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THE
Canadian Agriculturist,

OR

ANNUAL AND TRANSACTIONS OF THE BOARD OF AGRICULTURE
OF UPPER CANADA.

L. XIII.

TORONTO, MAY 1, 1861.

No. 9.

Agricultural Hints and Prospects.

The present season must be regarded as a late one; nevertheless the prospects of the farmer are anything but discouraging. The large quantity of snow which fell during the winter, means both of protection and manuring, as the ground was left, after the breaking up of the frost, in a favorable condition for the usual purposes of cultivation. The weather has been remarkably dry and somewhat cold throughout Upper Canada, but of late considerable showers have fallen, which, with a moderate temperature, will bring forward vegetation with great rapidity. We are glad to learn that winter wheat generally is strong and thriving. In some localities,—as is always the case,—the plant appears sickly, especially in exposed situations, such as the knolls and high land, it has been winter-killed. But generally, we are led to hope and conclude, is saved within comparatively small areas.

Farmers have been busy for the past two or three weeks, in the earlier parts of the Province, preparing land for spring cropping; and in various sections a considerable amount of peas, &c., have been sown, under favorable conditions.

Wet, clay lands, however, are yet too hard and tender to do much with; but a few of the present fine weather will bring them to a workable condition. Every year the benefits of draining wherever properly carried out, are becoming more apparent. We have seen a healthy, which without this import-

ant, and in many localities indispensable means of improvement, would have assumed the discouraging appearance of an adjoining but undrained field, in which two-thirds of the plants had been thoroughly lifted out by the frost, and the remainder looked sickly and most unpromising. Draining also renders land much warmer and earlier for spring working, and consequently admits of an earlier and better seed-bed. On the farm above alluded to, we observed in a well-drained field, peas already above ground, sown in excellent condition, while the adjoining and undrained fields were too soft and damp to admit of the trampling of horses. Just in proportion as people practise draining on cold, wet soils, will they perceive its important advantages not in one only, but in many points of view. In these latitudes, whether in America or Europe, it is the one great, indispensable means of agricultural advancement!

We may be again permitted to remind our readers of the close connection between the care of growing roots and improved stock. The present late season and scantiness of hay must plainly demonstrate this important truth. Happy that farmer who in winter, and particularly in early spring, has the means of giving a daily supply, however small, of turnips, mangels, carrots, &c., to his live stock; the health and condition of which, whether they be horses, sheep, or horned cattle, will be greatly improved thereby. Stock may, indeed, be kept in sound, growing condition upon good hay alone, but few farmers produce sufficient of that article to

maintain a large quantity of cattle. Besides, experience has fully shown that a *mixture of food* is both better and cheaper than to depend on one or two articles only.

The present then is the time for taking active measures to secure a growth of roots. Land should have been previously prepared, and if ploughed deeply before winter, with fresh farm yard dung well incorporated, all the better. A fine, deep seed-bed is a great advantage; indeed it may be pronounced essential, for all the smaller kinds of seeds, especially Carrots, parsnips, and mangel wurzel should be got in, without delay. The sowing of Swedish turnips may be delayed to the end of the month, or the beginning of June. If sown too early, particularly on rich land, and in a moist, fast-growing season, they will be almost sure to get mildewed, and their quality seriously injured. The feeding property of all kinds of roots, particularly turnips, is much affected by the character of the soil, manure, and season, and the kind of treatment to which they are subjected. In root culture generally, the most thorough and perfect manner of doing the work, although it may involve a large outlay in labor and manure, will be found in the result the most profitable.

The most recent accounts from Britain of the state of the wheat plant, although somewhat more favorable, are nevertheless, upon the whole, anything but promising; and this remark will apply to France, Germany, and portions of Russia, and as far south as Spain. The weather continued wet and cold, and much ground intended for seeding with spring wheat that had been left over from the autumn, would, if sown at all, be very late. Our farmers therefore may pretty safely reckon on getting a remunerative price for wheat this year, and if Providence again grant us a large return, it will do much towards increasing the returning prosperity of the Province, and of placing that prosperity on a wide and enduring basis.

Scale of Points in Shorthorns.

At a meeting of the Newcastle Farmers' Club, (England) Mr. Chrisp, a well known Shorthorn breeder, gave a scale of points and their relative value of this world renowned race of cattle. As to the number of points and their comparative prominence, as set down by Mr. Chrisp, there is

obviously some room for doubts and differences of opinion; and it should be borne in mind that he offered his scale, to some extent at least, as a suggestion. We subjoin for the benefit of our readers the scale, and a few condensed preliminary remarks, which it is hoped will call forth observation and reflection.

Mr. Chrisp said that he was about to attempt a sketch of an ideal Shorthorn, possessing all those perfect points which breeders prize so much. Although most butchers like a large carcass, which brings down the scale, yet they also prize the greatest quantity of beef on the best joints. When these are not to be had together, the latter is preferred as of most value in the market. Therefore great size is discarded, as leading to overgrown, ungainly animals, difficult to fatten. On the other hand, little, dwarfed, stunted animals are equally to be avoided in breeding,—these appearing to have lost that healthy constitutional stamina which in the best Shorthorns is so highly prized. These should be weeded out, as they occasionally occur in herds from cross or close breeding, as well as from food or climate, or even local causes. The Shorthorn bull should have a symmetrical form, of medium size; body, including quarters and neck, rather long than short; bones fine, legs short; all choice parts covered with cellular flesh and fat mixed, not patchy; skin, medium thickness and mellow to touch; hair fine, silky, thickset, long in winter, not wiry; head well set on to neck; scalp wide; face *disabed a little, rather long than short, fine muzzle*, open nostrils, horns medium size, fine, clear, and waxy, free from black stains; the eyes prominent, bright, but placid; the neck a little elongated and arched, well set on the shoulders, which ought to slope backwards, be broad and level, deep, with the shoulder points; brisket deep, prominent and broad between the fore legs; ribs round, back straight, quarters long, full fleshed thighs, deep and full at twist, arms full above, fine at knee, flanks deep and full, tail well set on, at right angles with the back, and not thick or course;—colours, roan, red, white, or flecked-black, or shadings of black on skin, hair, horns, or hoof objectionable. Altogether, the animal ought to have a gay and "stylish" appearance in gait, as well as in form, which breeders cov

sider betokening high blood, and which most animals of the Shorthorn tribe have, more or less. The same characters will, with allowances for the more feminine appearance, answer for the cow, with full development of udder, not flaxy, well set teats, good milk veins, and a hereditary character for good milking qualities.

No. of Points. What constitutes Goodness.

Head—4—Moderate length, wide and rather dished, with clear horns, and flesh-coloured nose, not black.

Neck—1—Being well sprung from shoulders, and slightly arched.

Neck Vein—2—Prominent and full.

Shoulder and crops—6—Former being well thrown back, and wide at top, "points" well covered, and not prominent.—Crops being very full.

Breast—2—Coming well forward, wide and full.

Back—3—Breadth and loveliness.

Loin—4—Breadth, and being well covered, not low.

Hooks—2—Breadth, and being at right angles with back bone.

Rump—2—Not being drooped.

Quarter—2—Length, levelness, and being well filled up.

Thigh—2—Length and fineness, and being well beefed inwards.

Twists—3—Coming well down.

Hocks—1—Being well bent, and not turned in.

Flank—3—Full and coming well forward.

Back-ribs—3—Well sprung from back, and round.

Fore-ribs—3—Round, and coming well down.

Quality and hair—4—Skin not being too thin, but soft and mellow, hair long and silky.

Colour—1—Roans and reds.

Udder and Milk Vessels—2—Well formed teats and udder, large milk veins.

Potatoes and Carrots fed to Horses.

A Correspondent asks, whether Potatoes are of as much value as Carrots for feeding horses?

Roots differ considerably in their amount of nutritious matter, which is affected by the varieties cultivated, and the character of the soil, season, and manure applied. As a general thing, potatoes are richer, weight for weight, in nutritious ingredients than carrots. The most recent analysis give to the potatoes, 2.81 per cent of Nitrogenous compounds, or flesh formers, and 18.30 of Respiratory compounds, as starch, &c. Whereas in the carrot these two classes of ingredients, are respectively 1.87 and 7.91. The carrot has an excess of water, which amounts to

86.04 per cent, while that of the potato is 77.69. Although potatoes may be advantageously given to horses in a raw or cooked state, they do not relish them so well as either swed turnips or carrots. Experience has established the fact that the latter is the root particularly suited as a horse-food, and it is accordingly used extensively for that purpose. Steward, a high authority in all matters pertaining to horse management, says, that for "slow working horses, carrots may supply the place of corn (grain) quite well, at least for those employed on the farm. They might become fat enough on 70lbs of carrots a day, but would want stamina without some corn."—The White or Belgian Carrot is easily cultivated in this country and is a good yielder, and can be strongly recommended. Horse having a moderate, daily supply of them, especially as spring advances, and before grass comes, will appear sleek and healthy, and it is said will not be so likely to become affected in their wind.

Dairy Husbandry.

A very useful stand book on this subject has recently been issued in England by Mr. J. C. Morton, the well known editor of *Blackie's Encyclopaedia of Agriculture*, and the *Agricultural Gazette*, which is to form one of a series embracing the whole circle of rural affairs. It deals with dairy statistics, the food of the cow, and their choice and treatment of cows and their milk, butter and cheese making, and general management, and gives a monthly calendar of dairy operations.

From their statistics we learn that one pound of butter is produced for every 18 to 21 pints of milk, according to the condition, breed and state of the cows. This has been tried in a mixed dairy of Shorthorns and Guernsey cows, and about 20 pints of milk produced one pound of butter. From 7 to 8 pints of milk produced one pound of cheese. In Dorsetshire, where the milk is much used in making butter and skim-milk cheese, the average yield of a cow is 168 lbs. of butter, and 200 lbs of such cheese yearly. A good dairy farm will keep a cow for every three acres of pasture, "and under good management, with some arable land in addition, a much smaller extent will suffice." Most of the dairy pro-

duce of the old country is made from grass-fed cows. "There is, however, room for a great deal of economy yet in the utilising of the dairy farm, by adapting its arable part more directly to cow feeding, and so enabling the keeping of a larger stock of cattle."—And Mr. Morton cites several examples of 26 or 27 head of cow-stock kept on 50 acres of land by means of roots and green crops, whereas such a farm wholly in pasture would not keep more than two thirds of that number.

It is further stated that in all the best dairy districts of England the Shorthorn is gradually displacing other breeds of cattle, and though this breed is usually considered beef—producing *par excellence*, yet many of the Shorthorn strains are remarkable for their yield of milk. The milk is not considered so rich in butter, in proportion to the quantity, as that of some other breeds, but for cheese none are so productive. In the large dairies of London and other great cities, the Shorthorn element pre dominates.

The Advantages and Happiness of a Farmer's Life.

EDITOR OF THE AGRICULTURIST.—When we think of the never ending changes of human life, and the fickleness of human nature, and the endless numbers of trades to which a man may resort to obtain a livelihood, or independence, or perchance a fortune,—the coveted object which all men wish to obtain and for which all else is abandoned—we may wonder why the pleasures of a rural and happy life, dear friends, and the comforts of a peaceful home, are laid aside for the more bustling and glittering prospects of mercantile and speculative transactions which are subject to every commercial and political change.

My object in writing, MR. EDITOR, is to expose the folly (as it appears to me) of Farmers and farmer's sons selling and renting their farms and leaving a good prospect to join in the less toilsome but more doubtful chances of speculation.

I am a farmer myself, I have considered it impartially, and would not exchange a good prospect for one of any other trade or profession; for it is evident that the pleasures and beauties of a farmer's life in Canada are increasing every year. It is becoming as much a science as a labor, and as productive of happiness as of

profit, for those on cleared farms are free from the toils of a pioneer's life.

The great improvements in agricultural implements and scientific appliances, must tend to make our daily labor pleasant and easy.

I would not advocate that all should be farmers, but I would speak of the young farmer generally, who has a farm of his own, but who cannot submit to the steady and regular routine of a tiller of the soil,—and who, perhaps, imagines that he has abilities for a more active and business life, and must consequently rent his farm and invest his capital in some speculation. He soon gets into difficulties, has to mortgage his land to obtain borrowed money; in eight or ten years after a hard struggle he fails, and is left more in debt than he can ever pay.

This may appear an imaginary picture, but if we would take the trouble to look at many who have done so, we would find it a true one. For I can look back upon the past ten years and trace the course of many of my schoolfellows and friends, farmer's sons who might now have been independent, but are absolutely worse than nothing.

The continual failures, losses and closing up of business that we see and hear tell of every day in some town or village, make the farmer whose hands are hardened with honest toil feel proud that he is such, and thankful that he is not subject to similar misfortune. Though it cannot be denied that speculators and men of business do sometimes amass large fortunes, yet the dangers and chances by which these are obtained are very great, whilst many a farmer who was content with the yearly result of his labors is now able to live in as much comfort and happiness, though not so much wealth, as the retired merchant. The troubles and variations of business are very great; he must be continually occupied in his business, though cares be heavy upon his mind; if he is not pushing, his labor will stand still, and if once stopped is difficult to start again,—whilst the farmer who is free from such cares and troubles, goes on in his regular labor, sowing and reaping, trusting to nature and to nature's God to give the increase. And after the toils of summers are over, and mellow autumn followed by solemn winter, spreading his snowy mantle over the earth, then come joyful happy scenes in the rural home, in the quiet country, away from the disagreeable noise and bustle of the town. But I would not appear to say too much in favor of the poetry and beauty of country life, for all cannot see it alike, and I may be prejudiced with what they do see.—No, do I intend to write to a great length on the subject, for I feel myself unable properly to do so. But I hope that some who have a desire for a change may consider these truthful hints before they make it, and profit by them.

A Reader.

Newcastle, April 16, 1861.

Flax Culture.

We have been favored by W. Hutton, Esq., Secretary of the Bureau of Agriculture, Quebec, with the following letter from a correspondent in Ireland, and the subjoined extract from the *Belfast Northern Whig*, both of which will be read with interest:—

GRANCS HOUSE, Strabane, 9th April, 1861.

MY DEAR SIR.—I send you the *Northern Whig* of Saturday the 6th, in which you will see a not very accurate report of my statement of the capability of Canada West, as a Flax producing country.

The Canadian Government Emigration Agent, Mr. Donaldson, is doing every thing in his power to promote the cause, but we have no more laborers to spare in this country, except a few Cotton Weavers, who are just now scantily employed, and suffering a good deal of privation; these being not fitted for the rough work of chopping, and cultivating in Canada, it is folly to speak of; but I have no doubt the class of small farmers so very numerous in Ulster, would benefit their own condition, and the country of their adoption, if they could be induced to emigrate to Canada.

It was under this impression that I went to Belfast last week and brought the matter forward in the Chemico Agricultural Society, with the double view of calling the attention of the Flax Spinners to Canada as a source from whence to derive a supply of the article of which they are in such want; and exciting enquiry among the small farmers of this country, who so well understand the cultivation and preparation, and the profit arising from it.

