee Farmer*, since which time it has disseminated itself over the whole county. The cutworm appeared in 1816 and 1821, (noticed as the cold years, when the whole northern country approached the brink of famine,) and are now universal. The Hessian fly was introduced, it is supposed, by the foreign mercenaries in 1777, on Long Island, from their baggage or in the forage for their horses.—*Working Farmer.*

THE RING FINGER.—In the ancient ritual of marriage, the ring was placed by the husband at the top of the thumb of the left hand, with the words "In the name of the Father;" he then removed it to the forefinger, adding, "and of the Son;" then to the middle finger, adding, "and of the Holy Ghost;" finally he left it as now, on the fourth finger, with the closing word, "Amen." *Notes and Queries.*

DESTRUCTION OF BIRDS FORBIDDEN.—The destroying all birds, except game to eat, has been recently prohibited in many of the small German States, on the Rhine, and in parts of Germany. The motives urged are these:—Wherever the farmers have killed the rooks, jays, and even sparrows, the crops have been less than where they had been unmolested. Very able naturalists have examined this, and have reported that the vast quantity of the noxious vermin which the birds destroy, greatly exceed the small quantity of grain they destroy, in searching for the insects on which they feed.

EXPLORATION OF AUSTRALIA.—Recent intelligence from Australia represents that the problem of crossing the continent from south to north has been virtually solved, and no question now remains that the land transit may be opened up, not only for the general purpose of commerce, but also for telegraphic communication. Mr. Stuart, who started on an exploring expedition last March, has returned, after crossing the country to a distance of about 1600 miles of Adelaide, and to within 300 miles of the Victoria river, where he was turned back by hostile natives. As he reached 100 miles further north than the point to which Gregory's expedition in 1856 descended from Victoria, the continent may be considered, by the joint results of these two surveys, to have been fairly opened up from one end to the other. Instead of an arid desert, it is described to be a practicable count throughout. Mr. Stuart and his companio suffered terribly from want, not only of wat but food, and also from an attack of scurv The part of the route in which water was totall absent, however, was only sixty miles, in man parts there was fine grass, besides splendid gu and other trees, including at least four kinds o palm. A very large salt lake was also discove ed in the interior, supposed from the blue ness of its water to be of great depth. Th Parliament of South Australia has voted £2,5 to enable Mr. Stuart to start again with a larg party, and complete his exploration, and ful particulars of the expedition are withheld le some rival explorers in the other colonies shou avail themselves of his information and snatc from him the triumph of final success. The ever created great rejoicing at Adelaide, as opening new field for enterprize and colonization.

A SECRET TO FARMERS.—It is worth knowing that every keeper of cows may cause the to calve during the daytime, instead of nigh or day as it may happen, causing much watchi and want of sleep. The simple method is:—When the cow is in calf, and the milk beginnin to fail, till she is about "yelled," let no milk b taken from her during the day, or at night, b milk her any time in the morning, and let no be taken but in the morning; and when her ti to calve is come, she will drop her young in th daytime. Two of our friends have tried thi simple method, and have found it correct in eve case. One who has eighteen cows has tried these two years; and now they never think sitting up at night.—*Fife Journal.*

EXTRAORDINARY SEIZURE OF BEES.—The i habitants of the New Forest in the neighb hood of Ringwood have long been acquainte with an eccentric character named Willia Cuttler, who some years ago quitted his fa leaving the gathered crops in the waggo until both the homestead, the grain, and t waggons, fell into complete decay, and erected wretched hovel on some property belonging t the Earl of Normanton, at Ashley Heath, wh he was locally designated the "Forest Robins Crusoe." At this place he turned his attenti to bee keeping. The bees proved a gr annoyance to a neighbouring farmer, who rep sented the inconvenience to which he was su jected to the Earl of Normanton; but neit entreaty nor the offer of money or another pi of land on the part of the noble earl's age could induce Cuttler to move. A warrant ejectment was recently obtained, and it w placed for execution in the hands of a sheri officer. A few days ago the officer procu plenty of help, and proceeded to put the w rant into execution. He found between 200 a 300 hives of bees. How they were to be re ved was a difficult question. Cuttler mov

ng them in safety ; they lodged upon his
s and body without stinging him ; but the
ff's representatives experienced a sharp re-
tion. After some manœuvring they got Cutt-
to the hedge bounding the place, as far as
ble from the hives, which they were much
id he would upset. He declared he was de-
ined to stop ; and he was therefore put into
rt, the horse was driven off, and he was left
he highway, at a considerable distance from
place where he commenced his involuntary
ey. Cuttler's wife, an invalid, was next
fully removed by some females. The bees
d not be safely meddled with in the daytime,
it took the men three whole nights to re-
e the bees to a piece of Cutler's land, an
ard seven miles distant. They were stung
rely, and were heartily glad when they had
pleted their novel and unpleasant task—
lish Paper.