Flax is an article of such value that it could well bear the cost of Freight, Commission and Insurance, in sending it to this or any foreign market, but if the charge on 4 barrels of Spring Wheat which I paid a few days ago from Guelph, be not an overcharge, viz. £3 3s. 2d Bt., it must lessen the profit of cultivation amazingly; value here £7 0 0 charges £3 3s 2d, net, £3 16s 10d. Now the same weight of Flax, 10 cwt., average price £30, charges £3 3s 2d off, net, £26 16s 10d. I mention this to show the advantage of cultivating an article, valuable enough to bear the charges of sending it to a foreign market.

The report, as given in the *Whig*, does not exactly express my views; it being desirable to ascertain how far the Flax (if steeped, and prepared as we do) would come up to the requirements of the Linen trade here, I recommended the merchants now associated for the growth of Flax in India, to send out a person well acquainted with all the processes of cultivation and preparation, and of the quality of water suited for steeping; and that he should purchase the crop while growing in such localities as he could

find these requirements; say from Messrs. Perino, who, I have no doubt would both sell and undertake the scutching, as it would afford them (Messrs. Perino) an opportunity of comparing this plan with their system of dew rotting.

This is all I would recommend them to attempt for this season. If it proved as successful as I anticipate, there would be no difficulty in extending the cultivation; and if a statement made by a gentleman at the meeting be well founded, viz., that where Flax cultivation had been introduced, the *Wheat Midge* had either disappeared, or its ravages had ceased, it would prove a double blessing to the country.

Looking at the Canadian Government's determination to promote the settlement of wild lands by emigration, I think an appeal should be made to small farmers at home, rather than the mere laborers; the latter having full employ are in a better condition than they ever were, and indeed fully as well as they would be in Canada, with the protracted winter, but the farmers, as a class are much better suited for settling in a new country, they have more self-reliance, more persevering industry, and most of them have some means to enable them to live while they are clearing and cultivating for future years. They might be settled, too, in such a way that those who came from the same district would be a mutual help and protection to each other, as the settlement of Ulster was under the Irish Society, and the London Companies.

April 11th. This is the mail day and I have just received a letter from London, from a Mr. Gamble, who states that he has seen in a Belfast paper my statement relative to the culture of Flax in Canada, and that it is his intention to proceed to that country, with a view to open a trade with England and Ireland, asking me to let him know the particular localities I visited, and the best place I think a market for the new material could be established.

He says he is well acquainted with the method adopted in Belgium, France, and Holland, and asks me if I think a concern started to prepare the fibre after the manner followed in these countries would be likely to prove remunerative?

I have written Mr. Gamble fully all I know, and have taken the liberty of giving him your address, with that of my brother John, assured that you will both consider it a duty to the country of your adoption to give all the information, and render every facility in your power to persons wishing to introduce any thing likely to add to its prosperity.

I do not know what steps, if any, the committee at Belfast may take; but the subject has now been started fairly, and is exciting considerable interest, being taken up by many of the Provincial papers.

Should the committee send out an agent, or get any person to undertake the culture and

preparation of Flax on his own account, the Government should lend them every assistance, and the Agricultural Societies should give liberal premiums to encourage it, till fairly established.

I am, &c.,

ROBERT MCCREA.

To W. HUTTON, Esq.,
Sec. Bureau of Agriculture,
Quebec, Canada.

CHEMICO AGRICULTURAL SOCIETY.

From the Belfast Northern Whig, April 6th, 1861.

Yesterday, the ordinary monthly meeting of the Chemico-Agricultural Society was held at the Laboratory, Arthur Street—John Roberts, Esq., Colin, presiding. The other members present were John Andrews, Esq., Comber; Dr. Andrews, Vice-President of Queen's College; Dr. Richie, William Ewart, Jun., Esq.; Rev. Mr. Smyth, Cranmonee; Washington Charters, Esq.; Mathew Bell, Esq., Armagh; John A. Donaldson, Esq., Government Emigration Agent, Canada; R. Gordon, Esq.; John Ireland, Esq.; Professor Hodges, &c.

CULTIVATION OF FLAX IN CANADA.

After the transaction of the routine business.

Mr. Robert McCrea, of Grange House, Strabane who had travelled in Canada, made a statement to the council with regard to the agricultural capabilities of Canada West, especially on the adaptation of the province for the growth of flax. Mr. McCrea said that, having heard before he went to America, about two years ago, of the requirements of the flax-spinner of Belfast and other parts of the North of Ireland, he felt it his duty when in Canada West to direct his attention to the subject of flax as cultivated there. He observed in one particular district there were a great number of fields of good-looking flax, and he found on inquiry that they were engaged from the farmers by the Messrs. Perine, who were Germans, and who had erected a scutch mill in the locality for the purpose of scutching the flax. The year before last they had upwards of 600 acres of flax under cultivation, and last year they had upwards of 1,000 acres. Now, it occurred to him, in looking at that flax, that, if it were grown in a place where it could be properly steeped and scutching, it might be a great matter to the flaxspinners of the North of Ireland, to whom he attributed the prosperity of Ulster.

He felt an interest in the subject, not as a flaxspinner himself, for he was none, but as a flax-grower. When in Upper Canada, he went with his brother, who was living in that country, to visit Messrs. Perine's establishment, where he found that the flax used by them, instead of being steeped, as was the practice in this country, was dew-rotted—that was, rotted by the heavy dews at night, and afterwards dried by the sun. The flax was allowed to ripen very much, and the over-ripening and

want of steeping accounted sufficiently for the difference in the quality; but he believed there could be as good flax grown in Canada as there could be in Ulster, for the capabilities of Canada as a flax-growing country had not been properly brought out. It was to state that fact to those interested in the subject that he had come to the meeting that day; and, without wishing to prevent parties attempting to procure flax in India, he thought that the manufacturers might be able to get a portion of their flax from Canada. It would, no doubt, require a good deal of time before a large quantity of flax could be cultivated in Canada. In Lower Canada the population, he might state, was principally French, who were not so ready to adopt new plans or new crops as were the Anglo-Canadian tillers who lived chiefly in Upper Canada.—There were a great many settlers in Upper who had been very successful in life, and he did not see any place in which he had ever been where small farmers had a better prospect of succeeding than in Upper Canada. He thought that thousands of small farmers in this country might materially benefit themselves by going to Canada. Now, what he had to recommend was, that the manufacturers of Ulster should send out an intelligent person to inspect the establishment of Messrs. Perine, and then to purchase some flax fields in a locality where there was good water, in order to test the question as to the cultivation of flax in that country. It was of importance that plenty of good water should be in the locality, for the water made a material difference in the quality of flax. On his own farm in this country he grew, last year, four acres and a half of flax, and for a portion of it he got £5 per cwt., whilst, for another portion, which had been steeped in other water, at the distance of one mile and a half from his place, he could only get £3 2s. 6d. per cwt. He mentioned that, in connexion with his remarks about water in Canada, because a field of flax which might be worth, in one township, having good water, say £10 per acre, would not be worth £5, in another, where the water might be impregnated with various ores, which would deteriorate the quality of the flax. It would not cost much for the manufacturers of Belfast to send out a competent person to Canada to try the experiment, and see how far it might be advisable to attempt the cultivation of flax in Canada. The flax prepared in the establishment of the Messrs. Perine was principally spun to make shoemakers' thread. In Boston the shoe-making trade was carried on to a great extent. The shoes and boots manufactured there were sent to all parts of the States, and even to South America. Shiploads of shoes and boots were sent off from Boston from time to time; and it was to supply them for that trade that the flax in Canada was principally used. It was also used for sail-cloth, and such coarse fabrics. He believed that the flax in Canada, if properly prepared, would be as good as it could be produced in this country.

He would recommend at first the flax

not to be ripened too much, with the view of saving the seed. He would sacrifice the seed; for, when the flax was allowed to ripen to such an extent, the fibre was not so fine or so useful as an article for spinning. The agent to be sent out to Canada could carry on a correspondence with the secretary of the association that was for cultivating flax in India, with the view of making each other acquainted with what they were doing. That was the substance of what he had to communicate; and, in consequence of seeing reported the proceedings of their last meeting, it struck him it might be advantageous to manufacturers to let their views be known to them, and he accordingly wrote to Dr. Hodges to state that he would attend, in company with Mr. Donaldson, Canadian Emigrant Agent, who was now in this country to give grants of 100 acres of land to farmers who might be disposed to emigrate.

The Chairman enquired as to the quality of the water in Canada?

Mr. M'Crea—They have as good water as is here. I saw none with sediment in it, as may be seen in brooks in this country.

Dr. Hodges said that the French Canadians cultivated flax to a limited extent, and that it required to be shown whether it could be extensively cultivated.

Mr. M'Crea remarked that land in Canada was strong enough to carry wheat or flax once or twice.

Mr. John Andrews—Are you aware of the reason why steeping flax is not practised when the water is so good?

Mr. M'Crea explained that their market was always in the Eastern States, and this article was good enough for it.

Mr. Andrews—But it does not appear that it would be more expensive.

Mr. M'Crea—Yes, it would be more expensive, for they would lose the seed. They dry the flax in the stook, and stack it afterwards.

Mr. Andrews—After they have taken the seed, I do not see any reason why the flax should be dew-rotted rather than steeped.

Mr. M'Crea—I spoke to Mr. Perine about it, and he said he did not know anything about steeping. I saw a field of as good grown flax in Canada as I ever saw on my own farm.

Dr. Hodges exhibited a specimen of prairie soil from Illinois.

Mr. M'Crea said he travelled through Illinois, where he saw a man cutting wheat. He was cutting at the rate of sixteen acres per day, but he only cut off the heads of the stalks, and ploughed down the straw.

Mr. Wm. Ewart, Jr., said that it was very satisfactory to hear from so competent an eye-witness the confirmation of an opinion which he for some time entertained, that Canada could produce very excellent flax. He had had the pleasure of a long conversation with Mr. Breakey, from Canada, who was very much interested in the question; and he (Mr. Ewart) was satisfied that they could grow flax there very well, indeed, and even better than he had ever

expected to see it from India, or better than they got it from Russia. He believed a good deal had already been done in initiating the growth of flax in Canada. They grew there a considerable quantity which was taken off by the Americans, having had their attention called to the subject by the agitation going on here for a larger supply. But they were influenced by others growing flax in Canada. They were greatly troubled with the weevil in wheat there, but he believed it was found that wherever flax was grown the weevil disappeared. He understood from Mr. Breakey that the system adopted in the establishment with which he was connected in Canada was the same as that practised at Courtrai, with the difference that at Messrs. Breakey's place they used cold water instead of hot. They had large tanks in which the steeping process was continued for a long time. Now, he did not make these observations with the idea of throwing any impediment in the way of Mr. M'Crea's suggestion being carried out. They could not make too great an effort to effect the object in view, and, in his opinion, Mr. M'Crea's proposal was a sensible one, and he would be glad to assist in sending out a competent person to Canada to look after the matter.

Mr. Washington Chartres inquired what price Mr. Perine got for the flax he produced?

Mr. M'Crea said it was from £2 10s. to £3 per cwt., but there were only 100lbs. in the cwt. weight.

Mr. Chartres—I would like to know something of the cost of the labour in connexion with the flax.

Mr. M'Crea thought it would not be exceedingly expensive.

Mr. Chartres—Would it not be double what it is here?

Mr. M'Crea—It would not be double. If the farmers were to take it up themselves, and work it by their own families and labourers, as they do here, it might be done at leisure times as cheap as here.

After some further conversation, upon the matter, and in pursuance of a resolution of the annual meeting, the following gentlemen (with power to add to their number) were then appointed as a committee to take the subject of flax cultivation into consideration:—Messrs. John Roberts, William Ewart, Washington Chartres, William Charley, John Andrews, R. Gordon, and Professor Hodges.

Harvesting Peas.

EDITORS CANADIAN AGRICULTURIST.—As I intend to grow forty acres of peas this season, I feel somewhat interested in the mode of harvesting them, and will therefore be much obliged by any information you may give me on the subject through the columns of your paper, and probably some of your practical correspondents may add their knowledge and experience.

I have tried many ways, such as cutting with

hooks and sickles, mowing with scythes, and pulling with horse rake; and from what experience I have had, I fall back upon mowing with the scythe, which costs eighty cents per acre, and is entirely too much to pay, and occupies too much time.

If you know of any implement specially for this purpose please make it known; if you do not, and consider the horse-rake the best implement, please state whose make to use for the purpose, and how to use it, so as not to fill your grain with all kinds of rubbish and small stones.

I feel the less delicacy, gentlemen, in giving you this trouble, as you always seem to court it, and as I have been a subscriber to the paper from its very first issue I think you will oblige,

Yours, DOVERCOURT.

March 11th, 1861.

Fat Prize Cattle—Judges should be Firm.

At the request of a subscriber we insert the following extract from the speech of Captain Tanner Davy, one of the Judges on Devons, at a recent exhibition of the Cornwall (England) Agricultural Society, as not being altogether inapplicable on this side of the Atlantic:—

“In behalf of the judges of Devon cattle, I beg to thank you for the honor you have done us. I hope our decisions have given you satisfaction; they have satisfied us, and I hope they have satisfied you. I don't much care whether they have satisfied you or not. You put the matter into our hands to decide. I knew no person in the county; I knew no person's stock. We decided according to the best of our ability. No doubt there must be dissatisfaction, because every exhibitor going into a show-yard is prepared to look with a very powerful magnifying glass at the good qualities of his animal, and he does not see any defect. We (the Judges) must apply powerful glasses to see the defects, and must award the prizes to those animals that possess the greatest number of good points—the greatest quantity of beef on the most valuable parts. As soon as my decisions were over, I took off my badge and walked about the yard to hear the remarks. One hot headed old gentleman said we ought to be put in the train and sent off to Devonshire. I asked him to be kind enough to tell me what it was all about; he pointed to a second-rate bull in the old class, and said it was better than the first prize bull. I said, ‘Why it is a year and four months older, and yet it girths only one inch more; and that is very little for an animal to grow in a year and four months.’ That he admitted; ‘but,’ he said, ‘'tis a better bull altogether.’ I told him the first-prize bull was of a very much better quality, from head to tail. He said he had nothing to say to that, but the other was a bet-

ter bull. On that I said ‘I have nothing more to say to you,’ and we parted company. Some of our friends have remarked that Cornishmen have been found fault with for not knowing how to farm. But they know how to make young bulls very fat at a very early age. There's no doubt of that. My friends and I have often before been called on for this sort of work; and therefore Cornish fat could not entice us from certain animals which had tendency to fatten.—I contend it was our duty as Judges, not to be led away by fat animals, but to see if there were not other animals, in fair condition, with a tendency to fatten, and of much more even shape. I would draw attention to the first-prize bull and the third-prize bull in the second class. They would be called by some persons two small, poor little things. But why? Only because so many cwt. of oil-cake had not passed through them. Put as much oil-cake or other nutritive matter into them, and put them side by side with others, and then see how they would look. But, you know, fat will often cover deficiencies. These little animals that we have awarded the prizes to were not fat, but they have a tendency to fatten, and it would require more powerful eyes than I possess to point out any deficiencies in their present state. I should not be afraid to meet any gentleman dissatisfied with our awards, and if he would walk about the yard with me, I would fight him, from head to tail, as to any animal that has won a prize. There was among the cows an animal that you may wonder did not get a prize. We did not notice her at all. One gentleman informed me that we did not know anything about it. I replied, ‘Very likely not,’ but I said, ‘The prize is offered for Devon Cows, as milking cows. This cow is owned by a gentleman I have known many years. She is a very beautiful animal—o. beautiful quality, and the best shaped in the class, in my opinion. But she gave milk only at one teat; and I did not consider that a cow so injured was a fit animal to receive a prize as a milking cow. In agriculture, milk is a rather important element of produce, and butter sells at a good price. We know that it is an all-prevailing law in the animal kingdom, that like produces like; and I believe that the offspring of that cow would be diseased—not to the same extent, but in the same way that she herself is. For that reason we did not award her a prize. I have mentioned these reasons to you, and let all who are dissatisfied go home and ruminate upon them. I would appeal to any practical man of unbiassed mind whether they are not reasons that ought to weigh with those who have the duties of judges in a show-yard.”

At the same meeting, Mr. Philips, of Totnes one of the judges on Short-horns, spoke for the Short-horns much after the same fashion as Capt. Davy did for the Devons:

“I am now going,” he said, “to advert to a

subject which has already been introduced. It is a growing evil, and one that ought to be put a stop to, the prohibiting on these occasions stock that have been artificially brought to an unnatural size, only for the purpose of getting prizes. It is an injury both to the public and the breeder; because such animals seldom breed; and if they do, they rarely produce good stock. I believe the remedy is in the hands of the committee who appoint the judges. You know full well that on many occasions there is placed in the hands of judges a rule that they should not award prizes to stock in an unfit state for breeding. The question is, do they adhere to that? I say not. Invariably this question is entirely overlooked, because they who have the management of these societies consider that if they were to carry out this rule they would injure the show, as such and such fat stock from certain breeders would not be exhibited. But I contend it would not be so. Carry out that rule, and you would find that these societies would have much more beneficial effect than they have now. You would find those gentlemen who declined to exhibit would soon return, and would exhibit their cattle in a natural state. Further than that, there are many who now refuse to exhibit very good stock, because they know that on these occasions the prizes are awarded, not to the most skilful breeders, but, very often, to the most extravagant feeders."

The *Mark Lane Express*, alluding to these remarks, well observes: "Our readers know how long this has been our own argument, and how thoroughly it is justified. It is this over-feeding that brings prize stock into such disrepute—that lands them in America and the colonies dear bargains and barren butcher's beasts. It is this that tends to all the humbug and secrets in the management of a herd, where one set of animals are kept for use, and another for show. It is this that deters so many good men from exhibiting at all. The remedy, however, rests clearly with the judges. No matter how ready the Stewards or the Council may be to pass over the abuse, let them only act up to, and speak out, like Capt. Davy and Mr. Phillips, and they may soon do a deal of good. Never mind what interested people may say who have dairy cows too fat to give milk, or bulls too pampered to get stock. If they are fit to be judges at all, they can estimate fairly fed animals quite as correctly as they can the over-fed. And a man who prizes a beast at a breeding show chiefly because it is made up for a Christmas one, is simply sanctioning an absurdity, a contradiction, and a delusion—if not a dishonesty."

French and Irish Progress.

We have been not a little surprised to find in a recent number of the *Agricultural Review*, published in Dublin, some statistical facts which

seem to show that Agriculture in France has steadily improved as farms diminished in size and increased in number, while, on the contrary,

Ireland agricultural products have diminished as the size of farms has increased, and the number consequently diminished. Thus going back to one of the most calamitous periods of Ireland's history, 1847, and comparing it with the last year, during which interval the size of farms in most districts has been more or less increased, we find the following results stated:—

	Acres under cereal crops.	Acres under green crops, excluding potatoes.
1847.	3,313,579	561,934
1860.	2,637,557	464,080

And the retrogression is only made the more apparent by the fact that, in 1847, we had under potatoes only 284,116 acres, whilst in 1860 we carried our foolish trust in the treacherous root so far as to lay down 1,594,486 acres under it. Still more striking is the contrast between French and Irish progress when we bear in mind that French production has been increasing coincidentally with a steady multiplication of small holdings, whilst Irish production has been falling off coincidentally with a steady absorption of small holdings by large farms.

In 1858, a paper was read before the Royal Dublin Society on "The Agricultural and Social State of Ireland," in which we find it said: "A brighter and happier day has begun to dawn on Ireland, and the tendency all over the country is onward in the march of improvement."

The smaller farms are yearly decreasing in number, and with them the smaller tenantry also. From 1849 to 1856 there has been a diminution of 14,146 holdings of 1 and not exceeding 5 acres; of 33,966 holdings, above 5 and not exceeding 15 acres; and the total diminution of all holdings between 1841 and 1856 is 98,625. There still remained, in 1856, 82,035 holdings of 1 and not exceeding 5 acres; and 179,931 holdings of 5 and not exceeding 15 acres. The total number of holdings of all sizes in 1856, was 592,489. As the number of the smaller holdings decreases, and the number of the larger ones increases there appears little doubt but the better culture of the ground will follow: fields will be enlarged; useless fences, and ditches and roads will be eradicated; better houses and offices be built; and improved husbandry follow." We have already compared 1847 with 1860, as to the area under cereal crops. When Mr. Miller wrote the above he had before him Mr. Donnelly's Agricultural Returns for 1857, and was thus able to see how the facts of the case bore out his theory that improvement must be promoted by the consolidation of farms. In the twelve different descriptions of crops mentioned in those returns, there

are only three which show any, and that but a trifling increase, in 1857 as compared with 1847 these are potatoes, mangel wurzel, and hay. In all the rest there is a falling off:—

	Estimated produce	Average produce per acre.
Wheat...	1847, 2,926,733	qrs. 6.6 barrels.
	1857, 1,662,957	" 5.0 "
Oats...	1847, 11,521,606	" 8.4 "
	1857, 8,895,347	" 7.2 "
Barley...	1847, 1,379,029	" 8.7 "
	1857, 848,783	" 7.3 "
Pere....	1847, 274,016	" 8.6 "
	1857, 28,553	" 7.3 "
Rye....	1847, 63,094	" 8.2 "
	1857, 49,252	" 5.2 "
Beans and Peas,	1847, 84,456	" 28.4 bushels
	1857, 44,046	" 25.9 "
Potatoes.	1847, 16,385,562	bbls. 57.7 barrels.
	1857, 28,074,751	" 24.5 "
Turnips.	1847, 5,760,616	tons. 15.5 tons.
	1857, 4,360,197	" 12.5 "
Mangel-Wurzel	1847, 247,269	" 18.0 "
	1857, 298,515	" 13.9 "
Cabbages	1847, 361,720	" 14.4 "
	1857, 327,875	" 10.9 "
Flax....	1847, 2,798,976	stone 48.0 stones.
	1857, 2,315,980	" 23.7 "
Hay.....	1847, 2,190,317	tons. 1.9 tons.
	1857, 2,536,644	" 1.9 "

A falling off, altogether, in crops, to the amount of nearly eleven millions and a quarter of money, whilst the increase in stock was not half that amount.

And if the comparison were carried down to 1860, every one knows that it would be still more subversive of the theory adopted by Mr. Miller.

Thus, then, production in Ireland falls off as the small holdings diminish in number, and in France it increases as the number of small holdings increases. But what is still more remarkable, keeping in view the theory in question, is, that even taking the same year, and comparing the large and small holdings in Ireland, it appears that the results are just the reverse of what is generally supposed. Thus, taking the year 1857, Mr. Hayes, in his pamphlet on the "Waste Lands of Ireland," divided the farms into two classes:—No. 1, averaging 15 acres 3 rods and 38 perches, and comprehending 8,148,022 acres; and No. 2, averaging 142 acres 1 rood 18 perches, and amounting to 12,072,560 acres. We need not follow Mr. Hayes through the several tables which he gives to show how these were distributed under the various crops and stock. The results in cash are sufficient for our present purpose. The estimated value of the crop on No. 1 was £16,039,593, and of the stock £17,233,176—total, £33,272,769; No. 2, the large farms, with a half more of land among them, gave crops valued at £11,288,645; stock £17,113,252, giving a total of £28,401,897. In other words, even in Ireland, the small holdings,

with inferior land, yielded an average of more than 8s. per acre, whilst the large, with the best land, only yielded the country produce to the amount of 47s. per acre!

A Description of Lois-Weedon Husbandry, 1860.

Very early last spring a first-rate practical farmer visited the Rev. S. Smith of Lois Weedon, went over and inspected his field of wheat, and said,—'It is capital land, sir,' but nothing more. He was undeniably right, says Mr. Smith, that is capital land, beyond his estimate by 15s. at least. For a portion of the field which was dug double first, has a staple of rich mellow loam, from 18 to 20 inches deep; and the remainder a few inches less. So that, beyond a doubt, it is first-rate land, of the highest value for the growth of every description of crop.

But as Mr. Smith's visitor came to inspect and report, he should have gone below the surface and said something more, as I did when I visited the spot, investigated what I saw there, and believed. Resting where *he* did, the inevitable conclusion was, "there is nothing in it; no wonder the crops are heavy, for the land is good." He should have gone to the ditch side, says Mr. Smith and looked. He should have taken a spade and dug. His office was a responsible one, and he should have rigidly searched out the truth. He would then have got an inkling of the gist of the whole scheme. He would have found out that the staple of Mr. Smith's field at the outset was, for the most part, only five inches deep, with a subsoil, generally, of stiff yellow clay. This five-inch staple was deepened by degrees. At intervals, inch by inch, the clay was brought to the surface and mixed; and at the end of seventeen years—for there were two crops before the first sowing of wheat—the field has become what it is, a brown deep loam, worth 60s. an acre.

His duty was not over then; he should have found out the actual rent of similar land under ordinary tillage. Mr. Smith's own tenant has, in round numbers, a 400 acre farm adjacent, with a deeper staple, and of similar quality, which he rents at 27s., and for heavy, hard-working land like that, he (Mr. Smith) declares it is rent enough. *That*, he believes, is the average of such land all over his parish of 2,000 acres. A wide strip of the same heavy land, of the same geological formation, runs right through the country, north and south, and lets, he believes, at much the same rate. And yet the field he cultivates is picked out and arraigned as capital land—the best wheat land in the country; and with laughing crops, never ending, still beginning, pleads guilty to the charge.

But this was not all. When Mr. Smith's visitor ended his survey, and came back from the

triple-rowed wheat, and the yard-wide fallows, he gravely demanded, "Sir, why would not *this* do as well; set apart an acre alternately wholly for wheat, and another acre alternately for fallow. Let the two acres be cropped and fallowed in succession. It would be easier, why not as well." It was quite impossible to answer this question seriously and fully then; and so it is now, without speaking a pamphlet, and that would be a tiresome tale twice told. Why, it touches the main point of the very gist of the scheme. The scheme is, to get, without manures, a full crop of wheat, and at the same time a bare fallow, too. Suppose, then, two acres on the fallow intervals and triple-row system, and another two acres on the suggested plan. In a succession of years 35 bushels would be the possible average of the latter two acres together; while, judging from the past, the yield of the former two together would be 70 bushels—just—double as much.

The practical farmer objected still. "The plan seems a sound one, and the practice is good, but the details are difficult, troublesome to learn, and hard to carry out—and where are the hands? It cannot be done on a *farm*. Besides we don't depend upon wheat; things are altered now, and other produce is as paying as wheat."

He was so far right, that things are much altered now. There is full employment for the labouring man. With many drawbacks, still times are not bad, so that what drew attention in '50 and '60 was obsolete. Mr. Smith agrees with myself, and will never believe, notwithstanding, that the plan cannot be done on a *farm*, for a change has arisen in our favor too. Hand labor is scarce; but we need not trust mainly to that, for steam has come to supplant the fork and the spade, and trenching can be done as well by the plough, as described in a former paragraph.

There is a great virtue in the short monosyllable, *if*. "If farming were his pursuit," writes the Rev. gentleman; "if his tastes lay supremely that way; if, above all, other and higher aims were not his calling, he should take in hand his 400 acres of clay land at once; he should do so with confidence, for his thirteenth wheat crop (for 1859) was 38 bushels. The fourteenth (for 1860), unthrashed as yet, (January, 1861), was exceedingly fine. Having been early sown, it was cut early, without a drop of rain; and again the estimate of the yield is 40 bushels. The growing crop for 1861, notwithstanding the frost, looks strong and well, with scarcely a gap." Thus, year after year gives confidence in the scheme; and he speaks with the utmost sincerity when he declares that, according to the best of his belief, and judging from the past, the annual results of an actual farm would be highly successful.

Trials have taught him on what plan he should farm. Twice he has grown oats in tripple rows, and 3 feet intervals; and he makes a heavy de-

mand on the faith of the reader when he tells him that the produce of the first year was 8½ quarters per acre; or rather half an acre of fine upstanding Poland oats—upstanding from being earthed up—the weight of which was 46lbs. to the bushel; and of the second year nearly the same. (And here I would fain observe, that I myself last year grew winter-barley on the same plan, and hope, again, to do so this year, equal to 10 quarters and upwards per acre, cut in July.) Mr. Smith's winter beans also, have been a full average crop, year after year in rows 5 feet apart, and not a weed being allowed to seed. These, however, with the help of manure under the rows.

The general mode of cultivation, then, would be with manure for oats, barley, beans, and roots. The intervals should be wide, seeing that, while the produce of the *half* is as much as the *whole*, the additional benefit of *clean, deep, ready prepared*, fallow for *future crops is beyond all price*.

I do not propose in this paper to embrace or discuss the whole subject of potato culture, but merely the putting-in of the crop. It may, however, be right to offer one or two suggestions of a general character. It has been urged that to dry the sets will greatly tend to prevent the attack of the potato disease; many of mine were nearly dried up last year, but I had quite enough of the disease. True, they were dried under a hovel by long exposure to drying winds, uncovered—not by stove-heat. Where lies the difference? * Dusting the sets with lime or gypsum is said to be efficacious. I have not found it so with lime; gypsum I have not tried. Manuring with lime and salt is another of the many safeguards adopted; it also proves unavailing. Peruvian guano, again, is extensively used, and with this good effect, at least, that it so promotes and stimulates the growth of the crop, that it forms good and large tubers at a very early period. Manuring with farm-yard manure immediately before planting is decidedly conducive to an attack of the disease; it ought to be applied in the winter, if requisite to its fertility. A dry soil and a dry season conduce much to the safety of the crop; ungenial weather and a wet soil are fatal. The approved varieties for planting are but few. If a new variety is introduced into a district untaunted with the disease, it seldom lasts two seasons. The "fluke" potato in the past season stood here better than any other. On soils that could not be kept dry they constituted our best crop. In one instance coming under my own knowledge the crop was free, owing to the dry, rich loam where they were grown. The "snowballs" came next, but suffered severely. Regents were

* I am aware that artificial heat of a sufficient temperature to destroy the virus is the grand secret; but what a difficult matter for growers to undertake!

almost a failure. Ash-leaved not their own again. The highest quotations this week run thus:—Flukes, 160s.; Regents, 120s.; Dunbar, ditto, 180s.; North Berwick ditto, 125s.; Perth ditto, 105s.; Perth rocks, 100s.; Scotch cups, 110s.; Scotch rocks, 105s.; French Whites, 90s.; Belgian ditto, 80s.; Dutch ditto, 80s.; and other kinds 80s. These of course, form the prevailing varieties, for which, on application to a London salesman, any grower may obtain seed, and which he will get at about two-thirds the average price of "the heads." An intelligent London salesman is, upon the whole, the best person to consult as to the sort to be grown, and in making application, a description of the soil should be given, and the district where situate should be named. I would only make one further remark; it is this:—It is imperatively necessary to the prosperity of the crop that the land be kept dry; certain failure is the alternative.—A. HARDY in *Mark Lane Express*.