DIAN FEROCITY.—Death by fire is still in-
d by some tribes who are not yet convert-
o Christianity ; formerly it was a universal
m. But the Foxes and the Ojibbeways in
'cular had acquired a certain renown for the
ements they introduced in the practice of
frightful art. A young Fox warrior, son of
jibbeway woman, who had been carried off
is tribe, one day made his maternel uncle a
ner. Wishing to show that he was insensi-
o the ties of relationship which united him
e Ojibbeways, he bound the arms and legs
prisoner to two stakes fixed in the ground.
hen lighted a great fire, as he said in de-
, to warm him. When he roasted him on
ide he turned him on the other. The body
Ojibbeway warrior was soon nothing but
ideous sore. Then his nephew untied him,
dd 'Return to your village and tell the
ways how the Foxes prevent their uncles
feeling the cold' The man recovered, and
ded in taking his nephew prisoner. He
d him off to his village, bound him quite
to two stakes, and taking the skin of a rein-
newly stripped off, to which a thick coat-
f fat still adhered, exposed it to the fire
it was completely lighted, he then threw it
shoulders of his nephew, saying, 'Nephew,
I was in your village you warmed me at a
fire; I in my turn give you this cloak to
you warm.' The horrible flaming cloak en-
the whole body of the unfortunate Fox,
as soon consumed,like those human torches
which the garden of Nero was lighted.—
*Years' Residence in the Deserts of North
ica.*

W TO MAKE MONEY.—Let the business
ery-body else alone, attend to your
don't buy what you don't want ; use
hour to advantage, and study to make
eisure hours useful ; think twice before
row away a shilling—remember you
are another to make for it ; find re-
creation in looking over your business ; buy low,
sell fair, and take care of the profits ; look over
your books regularly, and if you find an error,
trace it out ; should a stroke of misfortune come
upon you in trade, retrench, work harder, but
never fly the track ; confront difficulties with
unflinching perseverance, and they will disappear
at last ; though you should fail in the struggle,
you will be honored ; but shrink from the task,
and you will be despised.

SAGACITY OF THE BEAR.—That wild beasts of all kinds are scared away by fire is a well-known fact ; but the hungry bear is of so cunning a nature that it even sets at defiance the flaming circle which would at other times afford a secure protection to the sleeping traveller. It is true that the bear does not venture to cross the fiery barrier, but it contrives to avoid the difficulty in a most ingenious manner. Going to the nearest stream it immerses itself in the water so as to saturate its fur with moisture, and then returning to the spot where the intended prey lies asleep, the animal rolls over the flaming embers, quenches the glowing brands, and then makes an attack upon the sleeper. This curious fact is well known among the natives of Siberia, so that they have good grounds for the respect in which they hold the bear's intellectual powers.—*Routledge's Illustrated Natural History.*

SAND PILLARS.—I have often witnessed a phenomenon on the sandy plains of Central Asia, which accounts in some measure for the innumerable sandy mounds that are found in some regions. When seen at a distance, for the first time, it made a strong impression on my mind. About twenty pillars were in view, wheeling round and licking up the sand. As they passed along, a cloud of dust was raised on the ground, apparently eight or ten yards in diameter. This gradually assumed the form of a column that continued to increase in height and diameter as it moved over the plain, appearing like a mighty serpent rearing its head aloft, and twisting his huge body into contortions in his efforts to ascend. The others fifty, sixty, and one hundred feet, and some ascended to nearly two hundred feet. As the whirlwinds began gathering up the dust, one might have fancied that antediluvian monsters were rising into life and activity. The smaller ones seemed to trip it lightly over the plain, bending their bodies in graceful curves as they passed each other ; while those of larger dimensions revolved with gravity, swelling out their trunks as they moved onward, till the sandy fabric suddenly dissolved, forming a great mound, and creating a cloud of dust that was swept over the desert.—*Atkinson's Travels in the Amoor.*

PUTRIDITY IN WELLS.—Sometimes the water in wells suddenly acquires a putrid taste and smell, as though some animal matter was undergoing decay therein, yet which upon careful ex-

amination is found not to be the case. The Homestead tells of such an instance, and a remedy was found in the thorough agitation of the water, *by working a chain pump for two hours*, bringing the water more or less in contact with the air. The next day the water was as sweet as ever. In the case of a cistern of filtered rain water, the same remedy of agitation was resorted to with equal success.