Self-Propelling Agricultural Steam-Engine.

[The following description of Aveling's Steam Engine, from the *British Engineer*, will interest our readers, and from what we saw of its performance last summer at the Royal Agricultural Society's Show in Canterbury, we believe it to be strictly correct. Some of the heaviest steam ploughs, threshing machines, &c., were drawn by the locomotive with apparently the greatest ease and safety through the streets of that ancient city, crooked and narrow as many of them are. The progress of steam as a motive power in agriculture is making some, if not rapid advances. Ed'n.]

Since the first application of steam power to farming purposes, it has been more or less desirable to make the engine self-propelling, so that in taking it from one farm to another, as has often been done, the necessity of from five to ten horses may be dispensed with. Some of our makers of portable engines have turned their attention to this matter, and among those who have most successfully supplied the want in question is Mr. Thomas Aveling, the well-known implement maker, of Rochester. Without emulating the ingenuity displayed in the 'traction engines,' Mr. Aveling has contented himself with applying to the ordinary portable engine of the farm, such means of self-propulsion as shall secure its progress from one estate to another, the speed slow and under complete control, no matter how hilly, rough, or heavy the roads. On Tuesday last a

trial of two of Mr. Aveling's engines were made in the neighborhood of Rochester, in the presence of a number of gentlemen interested in the application of steam to agriculture. The engine had a 9 in. cylinder, 12-in. stroke, and 5½-in. driving-wheels, geared to make 1 turn for every nine of the crank. The weight, including 3 cwt. of coal and 150 gallons of water, was about 7½ tons. The steam was maintained at about 70 lbs. pressure, and the speed of the crank-shaft varied from 120 to 140 turns per minute. The engine drew behind it a threshing and cleaning machine and straw elevator, weighing, together, in the neighborhood of six tons. A circuit of about five miles was made over a very hilly portion of the parish of Frindsbury, adjoining Strood. The engines and trains ascended and descended long inclines of 1 in 12, maintaining a uniform speed of nearly three miles an hour in both directions, generally making an abundance of steam, moving with great steadiness, and steering with the utmost ease in any direction. The ground included hard gravel and heavy clay, on both of which the engines proceeded without difficulty. On their return they came through the main street of Strood, crossing the new bridge, and passing through the principal streets of Rochester on their way to Mr. Aveling's works. A great number of horses were passed, but none exhibited any signs of alarm, even when the strange procession came suddenly upon them. The engines were in complete order at the completion of the trip, and their performances gave much satisfaction to those who witnessed them.

Agriculture: Its Past, Present and Future.

(Continued from page 237.)

The importance of Improved Means of Locomotion for our Farm Steam Engines is well illustrated by the following fact:—On a recent visit to a spirited improver, on a heavy farm, I saw Fowler's steam-plough working a circular saw instead of drawing the ploughs. "You see," said my friend, "here is my £700 worth of power unavailable for cultivation. It weighs seven tons, and although our land is drained it is impossible to get it about our stiff clays. I propose laying down a light rail for it through the centre of this 250-acre piece, so that its power may be at any time exerted, either on the land or on the farm-yard." And this reminds me how unreasonable it is of the Royal Agricultural Society of England to try all their implements in the hot, dry month of July, when the winter difficulties of a stiff clay farm are thus practically ignored. Ed

us hope that the prize-sheet of this society will offer prizes for the best and cheapest railway means of rendering steam-power available at all seasons, except during severe frost. I am gradually coming to the conclusion that such means will be a necessary concomitant of steam culture, as it has been to our locomotion. It must not be forgotten that one meritorious feature of Mr. Smith's (of Woolston) system of steam culture is, that there is very little necessity for removing the heavy engine—a great advantage in wet seasons on a heavy-land farm. While on this subject permit me to quote a letter from Mr. Pike, which illustrates most forcibly, clearly, practically, and truthfully the enormous advantages resulting from *The Use of Steam in Cultivation*, and of the necessity for fixity of engine in wet weather on stiff clays. "Stevington, near Bedford, Dec. 31, 1860. GENTLEMEN, —I very willingly send you my views and opinions upon the Steam Cultivator. Before I came into Bedfordshire I farmed in Buckinghamshire, when I knew the land of Mr. Smith, of Woolston, and having witnessed the great improvements he subsequently made by his system of steam cultivation, I was induced to order a set of the apparatus for three seasons, and having done upwards of 2000 acres of land with it, I am in a position to speak with some confidence as to its success. The effect on the crop has been very visible this season, but I think the greatest advantage was manifested last harvest. My wheat crop was particularly good, which, after so much wet, I had no right to expect on such heavy land; but I find, after steam cultivating, the water gets down to the drains so much quicker, indeed I have now dispensed with the furrows together; one field, which is rather steep, containing fifty acres, all lies on the flat and I never saw any water stand upon it, although the land is very stiff. My farm, belonging to the Duke of Bedford, contains about 370 acres of arable and 130 acres of grass land. I formerly worked fifteen or sixteen horses, but since I have got a steam cultivator I have managed with seven or eight, and have always been much more forward with my work than when depending upon my horses; indeed I should be very sorry to farm this strong hilly land without steam power. I am also enabled to grow a much larger acreage of root crops with a heavier yield. The present season proving so excessively wet has prevented me doing so much work as I should have done, still I am very much forwarder with my work than I could have been with fifteen horses to keep, whether able to work or not. I have 75 acres of wheat looking remarkable well, some of which would certainly not have been sown had I not had the steam cultivator. I have also put in my tares with the steam cultivator; on account of the wet I sowed them on the stubble before breaking it up; they promise better than those around me, put in the ordinary

way. I therefore entirely disagree with people who entertain the notion that a steam cultivator is of little use in such wet seasons. I have found it exactly the reverse. I have also broken up and crossed my wheat stubbles, intended for roots and mangolds, and, notwithstanding the wet, I have made a good job of them. I usually bout this land in 27-inch ridges, as I think it lies drier and sweeter for the winter; but the backwardness of this season has prevented me. My clover leys I broke up just before harvest, and as usual made a *bastard* fallow of them. From long experience on clay land, I am convinced that this system is a surer mode of securing a good wheat crop than leaving your clover ley down until Michaelmas; it also has this advantage, the work of the farm does not fall in so much at one particular time. My tare land was broken up before I commenced the clover leys. Upon my bean stubbles in an ordinary season, I use my steam cultivator only once, merely harrowing once before and once after the drill. Last year I cultivated sixty acres of bean stubble in this way, upon which I had most excellent crops of wheat. I kept an accurate account of the cost of preparing this land by steam, and found that for labour, fuel, etc., it was exactly 4s. 7d. per acre. I have no interest whatever in extending the use of the steam cultivator, but feeling obliged to Mr. Smith and yourself for enabling me to cultivate my own land cheaper and better, I have thrown open my farm to all comers, and, in addition to many from distant counties, it has afforded me pleasure to find some of my neighbours, good practical farmers, following my example; for when I commenced, very few thought I was acting wisely in making so great an outlay in what they termed 'an experiment.' In Mr. Dring's let me notice he says that he finds setting down a large piece is a mistake; I think it is a mistake to set down to small pieces. I have one field of 36 acres which I break up without going into the field at all. I put the engine and windlass in an adjoining field, and finish headlands and all, without shifting either engine or windlass. I have another field of 50 acres, in which I have dug a pond at one end, and set the engine and windlass against the pond, and cultivate the whole without shifting or requiring a horse to fetch water. I sometimes dam up drain or ditch, and obtained water in that way, for in a wet season water carting is a great nuisance. I have increased the length of my ropes to enable me to do these large fields. I expected it would take more power, but I don't find it makes much difference to my engine, which is one of Clayton and Shuttleworth's 3-horse double cylinder. I was always told, 'Don't get too much rope out, you will want so much more power.' I am no engineer, and cannot go into the reasons, but I find from experience that the length of rope makes very little difference to my engine. As

before stated, I have now done with the steam cultivator upwards of 2,000 acres of land, and my rope, although the worse for wear, is still in working order; the other portion of the apparatus is very little the worse for wear. I am convinced that, if people will attend to the coiling of the rope, and exercise moderate care, the rope will last for years. I am sure the expense of keeping the whole in repair is not nearly so much as the repairs of a steam thrashing-machine. I prefer the engine and windlass separate, as they are more easily moved from field to field and along bad roads, than the combined engine and windlass I had on trial. I don't think much will be done in letting out steam cultivators, as the expense and trouble of haulage is so much greater than with thrashing machines. I speak from experience, as I have let out both, but have given over letting out my steam cultivator; indeed, I have 90 days' work a year for it on my own farm.—I am, gentlemen, yours truly, WILLIAM PIKE.—Messrs. J. and F. Howard, Bedford.

The Test of our still Backward Condition in Agriculture, and the Necessity for its Improvement.—According to our best calculators, the average gross available agricultural product of Britain is barely £3 15s., or less than four rents, per acre. Our arable and pastoral available acres may be set down at 60 millions. Our population is 30 millions. We don't produce enough to feed them and their animals, and therefore they not only consume the produce of two acres per head, but are obliged to consume, at least another acre per head of foreign produce. Let us test this calculation by an unerring proof. 340 convicts in our City of London at Holloway consume weekly 2s. 3d. worth of food, or by the year £5 17s.; clothing, per week, 4d., 17s. 4d.; paupers in our East London Union consume weekly 3s. 8½d. worth of food, or by the year £9 11s. 9d.; clothing per week, 3½d. So putting the pauper and the convict together, each would consume £7 14s. 4½d., or more than the produce of two acres. How many acres would an Alderman of the City of London require? It really is a humiliating fact that we are unable, or rather unwilling, to feed our own people; for my own return per acre, on my own poor farm, is more than three times the average of the kingdom. Therefore, I know we could feed our people if we chose to invest enough capital and intelligence, both as land lords and tenants.

Spirited Instances of large, but successful Investments.—A friend of mine in Norfolk, who had farmed 1,200 acres of poor light land for some 25 years, told me the other day that he had expended £70,000 in oil-cake, and £50,000 in artificial manure during his occupation. This would be £100 per acre over the whole farm—

pretty well as a tenant's investment; and we can hardly be surprised that his once poor rabbit warren land has now become highly fertile, profitable to the tenant, and producing a largely-increased rental to the landlord. But has the landlord done nothing in this matter? Oh yes! He has given hope and security to his tenant by a long and by a renewed lease. He has retained a good farmer on his estate, and sees in the rising generation of that farm young men brought up to a high and intelligent culture as a system. A foreigner was the other day, much astonished to see a farm-house, erected by the landlord, at a cost of £4,000, for the son of this farmer, who also farms largely. If the tenant has found and raised capital enough to increase the live stock and manure the soil, the landlord has been wise enough to provide the necessary accommodation and shelter for them. I will give also a spirited instance of recent judicious improvement on the part of a landlord. A merchant, who had realized a fortune in our colonies, and understood sheep, purchased an estate of 4,000 acres, in a county north of London, for which he paid some £130,000 or £140,000. It was a noble property, but, like many such, neglected, unimproved, and, consequently low rented. The land, a stiff-clay, on the banks of the Thames, but undrained, and consequently, unprofitable. Most of it was in pasture. The owner is draining the whole of it four feet deep, eighteen feet apart, and when I visited the property a heavy stream of water was flowing from the aggregated drains—all top, or rain water. The result may be easily anticipated: the fine Lincoln sheep, which now thrive upon it, give evidence of its altered condition, and will pay a double rental. The same gentleman has thrown down the crooked fences, trimmed those that remained, improved the roads and buildings, and deepened the cultivation on the arable by steam power; in other words, the rental will be £8,000 per annum instead of £4,000. The whole drainage will be completed in three years, at an expense of £33,000, or something over £7 per acre: probably not less than £50,000 will be the total investment in improvements. The increase of the roots and winter food by this operation is already surprising. There is nothing in our history more contemptible in the eyes of a commercial man than the frequent and futile attempts of our governors and legislators to fix the value of commodities, whether by bounties or protection. Such attempts have invariably failed, as will be seen by the fluctuating prices and quantities of corn exported and imported, of which I annex tables:

Import and Export of Foreign Wheat and Flour.—Statement of the Total Quantities of Wheat and Wheat Flour imported into and Exported from Great Britain in each Year from 1697 to 1846.

Years.	Imported.		Exported.	
	Qrs.	Qrs.	Qrs.	Qrs.
1697	400	11,608	1772	25,474
1698	1,859	6,586	1773	56,857
1699	485	537	1774	289,119
1700	5	40,057	1775	560,928
1701	—	0-3,34	1776	20,578
1702	—	90,230	1777	233,943
1703	50	106,615	1778	109,394
1704	2	09,314	1779	5,039
1705	—	96,185	1780	3,915
1706	77	188,332	1781	159,890
1707	—	174,155	1782	80,895
1708	83	93,989	1783	583,123
1709	1,552	71,619	1784	216,917
1710	400	16,607	1785	110,863
1711	—	80,911	1786	51,463
1712	—	148,539	1787	59,339
1713	—	179,969	1788	148,719
1714	16	150,665	1789	112,658
1715	—	173,237	1790	212,377
1716	—	75,770	1791	469,056
1717	—	25,637	1792	2,417
1718	—	47,391	1793	490,338
1719	20	110,533	1794	327,001
1720	—	91,143	1795	317,793
1721	—	52,748	1796	876,200
1722	—	178,915	1797	411,767
1723	—	168,082	1798	396,721
1724	148	247,162	1799	461,185
1725	12	211,175	1800	1,261,529
1726	—	143,626	1801	617,693
1727	—	31,030	1802	647,663
1728	71,574	3,995	1803	377,703
1729	40,315	18,993	1804	461,140
1730	70	91,530	1805	920,873
1731	4	130,650	1806	310,342
1732	7	202,612	1807	501,946
1733	7	427,425	1808	84,899
1734	9	498,717	1809	455,987
1735	9	155,280	1810	1,567,126
1736	18	11,218	1811	366,131
1737	32	406,671	1812	290,710
1738	3	598,234	1813	599,006
1739	23	239,492	1814	852,567
1740	5,469	54,391	1815	19,911
1741	7,540	45,417	1816	219,861
1742	1	293,693	1817	1,080,839
1743	3	375,979	1818	1,566,31
1744	2	214,274	1819	471,607
1745	8	323,340	1820	591,732
1746	—	131,105	1821	137,681
1747	—	270,491	1822	47,593
1748	6	545,240	1823	23,951
1749	382	631,007	1824	85,181
1750	280	950,453	1825	391,588
1751	3	662,957	1826	582,276
1752	—	420,117	1827	306,65
1753	—	300,754	1828	757,746
1754	201	356,741	1829	1,670,034
1755	—	217,466	1830	2,103,319
1756	5	102,752	1831	3,22,266
1757	141,562	11,545	1832	681,765
1758	20,353	9,231	1833	59,635
1759	162	227,641	1834	0-9-2
1760	3	393,614	1835	69,635
1761	—	441,936	1836	264,400
1762	56	295,485	1837	575,927
1763	72	4,9,533	1838	1,380,817
1764	1	396,857	1839	2,852,398
1765	104,547	107,126	1840	2,352,265
1766	11,029	161,939	1841	2,691,555
1767	497,905	5,071	1842	2,916,835
1768	349,269	7,433	1843	1,061,942
1769	4,378	49,592	1844	1,379,261
1770	34	75,449	1845	1,1-1,927
1771	2,510	10,089	1846	2,351,908

fertilizing the soil is a useless expenditure of time and money.