THE FAMILY.—*The family circle is God's* blessed ordinance, and is the sweetest, the happiest, and the most hallowed spot on earth. It is the nursery of affection, of friendship, and of virtue; the place where those ties of mutual dependence and help are first formed, which, in their expanded state, unite human society; and according to the manner which the rights of the family circle are enjoyed, its duties discharged, and its true benefits realized, are the moral character, the stability, and the grandeur of a country.

LITTLE ELEPHANTS.—The buchas, or little sucking elephants of four or five feet high, are ludicrous little monsters; they become troublesomely familiar after about two days' initiation in the ways of civilized life. A stranger arriving in Howell's camp, and proceeding in all innocency to the corner where the elephants were picketed, would be immediately subject to examination by those inquisitive little brutes—one of them, perhaps, playfully removing his hat, when apparently phrenologically examining his head; while another, with cheerful familiarity, would make him stand on one leg, by winding its trunk round the other. I have known one of them considerably astonish a gentleman by insinuating the point of its trunk into his pocket, and the suddenness and facility with which it unbuttoned his pantaloons.—*Hunting in the Himalaya.*

ALPINE SUPERSTITION.—In some places the superstitions are still many. The crow and the woodpecker are evil omens; and witches have lost none of their power. *Thor* and *Woden* were evidently the gods of those who once inhabited the land; and remnants of ancient mythology are still to be traced in the credulity of the ignorant. To sit upon a house where one is sick will bring death. Whoever meets a white chamois will die. The blossoming of the nightshade, the striking of the clock when the bells ring, are tokens of evil; but if one has money in his pocket when he first hears the cuckoo sing in the spring, he will have money all the year.—*Cottages of the Alps.*

LARGE HOGS.—There have been many fine hogs brought into market at Guelph during the present season; and amongst the most successful breeders, are undoubtedly Mr. Thos. Cardsen., and Mr. John Card, of Guelph Township. A week or two ago, Mr. Card, sen., sold an immense hog, weighing nearly 700 lbs, to G George Hood, for $50; and this week, Mr John Card has sold a splendid animal, *months old, to Mr. Budd, of Guelph.* The weight of the hog is about 500 lbs.; and the breed, a cross between the Yorkshire and Suffolk. A breeder who can raise animals such as these, to weigh over 500 lbs in 13 months must have hit upon a good breed as well as the best plan of feeding them.—*Wellington Mercury.*

ARTESIAN WELLS.—Professor Newberry thinks that artesian wells cannot be bored to any advantage in Ohio. The well in the State House yard at Columbus has reached a depth of 2,775 feet [or over half a mile], and yet the water will not rise above the surface; and even if water shall be got, the Professor says it will be warm and salt, and so unfit for use.

LYING IN BED.—It is often a question amongst people who are unacquainted with the anatomy and pysiology of man, whether lying *with the head exalted or level with the body* was the most wholesome. Most, consulting their own ease on this point, argue in favour of that which they prefer. Now, although many are right in bolstering up their heads at night, and sleep soundly without injury, yet we declare it to be a dangerous habit. The vessels through which the blood passes from the heart to the head are always lessened in their cavities when the head is resting in bed higher than the body; therefore, in all diseases attended with fever, the head should be pretty nearly on a level with the body; and people ought to accustom themselves *to sleep thus, and avoid danger.*—*Med. Jour.*

KINGFISHERS.—Kingfishers are greatly susceptible of music, provided that it be played in slow and solemn strain, like the old ecclesiastical chants. There was an organ in the house, and in a room that looked towards the stream which the kingfishers frequented, and it was observed by the household that whenever music of such a character was played on the organ, the kingfishers would soon make their appearance at the bottom of the garden, and sit as if enchanted with the strains. Quick and lively airs seem rather to disconcert the birds, a fact which was not discovered until after *many experiments*, and the consumption of much time.—*Knowledge's Illustrated Natural History.*

WHAT KNOWLEDGE IS MOST WORTH.—In Herbert Spencer's essays on education—a most profound work—we find the following emphatic paragraph on the utility of practical science: "A grounding in science is of great importance both because it prepares for all this and because rational knowledge has an immense superiority over empirical knowledge. Moreover, not less is it that scientific culture is requisite for this—that he may understand the *how* and the *why*

the things and processes with which he is concerned as maker and distributor; but it is often of much moment that he should understand the how and the why of various other things and processes. In this age of joint stock undertakings, nearly every man above the laborer is interested as capitalist in some other occupation than his own; and, thus interested, his profit or loss often depends on his knowledge of the science bearing on this other occupation. Here is a mine, in the sinking of which many shareholders ruined themselves from not knowing that a certain fossil belonged to the old red sandstone, below which no coal is found. Not many years ago, $30 000 was lost in the prosecution of a scheme for collecting the alcohol that distills from bread in baking: all of which would have been saved to the subscribers had they known that less than a hundredth part by weight of the flour is lost in fermentation. Numerous attempts have been made to construct electr -magnetic engines, in the hope of superseding steam; but had those who supplied the money understood the general law of the correlation and equivalence of forces, they might have had better balances at their bankers. Daily are men induced to aid in carrying out inventions which a mere tyro in science could show to be futile. Scarcely a locality but has its history of fortunes thrown away over some impossible project."

The celebrated French dramatist, M. Scribe, has just retired from authorship on an income of more than £7,000 a year, the fruit of his literary labors.

A Parisian cook has introduced a new kind of concentrated food. A piece about the size of a visiting card, and as thin, when dissolved in a hot water, yields a capital soup.

The pleuro-pneumonia among the cattle of Massachusetts has cost, for Commissioners, and for cattle slaughtered by their orders, upwards of fifty thousand dollars. The Commissioners, are confident that the malady is eradicated.

A Triumph of Science.—The liquid of the blood is colorless, and its red appearance is due to the presence of innumerable little bodies floating in it, which are so small that three millions of them are contained in a drop which may be suspended on the point of a needle. These corpuscles are sacs filled with a compound substance, and it has been ascertained what both the film of the sac and its contents are composed of. Each one of these little bodies has its own life. They are formed, and grow, and die; and it is calculated that nearly 20 millions perish at every pulsation of the heart.

Ventilation of the Sick Room.—With a proper supply of windows and a proper supply of fuel in open fireplaces, fresh air is comparatively easy to secure when your patient or patients are in bed. Never be afraid of open windows then. People don't catch cold in bed. This is a popular fallacy. With proper bedclothes and hot bottles, if necessary, you can always keep a patient warm in bed, and well ventilate him at the same time. I know an intelligent, humane house-surgeon, who makes a practice of keeping the ward windows open. The physicians and surgeons invariably close them while going their rounds, and the house-surgeon very properly as invariably opens them whenever the doctors have turned their backs. Do you ever go into the bedrooms of any persons of any class, whether they contain one, two, or twenty people, whether they hold sick or well, at night, or before the windows are opened in the morning, and ever find the air anything but unwholesomely close and foul? And why should it be so? And of how much importance it is that it should not be so! During sleep the human body, even when in health, is far more injured by the influence of foul air than when awake. Why can't you keep the air all night, then, as pure as the air without, in the rooms you sleep? But, for this, you must have sufficient outlet for the impure air you make yourselves, to go out; sufficient inlet for the pure air from without to come in. You must have open chimneys, open windows, or ventilators; no close curtains round your beds; no shutters or curtains to your windows—none of the contrivances by which you undermine your own health, or destroy the chances of recovery of your sick.—*Miss Nightingale.*

To Prevent Rot in Dwelling houses.—Make two or more openings in the external walls, and put gratings on them to keep out vermin, from below the basement floor. Insert a tile pipe into the fire-wall with one end open to the space below the floor, and carry the pipe up the centre of the fire-wall as close as possible to the fire-flue, and out at the chimney-head. The air in the pipe will be rarefied, being in close contact with the fire-flue, thus causing a continuous upward flow, sweeping the space below the floor of all the foul air, which, in my opinion, is the chief cause of dry rot. The whole of the apartments in the house may be ventilated by means of this pipe, by inserting a tube into it at the level of the ceiling, with a valve in it to prevent down draught. I have adopted this system for the last ten years, because I know of no better.—*Builder, (London.)*

Water in London.—In a careful and elaborate report to the New River Water Company, Professor Spencer, in speaking of the corrosion of iron mains and the effect of gas leakage, states that it is computed that there are 4,000 miles of gas mains laid under the road mains of London, from which 600,000,000 feet of gas are annually absorbed into the earth, the far larger proportion of which could be saved by improved conduits. As a matter of economy, its results would pay a dividend of five per cent on the gross capital of the London companies. It is a

question for photographers how far the extraordinary excess of carbureted hydrogen with its other impurities, contaminating their water at times, may account for exceptional and unexplainable phenomena and puzzling failure.