If such a belief rest upon a foundation of fact, what an enormous amount of motive power has not mankind uselessly expended in the operation of manuring the soil—for the practice, (notwithstanding Hesiod's silence on the subject) is as old as Homer! If it be true, we must cease to sympathize with Professor Daubeny and the other renouncers of Hercules, for the enormous losses occasioned to agriculture by his reckless cleansing of the Augean stable.

The question, whether or not thorough tilage is capable of wholly superseding manure, is one of such vast importance to the whole community—for the rural and urban populations are equally concerned in the production of food—that its satisfactory solution would be one of the most important contributions to the science of our times. Let us see what we can do in placing the matter in a clear light before our readers.

There are two questions, which the Agriculturist who combines in himself the knowledge of the man of science, and the practical farmer can readily answer. They are as follows:—*What is a fertile soil? One which is capable of yielding a long succession of crops without receiving manure in return. Why is such a soil fertile? Because it contains in notable quantities, and in an available condition, all the materials required to build up the vegetable fabric.*

If we then admit what is indeed incontrovertible, that the fertility of soils is dependent on their containing a certain amount of matter, capable of being used as food of plants; and as it is equally true, that a certain portion of this stock of nutriment is annually removed in the shape of crops, the inquiry is narrowed down (to our mind) to the simple question of the amount of food required by the crop, and the quantity of food contained in the soil.

Although it is generally considered that wheat exhausts the land to a greater extent than any other crop, it is a fact that there are but few crops which remove less mineral matter from the soil; this will be evident from the following table:—

CROP.	Pounds of mineral matter removed from a statute acre.	Including Phosphoric Acid.	Including Potash.
Wheat	150	20	33
Potatos	180	72	100
Oats	200	34	42
Hay	400	28	136
Turnips	450	42	130

Now, if we take as an experimental crop that which least exhausts the soil of its mineral matter, and if we compare the amount of nutriment which it annually requires, with the stock on hand, so to speak, in the soil, it becomes a simple matter of calculation how long such a crop can be grown. And this being determined, the import-

the Supply of Plant Food in the Soil Inexhaustible?

"Agriculturists ought to know that a field will indeed lose its productive power when left together unmanured."—COLUMELLA.

There are not a few of the most scientific and practical farmers of the present day who believe in the application of manure to the purpose of

at point arises—during what period of time can the crop be economically raised?

Disregard such substances as lime, magnesia, and silica, which either occur abundantly in soils, or may be inexpensively added thereto, the two substances, the supplies of which in the soil chiefly concern us, are *phosphoric acid* and *potash*. The first of these is rarely found to constitute more than a half per cent. of the so-called fertile soils; in many of them it exists to the extent of but one-fourth of a per cent.; and, in most of the light soils in this country, it forms scarcely two thousandths of their weight.

In a soil containing a quarter per cent. of phosphoric acid (and this we take to be the average proportion of this ingredient in Irish soils, at least,) we have a quantity equal to that contained in nearly three hundred crops of wheat. But are we to assume that wheat crops could be grown in such soils for three hundred years without manure? Assuredly not, and for the following reason. It has been clearly proved that plants must have their nutriment brought into absolute contact with the *spongioles*, or little openings at the extremities of their roots. It has also been shown that the water which percolates through the soil does not perform the office (until lately ascribed to it) of bringing the nutriment of the plants to their roots, but that the latter are obliged to go in quest of their food. From this it is evident that the greater amount of absorbing root-surface possessed by a crop, the less necessary is it to supply the soil in which they grow with manure.

Granting that a field contains a sufficient quantity of phosphoric acid to supply the wants of 300 crops, it is evident that the plants forming the 300th crop must have their rootlets at sometime during the period of their growth, in absolute contact with every particle of the soil. But it requires no argument to prove the utter impossibility of this. Therefore, although a soil might contain a quantity of phosphoric acid more than sufficient to supply the wants of a crop of wheat; yet as the latter is not capable of throwing out a sufficient number of rootlets with which to gather all the phosphoric acid contained in the soil, the crop cannot be brought to maturity, and the soil will be considered *absolutely* barren.

The fact, that the addition to a fertile soil of four or five cwt. of guano or of superphosphate of lime, increases to a very sensible extent the amount of the crop grown upon it, whilst this manurial application to a (*chemically*) barren soil will produce no effect whatever, is a striking proof that the soil must contain a much larger quantity of fertilizing matter than is necessary to make up the mineral portion of one, two, or even twenty crops. This would not be the case if the food of plants were conveyed to them by water which moves through the soil, or were the vegetable mechanisms enabled to place themselves in contact with every particle of the soil.—*Irish Agricultural Review*.

Plaster.

At a meeting of the Farmer's Club, of Chester Co., Pa., a paper was read on the subject of plaster, which we find in the *Germanstown Telegraph*, from which we take the following extract:—

With respect to the sulphate of lime or gypsum, its action appears to be more restricted than that of the carbonate, both as to the number of plants to which it may be advantageously applied, and as to its action on the growth of the plants; that is to say that, while lime seems to increase the size and weight of the seed as well as the herbaceous parts of the plant, plaster adds vigor to the growth only of the leaves and stems; and this is more particularly the case in regard to the cereals. This fact seems to have been satisfactorily established in France. A warm discussion having arisen in the neighborhood of Paris as to the value of plaster as a manure, the government thought proper to refer the question to the Royal Central Agricultural Society. The society selected some forty or fifty farmers, men of more or less education and intelligence, who had been personally occupied in agriculture for twenty years and to each of them they addressed a series of questions. The result of the information thus collected was reported to the society by M. Bose. A few of the questions were as follows:

1st. Does plaster act favorably on artificial meadows? Of forty-three opinions given, forty are in the affirmative, and three in the negative.

2d. Does it act favorably on artificial meadows, the soil of which is very damp? Ten opinions given, unanimously, No.

3d. Will it supply the place of organic manure, or will a barren soil be converted into a fertile one by the use of it? Seven opinions given, unanimously, No.

4th. Does gypsum sensibly increase the crop of the cereals? Of thirty-two opinions given thirty are negative and two affirmative.

Taking the evidence here adduced as reliable and satisfactory, which I am entirely disposed to do, I think we may draw therefrom these inferences: In the first place that the extent to which the action of plaster is beneficial is limited—the grass crops generally being improved by its use, but the grain crops not. Secondly that it is money thrown away to plaster poor land until we have enriched the soil, as the inorganic manure must have an organic one with which to interchange its elements before it can become food for plants. It is a custom more or less prevalent to throw a little plaster on the Indian corn when an inch or two high, and I believe it is supposed by some to increase the crop of grain.

I have very little doubt that plaster promotes the growth of the stalk and increases the amount of fodder; but I am not disposed to think it increases the quality of grain, and my limited experience tends to confirm this belief. I also think it is better to throw the plaster on top of

be corn when it is planted, than to wait till after it is up an inch or two; as by so doing you stimulate and hasten the earliest growth of the young plants. Plaster has not in general been found useful to the root crops, though it has been said to be of service to turnips, and more so to potatoes—the evidence, however, is not satisfactory.

When peas and beans are intended for fodder, have no doubt the haulm would be much enlarged by the use of plaster, but when these legumes are intended for the table, plaster should never be used, as the seeds assimilate this inorganic substance sufficiently to become hard on sowing. The gardener may tell you the season as been unfavorable, but it is the plaster he puts in the bed nevertheless.

Liebig says, "The carbonate of ammonia obtained in rain water is decomposed by gypsum precisely the same manner as in the manufacture of sal ammonia, soluble sulphate of ammonia and carbonate of lime are formed; and this salt of ammonia possessing no volatility, is retained in the soil." Now, it occurs to me that the farmer who occasionally scatters a little plaster over the manure in his barnyard, to hasten, as he says, the decomposition of the straw and cornstalks, (upon which in fact it has no effect whatever, it being well established that plaster has not the least power to promote the decomposition of either animal or vegetable matter,) is nevertheless doing himself an essential service that he does not dream of. For we know that the ammonia generated in the dung-heap, in the form of a carbonate, which is extremely volatile; if, then, by the addition of plaster, the sulphate of ammonia and the carbonate of lime are formed through the interchange of constituents, as stated by Liebig, our farmer has accomplished with the least possible expense and trouble what is considered as of the utmost importance in the treatment of our barn-yard manure, *viz.* to prevent the escape of ammonia.

Potato Disease.

[The *London Gardeners' Chronicle* states the following plan of preventing the potato disease has been printed for private circulation by its discoverer, and has also been sent to that journal for publication:]

The potato disease may be said to have perplexed the wisdom of philosophers, and to have defied the skill of practical men. It has, however, been recently and satisfactorily demonstrated, by microscopical examination, that the malarious which has so seriously affected a very important article of food, is due to the deposition by the atmosphere of a minute Fungus, which, taking its habitation first upon the leaf and the stem of the potato plant, propagates with astonishing rapidity, and ultimately finds its way to the tubers and completely destroys them.

Having at first, without a knowledge of this

theory, tried successfully an experiment which I have since found entirely to accord with it, I am anxious to place my experience before the public, satisfied that if they follow my example they will profit by the result.

Last season, I departed from the old system so far as the greater part of my crop was concerned, and pursued the following plan: I set the potatoes in double rows, instead of single; the two rows occupying about a foot; a foot of vacant space remaining on the outside of each row. They were planted upon the level ground, and hoed up at the usual time.

When the haulm had reached its full growth, about the 1st of July, I turned it over, right and left, towards the vacant spaces, by adding earth between the rows and pressing down the haulms, so as to prevent their retaining an erect position and to allow the rain falling upon them, instead of descending towards the roots, to fall upon the vacant space.

The kind of potatoes upon which I experimented were "Regents" and "Flukes." Of the former, I planted one portion upon the old system. The land consists of a heavy clay—about as bad a description of soil as can be devoted to the growth of a potato crop.

The result was that the "Regents" planted upon the new system turned out to be a good crop, while those upon the old plan were a complete failure, although grown upon the same plot of ground, and planted at one time from the same seed. The "Flukes" produced an excellent crop, not two in a hundred being bad; while my neighbors, for miles round, without exception, lost their crops.

The efficacy of this system has been proved, not alone by my own experience and that of several others who have tried it, but has been confirmed by the following curious circumstances; A gentleman who had planted a lot of potatoes, having a number of planks which he required room for, but not knowing how to dispose of, he allowed them to be thrown down upon a part of the potato bed. Upon removing them sometime afterwards, and digging the potatoes—fully expecting to find that those which had been covered and pressed down were completely destroyed—he found to his surprise, that those which the planks had lain upon were in excellent condition, while those that had been exposed in the ordinary manner were diseased. The laying down of the planks had, in this instance, effected the turning of the haulms, and sheltered the tubers from the wet; and the result was as good as if the system I have recommended had been carried out by design.

The success of my experiment is to be explained in this manner: A microscopic Fungus is first deposited upon the leaves and the haulm, where it multiplies by millions; as soon as rain descends, these parasitical plants are washed downwards to the tubers, which they immediately attack, and the potatoes are thereby destroyed.

By turning down the haulms over the vacant spaces, Fungi are washed by the rain from the plant on to the naked soil, where, wanting nutrition, they perish, and the tubers are protected from their destructive effects.

The result of my experiments being therefore entirely in accordance with the investigations of science, I feel anxious to make the new system of potato-growing known, feeling assured that it will prove a great boon to the community at large.

Agricultural Intelligence.

LINSEED MEAL FOR CALVES.—The *Irish Farmer's Gazette* gives the following directions for feeding oil-cake to calves:—"Linseed meal is highly nutritious, and a useful auxiliary in feeding calves; each calf may get from one-half to one pound per day, according to size and age. The best way to prepare it is—steep a quarter of a pound for each feed in cold water, for 12 hours, then either dilute it with warm water, till of the temperature of new milk, making a gruel equal in bulk to the quantity of milk usually given, or boil it for twenty minutes, and let it stand till lukewarm; in the beginning but a small quantity should be given, mixed with the milk, and by degrees increase it and decrease the milk, till at the end of the month or six weeks, the calf may be fed alone on the linseed and may be allowed some grass, and finely cut roots.

WHEAT IN LOWER CANADA.—The following statement respecting wheat raised on Mr. Logan's farm, near Montreal, will show what Lower Canada can do; "Yield of Fife wheat from $9\frac{1}{2}$ arpents of land, in 1860, (after green crops, Corn, Potatoes, Horse Beans, and Mangolds) 230 minots of prime seed wheat, weighing $66\frac{1}{2}$ lbs per minot; 22 minots of tailings, weighing 61 lbs per minot, being at the rate of 35 39-60 per arpent, or 42 9-60 per acre. The seed was sown on the 4th of April, before the frost was out of the ground, though sufficiently so to admit of harrowing in. The crop was cut by machine on the 2nd and 3rd August, and all housed on the 7th. The yield of straw was heavy, clear and bright. The ground was only partially drained. There are 4,089 yards in an arpent, and 4,840 yards in an acre.—*Pilot*.

THE ALPACA.—Recent endeavors have been made to introduce the Alpaca into Australia. The Alpaca is a native of Peru, somewhat smaller than the lama, but has wool remarkably soft and beautiful. Marketable fabrics were first produced from it in England in 1830. Since then the quantity imported has increased up to 2,500,000 in 1860. Large numbers have been introduced into Australia, which have thrived well, increased largely in numbers, the grass be-

ing found well suited for its food. The prospects of a perfect success of the experiment are very great,—a matter of considerable importance to the commerce of the country.

The following table shows the number of plants to the acre, at any of the distances mentioned:

Distances Apart.	No. of Plants.
1 foot.....	43,560
1½ ".....	19,360
2 ".....	10,890
2½ ".....	6,969
3 ".....	4,840
4 ".....	2,722
5 ".....	1,742
6 ".....	1,210
9 ".....	537
12 ".....	362
15 ".....	193
18 ".....	134

CANADIAN STANDARD WEIGHT IN A BUSHEL OF GRAIN, SEEDS, AND VEGETABLES.—

Grain.

Vegetables.

Potatoes, Parsnips.....	60 lbs.
Carrots, Turnips.....	60 lbs.
Beets and Onions.....	60 lbs.
Salt.....	56 lbs.
Castor Beans.....	40 lbs.
Malt.....	36 lbs.
Dried Peaches.....	33 lbs.
Dried Apples.....	22 lbs.
Wheat.....	60 lbs.
Peas.....	60 lbs.
Beans.....	60 lbs.
Indian Corn.....	56 lbs.
Rye.....	56 lbs.
Barley.....	48 lbs.
Buckwheat.....	48 lbs.
Oats.....	34 lbs.

Seeds.