Miss Nightingale's "Notes on Nursing"—Any one who reads those Notes without being moved in the depths of his heart, will not understand the writer of them by any amount of description; and those who have been so moved, do not need and will not tolerate it. The intense and exquisite humanity to the sick, underlying the glorious common sense about affairs, and the stern insight into the weaknesses and the perversions of the healthy, troubled as they are by the sight of suffering, and sympathising with themselves itstead of the patient, lay open a good deal of the secret of this wonderful woman's life and power. We begin to see how a woman, anything but robust at any time, may have been able, as well as willing, to undertake whatever was most repulsive and most agonising in the care of wounded soldiers, and crowds of cholera patients. We see how her minute economy and attention to the smallest details are reconcilable with the magnitude of her administration, and the comprehensiveness of her plans for hospital establishments, and for the reduction of the national rate of mortality. As the lives of the sick hang on small things, she is as earnest about the quality of a cup of arrowroot, and the opening and shutting of doors, as about the institution of a service between the commissariat and the regimental, which shall ensure an army against being starved when within reach of food. In the mind of a true nurse, nothing is too great or too small to be attended to with all diligence; and therefore we have seen Florence Nightingale doing, and insisting upon, the right about shirts and towels, spoon meats, and the boiling of rice; and largely aiding in reducing the mortality of the army from nineteen in the thousand to eight, in time of peace.—*Once a Week*

"The Dust we Tread Upon was Once Alive!"—A few feet below the level of the crowded pavements of London lies a city of richer ornament and finer architectural tastes than the great metropolis which conceals it. Outside the boundary wall, thirty feet high and twelve in thickness, the wooded south shore of the clear and silvery Thames, sloping upwards towards Camberwell and Herne Hill, was studded with the mansions of the military and civil chiefs. A beautiful landscape must have presented itself to the citizens who wandered up to the court of the sacred fane on Ludgate-hill, for on all sides, the view was unobscured by lofty buildings, and nothing was seen but the porticos and gardens of those rustic retirements and the windings of many little brooks, now degraded into drains and cesspools, which pursued their course through groves and meadows till they were lost in the abounding river. Within the rampart, wherever we make an opening and dig deep enough, between Newgate and the Tower, magnificent tesselated pavements and fragments of marble statues reward our toil. The juxtaposition of modern names and associations with those reappearances of a long vanished state of manners, is almost ludicrous—a mosaic picture of Europa on the bull, fresh in colors and perfect in design, beneath the busy multitudes of Bishopsgate-street, and bracelets of noble ladies beneath the gaspipes of Cornhill—though it perhaps has a fitter connection with the site of its discovery when we read of a splendid representation in coloured titles of Bacchus, the conqueror of the East, in front of the India House in Leadenhall-street.—*White's History of England.*

Wisdom for Winter.—Never go to bed with cold or damp feet.

In going into colder air keep the mouth resolutely closed, that by compelling the air to pass circuitnously through the nose and head, it may become warmed before it reaches the lungs, and thus prevent those sudden shocks and sudden chills which frequently end in pleurisy, pneumonia and other serious forms of disease.

Never stand still a moment out of doors, especially at street corners, after having walked even a short distance.

Never ride near the open window of a vehicle for a single half minute, especially if it has been preceeded by a walk; valuable lives have thus been lost, or good health permanently destroyed.

Never wear india rubber boots in cold dry weather.

Those who are easily chilled on going out of doors should have some cotton batting attached to the vest or outer garment, so as to protect the space between the shoulder blades behind, the lungs being attached to the body at that point; a little there, is worth five times the amount over the chest in front.

Never begin a journey untill breakfast is eaten.

After speaking, singing or preaching in a warm room in winter, do not leave it for at least ten minutes, and even then close the mouth, put on the gloves, wrap up the neck and put on a cloak or overcoat before passing out of the door; the neglect of these precautions has laid many a good and useful man in a premature grave.

Never speak under a hoarseness, especially if it requires an effort, or gives a hurting or painful feeling, for it often results in a premature loss of voice or a long life of invalidism.—*Hall's Journal of Health.*

Curious Facts in Natural History.—"About thirty years ago the first crow crossed the Genesee River westwardly," so says a writer in the *Democratic Union*, and "that the fox, the hawk, swallow, and many other birds and insects seem to follow civilization." Within thirty-

years the locust-borer made its first appearance in the United States, and as yet has not reached the locust trees of the South and West. It commenced its ravages on the east side of the Genesee River in 1830, and it was seven years before it crossed to the west side. The grain weevil began its course of destruction in 1828, and it progresses in the course it takes from ten to fifteen miles a year. Rose-bugs have been so common in some of the Eastern States, that on their sea shores they have floated in windrows on the sands, having been driven into the sea by winds and drowned. The cedar or cherry birds were first noticed west of the Genesee River in 1828, and they are now so great a pest as to induce many to give up the cultivation of cherries, especially near woodland. The curculio, which is indigenous to America, was first discovered by Mr. Gaul, the first editor of the *Genesee Farmer*, since that time it has disseminated itself over the whole country. The cut-worm appeared in 1816 and 1821, (noticed as the cold years, when the whole northern country approached the brink of famine,) and are now universal—the Hessian fly was introduced, it is supposed, by the foreign mercenaries in 1777, on Long Island, from their baggage or in the forage for their horses.—*Working Farmer.*

Editorial Notices &c.

THE JOURNAL OF THE BOARD OF ARTS AND MANUFACTURES OF UPPER CANADA: NOS. 2 AND 3.

This Journal, under the able management of Professor Hind, has commenced a career of usefulness which promises to be of long duration. The numbers before us are replete with appropriate and valuable matter, original and selected. The articles on the Rock Oil of Canada;—European emigration to Canada; Canada at the International exhibition of 1862; and others of similar character, treat of matters of great Provincial interest and importance. As the Board now got fairly into working order, this journal, which will contain official reports of its proceedings, will be perused with pleasure by all who take an interest in the material welfare of the country. The subscription is $1 per annum single copies; 75 cents to clubs; and to Mechanics' Institutes, and other incorporated societies for the promotion of the industrial arts, 50 cents, if ordered by their respective Secretaries. This arrangement or readers will observe includes the members of all our Agricultural Societies organized according to statute; and we trust many will avail themselves of the advantages thereof.

Communications to the Board or for the journal should be addressed to the Secretary, Wm. Edwards, Esq., Board Rooms, 79 King Street West, Toronto. Their Rooms contain models of Canadian Patents, a fine Library of Reference, Illustrative of the industrial and Decorative Arts and Manufactures, are open to the PUBLIC daily from 10 A. M. till noon, and from 1 to 4 o'clock, P. M. The Model room contains about 500 models of Canadian Patented Inventions. Persons from the country will find this an agreeable and instructive visit.

BLACKWOOD'S MAGAZINE FOR MARCH. New York, Leonard Scott & Co.; Toronto, H. Rowsell.

Another capital number of this long established monthly,—which shows no sign of deterioration, but rather the contrary, from age. Its contents are full of interest and instructive to the general reader. What reading man can afford to go without Blackwood, when it can be had in this cheap but well executed Reprint for $3 a year!—or, with the four leading British Quarterlies for $10 per annum! These publications, in so cheap and accessible a form, are conferring upon all who speak the English language on this continent intellectual pleasures and advantages which it is impossible fully to estimate.

Exhibitions of Agricultural Societies.

We beg leave to call the attention of the Officers of Agricultural Societies to that clause of the Agricultural Statute, clause 15, in the Act 20 Vic. cap. 32, and 16 in chapter 32 of the Consolidated Statutes, requiring all Societies receiving any share of the public grant to give one month's notice of the time and place of holding their exhibitions in the Journal published by the Board of Agriculture, or adopted as their channel of communication. The *Agriculturist* is of course the journal occupying that position in Upper Canada, but in very few instances have any of the Societies complied with the law in this respect. We shall always be happy to publish such information, of course without charge; and if furnished by the societies its appearance in the pages of the *Agriculturist* would furnish a very

useful directory to persons in all parts of the Province who wish to attend any such Shows. Let the officers of Societies merely send us their bills, or a notice of the Show in any other convenient shape, and we will publish the information in a condensed form for easy reference.

ERRATUM.—A Typographical Error occurred in our number of March 1st, in the article on *Mowing and Reaping Machines*, which we desire to correct. On page 140, 2nd column, 4th line from the bottom, for "Hussey, Hornster" read "Hussey's Harvester, and in the bottom line, instead of "Hornster," read "Harvester."

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