Clover Seed.....	60 lbs.
Flax Seed.....	50 lbs.
Timothy Seed.....	48 lbs.
Hemp Seed.....	44 lbs.
Blue Grass Seed.....	14 lbs.
Red Top Grass.....	8 lbs.
Hungarian Grass.....	48 lbs.
Millet.....	48

Cure for Lice on Cattle.

To one pail full of boiling hot water add a pint of flax seed, keep it simmering two or three hours, it will form a sort of jelly. Give a yearling one quart twice a day mixed in bran & provender. In a few days there are no lice to be found, the animal is in a more healthy condition, and the dry feverish skin is replaced by soft and oily one.—*Cor. Michigan Farmer*.

Horticultural.

The Garden.

This is the season for transplanting evergreens, and although the season is late, the sooner such operations are completed the better. Planting deciduous trees, if not already done, had better be deferred till the fall. Too much care cannot be exercised in preparing ground for planting, and in finishing the operation in a neat and workmanlike manner. The ground should be deeply dug in the fall—if trenched two feet deep all the better—and the planting should be proceeded in as soon as the soil is dry and the weather warm. By carefully attending to such matters trees will not only live, but generally will thrive and grow with a rapidity truly astonishing, as compared with the disasters and slow progress of others less liberally and skilfully treated. The habits of trees should be studied in adapting them to soils, exposure, &c. Among evergreens, as a general rule, pines will flourish in a dry, sandy soil; the spruce requires a medium condition in relation to moisture, while the family of firs will luxuriate in somewhat sheltered and damp situations. In dry weather, especially when trees are several days out of the ground before planted, it is an excellent practice to pudde the roots, which can readily be done by plunging them into a mixture of cowdung and water, a portion of which will adhere to them, and keep them moist. Avoid planting too deep, and throw in some fine soil to fill up the interstices between the roots, tread the soil firmly, especially in dry weather. Mulching newly planted trees acts beneficially as a protection against the drought of summer, and the frosts of winter. These suggestions are of general application; but in case of choice fruit trees and flowering shrubs, they are of indispensable necessity. It is for want of proper attention that many failures in planting have to be annually deplored.

Roses intended for removal, which in the ever coming kinds, as Tea, China, Bourbon, &c., is occasionally advisable, should now be moved without delay, and pruned back considerably. This is the season for selecting bedding-plants; and those of a dwarf and stocky appearance are to be

preferred and that have been somewhat hardened by occasional out of door exposure, when admissible. Box may now be planted, and the edging carefully cut, which gives it a pleasing appearance. Florist's flowers should be attended to as forming a source of beauty and enjoyment. Auriculas, carnations, pansies, polyanthus, phlox, &c., are easily cultivated, and impart much beauty to the garden. Gladiolus are getting popular, and may now be set out.

Not a day should be lost in getting in the principal crops of the garden; some of the earlier crops were sown last month. It is not, however, too late, in this backward season, to catch up work that has been neglected. In this climate the most productive garden crops are not frequently put in the ground before the beginning of May. Much, however depends, as we have observed in previous numbers, not on the particular time of sowing alone, but also on the suitable condition of the ground, and the temperature of the atmosphere.

Floriculture in Spring.

[The following paper was recently read before a meeting of the Hamilton Horticultural Club, by Mr. George Laing, Landscape Gardener, of that city.]

The Winter has passed away—John Frost, the fell destroying enemy of the Florist, is about to take his departure for a season. Spring time and Summer are at hand—gardeners and amateurs must arouse from their lethargy and be up and doing. Clean, dress, and roll the grass in the parterres. Soil and dig the flower beds—make all ready for the bedding season.

In writing on this subject I shall endeavour very briefly to state whatever may occur to my mind, confining myself principally to the varieties cultivated in this locality, and, as I proceed, introduce anything new I may think of, with a few remarks on the nature, habits, and culture of the plants.

If not already done, (say 1st April,) sow tender annuals in a hot bed or in pots or boxes, that can be placed in a vinery or any other suitable place under glass. Increase the plant stock by propagation—procure from the nurseries all the new Verbenas, Scarlet Geraniums, Heliotropes, Petunias, Carnations, Pinks, Hollyhocks and Dahlias, &c., all which are now very plentiful and so cheap that no one who has the desire need want them. Study to have all in readiness and good order by the time they are

wanted for planting. Consider well in arranging the beds, the nature and habits of the plants, colour of flower, time and duration of flowering, aspects, light and shade, so as to secure a pleasing effect and expression of purpose. The verbena, for a number of years has attracted the attention of florists in this country and in Europe, and has been brought to great perfection; its fine branching habits and adhesive tendency to the ground, combined with its hardness and numerous diversified colours, entitle it to a high station in the first order of bedding plants.

The verbena family is numerous and highly titled, but to approach its many noble names at present would be tedious; I shall therefore content myself by noting a few only:

Domvilliana—rich blush purple, large white eye; superb.

Miss Breeze—fine violet purple or crimson, with yellow eye.

Cynthia—bright vermilion, crimson shade, with large eye.

Etonia—rich indigo purple, large white eye, profuse bloomer.

Lady Seymour—deep rose purple, large white eye.

Lady Palmerston—fine blue, large white eye.

Agnes—violet purple.

Brilliant DeVaise—fine crimson scarlet, excellent bedder.

Celestial—rosy pink, immense truss.

Charles Dickens—rosy lilac.

Geant des Batailles—deep rich shaded crimson, one of the best.

General Simpson—large crimson, fine.

Imperatrice Elizabeth—violet rose, striped with white foliage.

Souvenir—rosy lilac, lemon eye, large truss.

Eastern Beauty—rich deep salmon rose, large lemon eye, fine.

Sir Joseph Paxton—light rosy red, large lemon eye.

King of Sardinia—fine scarlet.

Magnificent—fine large purple.

Madame Abbot—fine maroon.

Madame Lamouier—Satin rose, with clear white stripes.

Mrs. Woodruff—one of the finest scarlets in cultivation.

Mrs. Holford—white fine large portals.

Phenomena—deep crimson scarlet.

Tranby—rosy purple.

The verbena is a very strong feeder, and requires a rich, free, soil; it is worthy of remark that on such a soil the flowers and truss are full and perfect,—whereas on tenacious soils, they are in general irregular and very imperfect.

Heliotropiums are much favoured as bedding plants; their fragrance alone is a great inducement to their cultivation; many of the varieties are highly worthy of attention; such as Rine des Heliotrope, Souvenir de Siege, Beauty of the Boudoir, and Louis Faircliff—they like a free rich soil.

Petunias are much of the same habit as the former, and require much about the same treatment. There are some very fine new double varieties of this plant, two I observed in Hoadale nursery last year, Madame Miellers and Double White and Van Houtte purple, they are very beautiful, and have a very rich fragrance, the many colours in the numerous single varieties is very worthy of attention.

Scarlet Geraniums, or those of that class, are many; much has been done of late years in hybridization; numerous excellent varieties are now produced, beautiful in flower and foliage. The brilliancy of these flowers and continuous flowering habits during the summer and autumn months render them highly worthy of cultivation. They are free growers, and like a rich sandy soil.

Pot Roses, as bedding plants, seem not to have as yet commanded attention here; this I think is to be regretted. What can be more beautiful than a bed of roses. The most suitable varieties for this purpose are the Chinese, Noisettes, Leas, and Hybrid Perpetuals. Have the convexity of the bed formed according to its size, plunge the strongest growing kinds in the centre and the lesser gradually outwards to the edge; the varieties to be well mixed; the pot plunged at least one inch over the rim; as they grow keep intermixing them, and pressing them down; in this manner they form a beautiful mat that is very much to be admired.

Carnations and Pinks.—The Carnation is now considered a very good bedding plant, it is more better adapted for border and pot culture, but cannot, in justice, pass it by without noticing as highly worthy of more general attention. I can well recollect, that about twenty or twenty five years ago the Auricula, Polyanthus, and Carnation attracted the attention of gardeners and florists equally as much as the Prima Donna of the present day; I am glad to observe that they are again becoming more noticed. But return to the Carnation as a border and pot plant,—prepare a compost of two-thirds good loam, one-third old hot-bed manure, with a good mixture of sharp sand, add a very little of newly slacked lime, get all well incorporated six months previous to use, lay say twelve inches of this compost on a well-sheltered and drained border, plant 18 inches or two feet apart, either singly or in patches of three plants. For pot culture let the layers of last year be potted into full sized pots, say of eight or nine inches diameter, in which they are to perfect the flowers, have the pots well drained, watch and destroy all the grubs, worms, and slugs, attend to watering and sticking in both ways, and will progress favourably and flower abundantly.

Dahlias. If not down for propagation a time should be lost in placing them in the front or back of a melon or cucumber frame, or a bed prepared for the purpose. As the shoots advance to two or three inches take them off.

t them into small pots in a mixture of loose soil and sand. Give the pots a good watering, and insert the cutting, just as far as will enable them to stand, then plunge them into a frame with a good sharp bottom heat; shade the frame and keep it close shut up, unless to inspect the plants; attend to watering, but be careful not to water over the leaves; in the course of twelve or fourteen days they will be sufficiently rooted as to be shifted into larger pots in which they may remain until hardened, and planted out, at the end of May or the beginning of June. To secure success have the bed or border well prepared, and in a place to embrace the morning and afternoon sun, and to be shaded in mid day. Any of the best Dahlia growers in England and Scotland prepare their borders in the fall, by manure very strongly with cow dung or rich soil; they ridge up the border to the depth of twenty inches or two feet, in which state it remains during the winter; in spring, before planting, it is levelled down, and a good layer of rich loamy soil is laid on and all well dug up and planted, then staked and attended to. It has been affirmed that night-soil is preferable to other manure for the Dahlia; it is considerably more exhilarating for growth, and has the property of producing clear fine colours in the colours.

Shrubby Calceolarias are very good bedding plants, either by themselves or grouped amongst others, but they seem not to be much favoured such in this quarter. If shaded from the strong mid-day sun, there is no doubt of their growing well, and forming a very beautiful bed. The Queen, Kentish Hero, Kagii, Minnie, Sultan, and Wellington Hero, are all very valuable varieties.

Lantanas.—Many of the varieties of this beautiful plant are excellent bedders, such as Alba, Fulgens, Delicata, Delatissima, and Ecclatant; they may be planted out or plunged. If the latter way, it will be found an advantage to puncture a few holes in the side of the pots, and care not to break them. This method is very commendable for all pot plunged plants, if the puncturing be carefully done, the pot is not destroyed.

A good collection of Hollyhocks should always be at command; they are very suitable for the borders and clumps, &c.

Tritonias, Gladioluses, and Liliams form good beds, as also Astrocerarias, Mimulas, and Helias, Dianthus Heddewegii, D. Laciniatus, Chiensis Nana, D. Heddewegii Imperialis, Fox Drummondii, Balsams, Stocks, Asters, Cothera Rosea, Zinnia Elegans, Gazania Leadens, Tom Thumb, Nasturtium Feverfew, White, Pansies, Ageratum Mexicanum, Phlox Placyntra, and many others that I might name, all suitable for bedding purposes.

Nothing can be more pleasing to look upon than a well-arranged Parterre or Flower Garden. It is both-pleasing to the eye and instructive to

the mind. The ideas conveyed are of the noblest kind. The effect depends upon the arrangement, and the arrangement on the judgment of the gardener; therefore it is highly necessary that he consider the matter well before he begins.

Grouped planting of all kinds, when judiciously carried out, is very ornamental, particularly so in flower-beds. As a completion of these ideas, I notice the following varieties as suited for four beds, but in all cases it is to be supposed that the operator may or should suit his own taste as to plants and mixture of colors.

BED 1st.—Glandiolus Gandavenses—green; Lotus Negracanas—blue; Geranium—scarlet; Lantana Wingii—pink; Phlox Drummondii—white; Dianthus Heddewegii—cream; Verbena, Mrs. Woodruff—scarlet.

BED 2nd.—Canna Indica—blue scarlet; Heliotropium Clara—blue; Feverfew double white—white; Tom Thumb Geranium—green; Ageratum Mexicanum—blue; Tom Thumb Nasturtium—yellow; Verbena Imperatrice Eb—rose.

BED 3rd.—Dielytra Spectabilis—rose; Lantana Albanana—white; Lotus lutens—yellow; Petunia Houttii—pink; Tom Thumb Geranium—green; Nurimbargii Gracilis—pink; Verbena Tranby—rose.

BED 4th.—Tritonia Maria—yellow; Balsam—blue; Feverfew Do. white—white; Cacalia, Coccinea—scarlet; Phlox Drummondii—purple; Tom Thumb Nasturtium—yellow; Lobelia rosea—rose.

And now in conclusion, a few hints towards ourselves, as members of a Horticultural club, may not I trust be out of place. Old and young, all must read, think, write, work and be diligent; we have all much to learn. We have weekly in this club two very excellent periodicals, let us peruse them, the *Gardeners' Monthly*, the *Horticulturist*, and the *Agriculturist*, a Canadian publication, which we ought as a club to patronise, and there are many others of the kind which give the hints and information we need. We cannot, we must not stand still; we are beings possessed with the ordinary gifts of nature, and let us exercise them and improve so as to be useful to ourselves and in the world in which we live.

Veterinary.

HOG'S LARD FOR HORSES.—Horses that have accidentally eaten largely of wheat, sometimes die from inflammation of the intestines. It is recommended by a correspondent of the *Mark Lane Express*, that as soon as possible after the discovery of the accident, the animal be given from three quarters to one pound of lard; which being cut into pieces of the ordinary size of a horseball and wrapped in paper, is easily administered. This is said to be more efficacious in such cases than castor oil, which is usually

prescribed by veterinaries. In small quantities lard is an excellent laxative for horses; and to those which reject mashes preparatory to physic, or in the event of an accident requiring an immediate dose of physic: also in preference to giving strong doses of aloes to horses whose systems are with difficulty affected by purgatives, by giving from a quarter to half a pound of lard two or three hours before a physic ball, the results will be attended with success.

CURE FOR GLANDERS.—Spencer R. Paneck, in the *Cotton Planter*, gives the following account of the way in which he cured the glanders. He says:—"My horse was a valuable one, and had had the glanders some twelve or eighteen months, and so badly did he have it that I offered to sell him for 15 dollars. He could be heard to breathe from fifty to one hundred yards every breath; indeed we could not sleep so distressing was his breathing, the stable being close by. I determined to kill or cure—so for experiment: on Monday I gave him as much dry calomel as would lie on a ten cent piece; on Wednesday I did the same; on Friday I gave it him again; on Saturday he could not bite a pumpkin; on Sabbath morning I looked in his trough and found at least one quart of old matter scales, with a mixture of matter all in a lump. From that time he breathed easy, and never was troubled again with glanders—it was a perfect cure. I worked him in my buggy for two years after, and traded him as a sound horse to a neighbor, who was familiar with his disease all the time he had it. He was slightly salivated, was as good after as before. A neighbor tried the remedy with equal success."

Transactions.

Abstract of Report of Agricultural Societies received in the year 1860.

(Continued from page 253.)

TOWNSHIP BRANCHES (WEST MIDDLESEX.)

ADELAIDE.—Fifty-nine members; amount of subscriptions, \$63.50; balance from previous year, \$9.05; share of public grant, \$45.08; total received \$117.63. Amount paid in premiums, \$2.50; "Agriculturist," \$6.00; expenses, \$17.62; balance in Treasurer's hands, \$1.51.—The Directors give some interesting information and statistics in their report but being to a considerable extent a repetition of that contained in the report of the County Society it is not here inserted.

DELAWARE.—Fifty seven members; amount of subscriptions, \$72.54; balance from previous year, \$17.55; public grant, \$40.09;

total received, \$130.18. Paid in premium \$93.25; expenses, \$15.13; balance in Treasurer's hands, \$21.80.

Extracts from Report.

The grain crops in the Township of Delaware, with the exception of the fall wheat, which very little was sown, and that little almost completely destroyed by the late frost in June, were of an average quantity. The bar crop was very heavy on the River flats but was much under the average in other parts of the township; the root crops were much above the average. Flax was grown to small extent in the township, and from accounts answered admirably, - from the hopes held out of securing a ready market for any amount of the article, we should strongly advise the cultivation of it to a great extent next season, particularly as growing wheat in any great quantity has proved within the last few years a very precarious undertaking on account of the ravages committed by the wheat midge.

Although the good work of improved tillage is progressing so rapidly in the township we nevertheless beg to offer a few remarks on a subject which should be the *ne plus ultra* of every agriculturist, we have reference to the thorough drainage of the soil; it is doubtless the very foundation of profitable farming in any country, and particularly in this, from the severity of the winter the farmer prevented doing anything in the way of tillage until very late in the spring, and is then called on to plow, harrow, and sow, at a moment's notice as it were, and in such a hurried manner that thousands of acres are sown in a state totally unfit for the reception of the seed, the soil being so thoroughly soaked by the heavy rains in the spring, and delaying operations until the land shall be in a fit state to be altogether out of the question, on account of the great amount of work to be done in a short time. Now it must be evident that were the land thoroughly drained, either by under or open drains, it would be in proper state of cultivation immediately on the breaking up of the winter, and the continual filtering through of the surface water to the drains below opens, as it were, the pores of the soil, and renders it much easier to till, consequently a great saving of labor and expense is effected. Although the subject is almost inexhaustible in detail, cannot at present enter more deeply into

think we have given sufficient reasons why land should be thoroughly drained, and we can speak from practical experience of soil and permanent under-drains being made to poles, the materials are therefore within reach and means of every farmer, and we do not mean why it cannot be done. If we look for evidence as to the great increase in quantity and quality, of all descriptions of crops, obtained by the thorough carrying out of the system, we have merely to look to Great Britain. If we take Scotland alone, (the very bed of good farming,) we have accurate information of some very large tracts of land, which previous to being thoroughly under-drained scarcely produced from 10 to 12 bushels of wheat to the acre, and now from the operation of the system produce from 40 to 50.

LOBO.—Fifty nine members; subscriptions \$5; balance from previous year, \$5.11; share grant, \$40.09; sundries, \$6.50; total received, \$106.70. Paid in premiums \$61.35; expenses and sundries, \$45.07; balance 28c.

METCALFE.—One hundred and seven members; amount of subscriptions, \$138.75; balance from 1858, \$32.30; public grant \$98.48; received on account of stock, &c, \$26; total received, \$295.53. Paid for purchase and maintenance of bulls and other stock \$233; expenses, \$17; balance in hand, \$45.53.

Directors say: "It is with pleasure we see the great improvement in cattle and farm stock since the formation of the Society, and also the great increase of the culture of root crops, especially turnips, some farmers cultivating ten or fifteen acres, and using them very profitable for fattening and other purposes."

MUSA.—Fifty-seven members; amount of subscriptions, \$82.93. Paid in premiums, \$65.75; amount imperfect.

WILLIAMS.—Amount of subscriptions, \$60; balance from previous year, \$13.87; government grant, \$30.02; total received, \$103.89. Paid in premiums, \$81.40; expenses \$17; balance in hand, 32c.

NORFOLK.

COUNTY SOCIETY.—One hundred and fifty members; amount of subscriptions, \$152; balance from previous year, \$246.84; deducted by townships branches, \$306; government grant, \$599.96; entrance fees, &c., at \$128.85; total receipts, \$1431.65. Townships Branches, \$459; paid in premiums \$413.50; expenses, \$184.23, balance in treasurer's hands, \$426.87.

Extracts from Report.

An increased interest in agricultural pursuits appears manifest, and a gradual advancement is apparent; in proof of which you are cited to the well tilled fields, the luxuriant crop of grass, cereals and vegetables, and to the beautiful and well-fed animals, which have superseded the formerly careless and partial cultivation of the soil, and the ill-shapen and worse fed farm stock.

There is, without doubt, a wide spread spirit of emulation among the agricultural and mechanical population of the County, which exhibits itself at our annual fairs. The greatly increased number of entries, together with the excellence of the animals and articles exhibited on these occasions, affords conclusive evidence that the farmers of this county are not only striving to excel each other, but that they are also determined not to be beaten by the Agriculturists of other Counties in this our noble Province.

The variety and productiveness of our soils—the numerous large creeks and streamlets—the abundance and variety of timber in our forests—having Lake Erie for a natural outlet for our products,—these, with numerous other advantages, fostered by the enterprise of its inhabitants, argue a successful and glorious future for "Glorious old Norfolk."

Having made these general observations, your committee will proceed to such particulars as may prove interesting and profitable to the farming and mechanical community generally.

First,—As to the character of the soil: In the eastern portions of the Townships of Townsend and Woodhouse, the soil is generally clay or loam, varying in its components, and resting upon a lime stone stratum of various degrees of depth from the surface, and jutting out at the banks, and forming the bottoms of most of the creeks. This soil is well adapted to grazing, as well as to the production of wheat, oats, barley and peas. It is, however, more subject to rust and to the ravages of the midge than soils of a lighter nature. Roots and vegetables succeed well, with the drawback of occasional rot to the potato crop. The timber on this soil is principally Maple, Beech, Ash, Elm and Basswood, with large White Pine and White Oak interspersed. The western portions of these townships have a more silicious soil, varying also in its components. In some parts the subsoil is clay, in others a

grey sand. On the whole it is a productive soil, adapted to the growth of Wheat, Indian Corn, Oats and Buckwheat; and with proper management produces the finest and most healthy roots and vegetables. The timber is mainly white and black Oak, with chestnut and occasional clumps of hard wood and dwarf pine. The soil in the south eastern portion of the township of Windham is of a loamy nature, producing abundant crops of all grains, roots, and vegetables, generally cultivated. The soil in the north eastern portion is a gravelly loam inclining to sand—the same may be said of the south western part. These soils are not much affected by an excess of either wet or dry weather; neither do they heave with the frosts of winter, consequently they universally produce fair average crops of the very best sample. The north western portion possesses a clay soil, some seasons producing abundant crops, at others these are materially affected by the frosts of winter and the droughts of summer. The interior of this township is covered with forests of pine, with large cedar and tamarac swamps.

The Township of Charlottville has generally a light sandy soil, although there are many farms of most desirable fertility. Owing to the diversified nature of the soil, the crops are various—some farms producing the largest crops of Wheat and Clover, others producing the finest crops of Indian Corn, and Buckwheat; while all produce Oats, Barley, Peas, Potatoes and Turnips in abundance. There is almost every variety of timber indigeneous to such soils.

The Township of Walsingham is noted for her lumbering capabilities. A large portion of this township was once covered with the finest quality of White Pine, which is fast being converted into timber and lumber for the American market. But few years will suffice to sweep away these mighty and beautiful forests, and leave nothing but unsightly stumps and refuse timber. That portion of this township bordering on the Long Point Bay, and Lake Erie, is possessed of a soil varying from a black vegetable mould of a loose friable nature, to clay of the most tenacious quality. The crops of Barley, Oats, Peas and Wheat are of the most luxuriant kind. The pasturage is abundant, Timothy and clover luxuriate here, and grow to the hearts content of the most avaricious of our species.

The Township of Houghton is a beautiful gorge of land, the base of which lies along Lake Erie. The soil is rich and productive, much like that of Walsingham of which we have been speaking—producing the same variety of crops, in the same abundance. The timber is Maple, Beech, Ash and Elm, with a large supply of Pine and some Walnut.

Middleton is considered rather unproductive, owing to the light sandy nature of the soil; although there are some of the best farms and the best farmers in this township, of any in the county. Pine is the prevailing timber—consequently a great deal of lumbering is carried on here.

As to the average productiveness of the soils your directors are of the opinion, that aside from extraordinary seasons of sterility the average of wheat per acre is 20 bushels of Barley and Oats 30 bushels, of Indian Corn 50 bushels, of Peas 30 bushels, of Buckwheat 25 bushels, of potatoes 150 bushels, of Potatoes 300 bushels, of Corn 400 bushels, Timothy Hay $1\frac{1}{2}$ tons, Clover Hay $1\frac{1}{2}$ tons, Millet is cultivated to some little extent, and succeeds well in our warm soils, producing from 2 to 3 tons per acre of the most palatable and nutritious fodder, and from 20 to 30 bushels of seed.

The wide spread calamity of June last fell heavily upon this county. Our wheat crop, the staple production of our locality, from presenting the most promising appearance, witnessed in many years, was stricken down by the frosts; and instead of maturing and producing an abundant harvest, remained blackened and sared monument of disappointed hopes. Never within the recollection of man was the devastation so fatal, so universal.

Indian Corn was also cut down, and never recovered. Much was replanted; but owing to the coldness of the Summer and Autumn very little came to maturity. Many farms sowed their corn ground to turkeys; and the consequence was that we never had such an abundant root crop before; and which is now supplying to a great extent the falling off of other crops. Peas, Oats and barley were injured, and yielded abundantly. Timothy meadows suffered much, and did not recover. Clover meadows, however, revived after the frosts and produced an average crop. On the whole, we find ourselves in much better circumstances than our fears would allow us

icipate; and no doubt this calamity will make us wiser, and more provident for the future, and induce us to cultivate a greater variety of farm crops, instead of depending simply on the wheat crop.

In regard to the improvement of stock, your Board is compelled to state that the improvement is not so universal as they would like to see, or as to compare favourably with the other Counties; although there are some excellent specimens of improved breeds of cattle, sheep, and hogs, owned by a few enterprising farmers, who are not only benefitted themselves by these fine animals, but their neighbours also are greatly benefitted thereby. The preference given to the most improved and best bred animals is quite diversified—some preferring the large and beautifully developed animals, while others fancy the smaller and more compact Devons. The Ayrshires, as milkers, deserve much praise, while others contend that the natives are the cattle for the country for excellence, and surpass all other breeds in weight, if not in appearance. The more generally received opinion is that the crosses of the best blooded animals with the natives produce the most valuable animals for the mass of farmers and graziers. On the whole it is really desirable to see many more of those fine, beautiful and useful improved breeds introduced into this country. The Leicesters are the most approved, as well as the most numerous breed of sheep reared with us. The object of rearing the fine woolled sheep is gaining to engage the attention of some of our breeders; and there is no doubt that, from the nature of soils and pasturage, these animals may be made profitable. As to mutton sheep, the South Downs stand unrivalled, and the Cotswold, though but recently introduced, are many advocates.

The experiments which have been made in feeding and feeding animals, which have been within the knowledge of your Board, are but few; these few, however, go to support the generally received opinion of the best feeders and feeders, that the most profitable way to rear farm stock is by judicious and judicious feeding, to induce a constant growth and healthy development of the animal in all its parts. The most economical system of feeding, is to cut all the hay, straw, and corns which are fed, and mix therewith a small quantity of some kind of chopped grain. In the West of England, Indian corn mixed with hay, with an

occasional seed of roots when the weather is not too severe, is found to be the best food for fattening horned cattle. Barley, oats or buckwheat may supply the place of corn in the mixture.

For fattening sheep, the pea crop, where it can be raised in abundance, seems to be the most desirable; and the most profitable manner of feeding is without threshing, as the straw and peas fed together conduce more to the health of the animal than clean peas. Indian corn and oats ground, and fed to fattening sheep, are very nutritious, and prepare them for market in a very short time. Cooked food, whether it be grain, roots, or vegetables, is allowed to be the best and most economical for fattening hogs.

The subject of drainage has not engaged the attention of agriculturists here; as owing to the undulating surface of our land, and the porous nature of the subsoils, drainage would not be so beneficial as in other places: nevertheless, your Board are of opinion that many of our farms might be rendered much more productive by adopting a thorough system of drainage.

Your Board have much pleasure in referring to the great and useful improvements which have been made in agricultural implements. The manner of harvesting our grain and hay crops was altogether the most laborious part of farm labor. That severe labor is now mostly superseded by Reapers and Mowers; thereby greatly facilitating the labor, and securing the crop with less waste and liability to damage from bad weather. Great improvements have been made in that most useful implement, the plough. Different varieties of pattern, adapted to the different requirements of the soils, are now manufactured, of good material, and possessing all the advantages of mechanical skill. Cultivators, and the most approved harrows are also made here, and are in general use by our farmers. Seed drills of various sizes, and for various purposes are made by our mechanics, and are in very general use: in short, our farmers seem inclined to avail themselves of the advantages of all the useful labor-saving machines within their reach.

The cultivation of fruit trees is very general, and up to the winter of 1856 was prosperous and successful; but during that winter the more tender varieties, as the peach, plum, and finer sorts of cherries were all destroyed.

Apples and pears were greatly damaged; and from that time to the present, there has been a constant decay and falling off; so that we may safely assert that in number there is from one third to one half less than formerly, with a still decaying tendency; and the probability is, that our entire orchards will have to be renewed by young and healthy trees. This country is well adapted to the growth of fruit, especially along Lake Erie and the Long Point Bay. The fruit crop was abundant and of excellent quality for many years previous to the time of which we have spoken; since then there has been a great failure both in quantity and quality.

Your Board would suggest some improvement in the management and development of the capabilities of our soils; and these suggestions will be drawn from the experience of men of science and practice. It is a fact which needs only to be mentioned, that the different nature of soils require different treatment, in order to make them productive. Soils which are loose and friable freely admit the influence of heat and air, and only require fertilizers, with a moderate degree of tillage to bring out their capabilities; while soils of a more tenacious nature require a very great degree of tillage in order to loosen and pulverize them, and render them susceptible of absorbing warmth and moisture. Soils of a sandy nature require constant renovation, else the vegetable ingredients which they contain are soon absorbed, and the soil becomes sterile and unproductive. All soils require food in order to restore their exhausted energies, after having produced crops; and here the knowledge and skill of the farmer will exhibit itself. From the fact that soils require food suited to their natures, the farmer must know something of the nature of the soils in order to know what kind of nourishment they require, to supply the particular ingredients needed; and after all it will be found that a judicious rotation of crops is the only way to develop their resources. With us the clover crop is the farmer's sheet anchor, as a renovator. It is also the cheapest and most efficient manure to any great extent within our reach. In addition to this it is our interest to make all the manure we can from our yards and stable. It is a fact patent to all, that in this respect we are shamefully negligent. We allow the liquid and solid excrements of our animals to go to waste, instead of preserving and applying them to our fields. We have

trusted too long to the strength and fertility of our virgin soils. The effects of this negligence are every day becoming more apparent; and unless there is a speedy reformation, barrenness and blasted hopes will be written on our once fertile fields, and it will take many years of labor, attended with immense expense, to restore them to their wonted fertility. Your Board dwell more earnestly upon this part of their report, because they can not feel indifferent to the fact that unless we once commence a thorough system of manuring there will be a constant depreciation of our crops until we shall not be able to supply the demands upon our productions; and consequent destitution and suffering must follow.

We fear that our brother farmers do not as they should avail themselves of the necessary and desirable information in regard to what has been said in the foregoing report, and of matters and things in which they are vitally interested; therefore we would cordially and respectfully request, that as you desire to be successful in your occupation, and to de-ire to make your sons and your daughters useful members of society, that you should gain all the knowledge you possibly can pertaining to the profession in which you are engaged. Agricultural books and periodicals are abundant and excellent, and aside from your general information, it is as important to your success as a Farmer that you read the books and periodicals, as it is to the success of the Physician that he reads books and periodicals on medicine, surgery, &c., or to the Lawyer that he studies books relating to particular profession. It is also our duty to make our buildings as comfortable and convenient as possible, and to make their surroundings beautiful and attractive; remember that a rustic arbor, a clump of evergreens, trailing honeysuckle, or arbor vita, a border of roses or violets will produce the most beneficial influence on the minds of our children. will lead them to see and admire their Creator in the loveliness of His works. Home influences have more to do in forming the character of our children, than all other influences combined. If their minds are properly imbued with a knowledge of their social duties and moral obligations while under the parental roof, you may safely commit them to the vicissitudes of life; although they may sometime seem wayward, yet be assured that hallowed influences of Christian homes never be effaced from their memory,

admonitions of a dear mother, and the affectionate regards of a sweet sister, will be aids of protection in times of temptation and danger.

Your Board are very sensibly impressed by the fact that many of our sons are leaving their honored profession of Agriculture to seek employment elsewhere, under the impression that aught but toil and obscurity attend the farmer's life. Now we fear that the cause of this may be attributed to a want of talent and skill in our farm operations—too much drudgery and not enough intellectual enjoyment—unsightly buildings instead of neat and comfortable ones having an air of beauty around them—half starved cattle, and half starved horses, instead of sleek and beautiful animals, well tilled and productive fields—old fences and broken down gates, with the pigs in the potatoes, the horses in the meadow, and the cows in the wheatfield, with the oft repeated cry of "run, boys, run!"—is it a wonder that they do run away from such scenes, to seek a place where order and harmony reign?

TOWNSHIP BRANCHES.

HARLOTTVILLE.—Amount of subscriptions, \$42; balance from previous year, \$40.00; public grant, \$29; received from Woolly Society in aid of joint exhibition, \$85; fines, \$16.34; total receipts, \$573.00. Paid in premiums, \$290.75; expenses, \$3.40; balance in Treasurer's hands, \$278.85.

TOWNSEND.—One hundred members; amount of subscriptions received, \$65; balance from previous year, \$20.44; public grant, \$50; total received, \$135.44. Paid in premiums, \$121.25; expenses, &c., \$35.95; balance due Treasurer, \$21.26.

WALSINGHAM.—Forty-one members; subscriptions, \$43; share of public grant, \$22; received, \$65. Paid in premiums, \$75; balance in Treasurer's hands, \$21.66.

Extracts from Report.

The directors take great pleasure in reporting the healthy progress of agriculture in this township. They have come to the conclusion that for societies to hold stock is a bad plan and is not found to be remunerative, and in a very short time it costs the price of the animals to keep them, and gives much dissatisfaction to invest all the means for fencing and plowing matches, thus by giving prizes in lucrating persons to produce good and improved implements.

We also think our present system of giving premiums to small lots of grain and vegetables is not so encouraging to agriculture as would be the case if prizes were awarded to the weight or measure of a certain area of land i.e., have the growing crops inspected. As a bushel of vegetables may take a prize, while the lot they were selected from would be very poor, and so with grains. Under this system farmers are not induced to compete for prizes when they plant or sow, which is far the most important time, but under a better system they would be induced to get the best seed and prepare the land properly.

The prevailing character of the soil in this Township is clay. The average of wheat per acre this year is low, being damaged by frost and weevil. Cleared lands are valued at about \$30 per acre.

There has been a great increase in the production of roots, the result of which supplies our markets much more plentifully with fresh butter during the winter.

WINDHAM.—Forty-five members; subscriptions, \$45; balance from 1858, \$17; grant, \$22.50; total, \$84.50. Paid in premiums, \$80; incidental expenses, \$4.50.

WOODHOUSE.—Eighty-one members; amount of subscriptions received, \$63; balance from previous year, \$230.18; public grant, \$31.50; total received, \$324.68. Paid in premiums, \$215; expenses, \$16.20; balance in hand, \$103.48.

EAST NORTHUMBELAND.

COUNTY SOCIETY.—Eighty six members; subscriptions, \$86; balance from previous year, \$73.68; deposited by Township Branches, \$247; government grant, \$479.98; received from sale of sheep, \$136.25; sundries \$8.84; total received, \$1036.75. Paid for copies of *Agriculturist* \$14.50; paid Township Branches, \$535.52; Paid for purchase of sheep and pigs of improved breeds, \$225; paid in premiums, 226.02; expenses, \$5.87; balance in hand, \$2.81.

TOWNSHIP BRANCHES.

BRIGHTON.—Fifty-five members; subscriptions, \$57; balance on hand from previous year, \$148.84; public grant, \$62.38; received for seeds sold, \$128.30; total receipts, \$396.52. Paid for seeds, \$128.30; paid in premiums, \$106.15; expenses, \$25.25; balance in treasurer's hands, \$136.82.

CRAMAHE.—Forty-four members; subscriptions, \$46; balance from previous year,

\$6.84; public grant, \$45.40; receipts at show \$4.75; total received, \$102.99. Paid in premiums, \$77.60; expenses, \$20.02; balance in hands, \$5.37.

MURRAY.—Forty-eight members; amount of subscriptions, \$48.50; balance from 1858, \$21.20; government grant, \$54.25; received for seed wheat sold, \$16.19; total received, \$140.14. Paid seed wheat and charges, \$16.00; paid in premiums, \$78.62; expenses, \$9.45; balance in treasurer's hands, \$36.07.

PERCY.—Sixty-two members; subscriptions, \$65; balance from previous year, \$27.32; government grant, \$73.08; total receipts, \$165.40. Paid in premiums at show and ploughing match, \$127.21; expenses, \$21.64; balance in hand, \$16.55.

SEYMOUR.—Forty-seven members; subscriptions, \$47; balance on hand from 1858, \$15.84; public grant, \$46.87; total received, \$109.71. Paid in premiums, \$82; expenses, \$13.71; balance in hand, \$14.

WEST NORTHUMBERLAND.

COUNTY SOCIETY. One-hundred-and-eighty members; subscriptions, \$109; deposited by township branches, \$172; government grant, \$479.98; sundries, \$10.50; total receipts, \$771.48. Paid balance due treasurer from 1858, \$41.20; paid township societies, \$459.97; paid premiums, \$141.25; copies of *Agriculturist*, \$70.35; expenses, \$39.15; balance in treasurer's hands, \$19.56.

TOWNSHIP BRANCHES.

HALDIMAND.—Sixty members; subscriptions, \$60; balance from previous year, \$133.02; public grant, \$65.98; receipts at show, \$32; received on account of stock sold, etc., \$97.45; total received, \$389.45. Paid in premiums, \$171.80; Paid in purchase of stock and expenses, \$120.52; balance in hand, \$97.13.

HAMILTON.—One hundred and thirty-two members; subscriptions, \$132; balance from 1859, \$58.36; share of public grant, \$221; receipts at show, \$23; total received, \$434.36. Paid in premiums, \$263.50; paid county society, \$10; expenses, \$112.50; balance in treasurer's hands, \$48.36.

NORTH ONTARIO.

COUNTY SOCIETY.—One hundred and twenty members; subscriptions, \$120; balance from previous year, \$71.62; deposited

by township branches, \$303; government grant, \$479.98; receipts at show, \$82.56; total received, \$1056.95. Paid township branches, \$590.98; premiums, \$242; expenses, \$215.58; balance in hand, \$83.39.

TOWNSHIP BRANCHES.

BROCK.—Forty-eight members; subscriptions, \$50; balance from 1858, \$25.81; share of public grant, \$45.75; total received, \$121.56. Paid in premiums, \$103.50; expenses, \$11.70; balance in treasurer's hands, \$6.36.

REACH.—One hundred and twenty members; subscriptions, \$122; balance from 1858, \$103.82; government grant, \$116. entry fees, etc., \$24; total receipts, \$365. Paid in premiums at shows and ploughing match, \$289.25; expenses and sundries, \$31.67; balance in treasurer's hands, \$31.67.

UXBRIDGE.—Ninety-three members; subscriptions, \$93; balance from previous year, \$55.47; share of public grant, \$88.65; receipts at show, \$18; total, \$255.12. Paid in premiums, \$189.75; expenses, \$12.61; balance in treasurer's hands, \$52.61.

THORAH.—No report from this society. Shares of public grant received through township society, \$38.00.

SOUTH ONTARIO.

COUNTY SOCIETY.—One hundred and sixty-four members; amount of subscriptions, \$180; balance from previous year, \$123. deposited by township branches, \$399. government grant, \$479.98; receipts of \$62.35; donations, \$20; total received, \$1265.17. Paid township branches, \$48; premiums, \$438.25; expenses, \$13.61; balance in hand 63cts.

Extracts from Report.

South Ontario, situated on the north of Lake Ontario, extending about 18 miles from east to west, and about 13 from south to north, from the Lake Shore to the "Ridge" watered by the Oshawa Creek, Lj. Creek, Duffin's Creek and the Rouge, their numerous tributaries, affording a large amount of water power with a soil, composed chiefly of a fertile loamy clay, with some ridges of a gravelly or sandy loam, on a clay subsoil; with the fertile Town of North Ontario and Victoria in the west, with Lake Ontario in front, with Whitby Harbor near the centre, Port Oshawa on the east and Pickering Harbor on the west; and

the Grand Trunk Railway running through it east to west, with 5 stations within its borders; is pre-eminently adapted for agricultural, manufacturing and commercial purposes.

As the primeval forests were subdnd and the lands became free from swamps, new and improved implements of husbandry were gradually introduced, either imported or manufactured at home by artisans who settled in the country, until we have now implements of the most improved kinds, such as ploughs, harrows, cultivators, rollers, reapers, mowers, reeling-machines, straw-cutters, etc. etc., manufactured in our midst or brought to our shores on reasonable terms.

The rude log house has given place to the comfortable frame, brick or stone dwelling of the farmer, amply and often elegantly furnished from the cabinet and upholstery shops in the neighboring town or village. The primitive barn has also given place to the large frame barn, with ranges of stables and cattle sheds, with cellar or root house for securing root crops for winter and spring feeding. The fields have also undergone a similar change, being mostly laid out in a regular manner with a view to a more systematic rotation of crops, and the zigzag rail fence has in many cases given way to the straight post and board fence; and the shallow and superficial cultivation so common a few years ago, has given place to a deep and thorough system of cultivation; much more care is bestowed on collecting and applying manure than formerly. The all important subject of drainage is also engaging the attention of many of our farmers, but not to the extent we think the importance demands, as we believe thorough drainage to be the great panacea for most of the evils that wheat is heir to, such as winter killing, rust, midge, etc., etc. Draining in this county has hitherto been conducted in too partial and superficial a manner, but still with good results to those who have attempted it; we are not aware of a single field in South Ontario that can be said to be thoroughly drained; There are now four or five brick kilns in the county where the manufacture of fire tiles has been commenced and it will be the farming community to say whether it will be sustained or not; we are however convinced that on our stiff clay lands, thorough drainage will add more to the profits of the farmer than a thorough system of draining, and a proper rotation of crops. The culture

of root crops has been steadily increasing for some years past, with marked results in the improved appearance of the farm stock and fields.

The breeds of neat cattle, horses, and sheep, have been greatly improved by the importation of thorough bred animals, and by better system of feeding and housing them during the winter, which is amply repaid by the improved state of the animals, and in the quantity and quality of the manure produced for enriching the fields.

On the whole we believe that the march of agricultural improvement among us is onward in the right direction, and we confidently believe that when the next census is taken it will be found that South Ontario has not lagged behind her neighbors in this respect. We would however again urge the importance of a thorough system of draining, the adoption of a proper rotation of crops, avoiding consecutive crops of grain, particularly of wheat, on the same land; more attention to dairy husbandry, and the introduction of flax culture, all of which it is believed would add to the material interests of the farmer.

We would also call the attention of the farmer to the state of his wood lands, and remind him, that while in the early settlement of the county a war of extermination was waged against the primeval forest, the small remnants that are now left require his care and attention to preserve them from utter annihilation; and that much may be added to the beauty and comfort of our rural homes, by the judicious planting and rearing of forest and other trees and shrubs around them. We think also, that the subject of horticulture deserves more attention than it has yet received in this county.

Among the manufacturing establishments of the County, may be mentioned 26 mills, with from two to six run of stones each, engaged in the manufacture of flour and oatmeal, a large portion of the wheat grown in South and North Ontario and the western townships of Victoria being purchased in South Ontario, and manufactured into flour for exportation; a number of saw-mills engaged in the manufacture of lumber for home consumption and exportation; numerous establishments for wool-carding, cloth dressing, &c., affording excellent facilities for home manufacture, at several establishments woollen manufactures are carried on to a considerable extent; the establishment of Joseph Hall,

at Oshawa, employing from forty to fifty men, with the most improved machinery, driven by steam power, in the manufacture of threshing machines, plows, &c.; and of A. S. Whiting & Co., at the same place, employing about thirty men in the manufacture of scythes, hoes, forks, &c., they also use extensive machinery worked by steam power. There are also numerous small establishments throughout the County where agricultural implements of almost every description are manufactured. The cabinet manufactory of Fuller & Co., of Oshawa, employs about fifty hands, with a large amount of machinery driven by steam power; there are a number of cabinet and chair factories on a smaller scale, producing articles of every style of workmanship.

The merchants' shops in the towns and villages are well supplied with every description of goods, required for necessity, comfort, luxury or fashion; some of the merchants in Whitby and Oshawa import their goods direct from the British markets.

TOWNSHIP BRANCHES.

PICKERING.—One hundred and forty-one members; amount of subscriptions, \$162.50; balance from previous year, \$222.03; government grant, \$107.05; receipts at show, \$71.60; total received, \$563.18. Paid premiums, \$393.50; expenses, &c., \$61.52; balance on hand, \$108.16

WHITBY.—One hundred and eighteen members; amount of subscriptions, \$127; balance from previous year, \$133.74; government grant, \$90.10; entries at shows, &c., \$31.50; total received, \$382.34. Paid premiums at shows and plowing match, \$249.50; expenses, \$34.97; balance in treasurer's hands, \$77.87.

EAST WHITBY.—One hundred and sixteen members; subscriptions, \$126; balance from 1858, \$54.05; government grant, \$90.83; total received, \$270.88. Paid in premiums, \$170.50; expenses, &c., \$49.18; balance in treasurer's hands, \$51.20.

Miscellaneous.

Wood Ashes.

The opinion has become quite prevalent, that leached wood ashes have nearly the same value as unleached. This is evidently a great mistake, particularly when potash is the ingredient required for the crop. It is true that all the inorganic constituents contained in wood ashes are in a progressed form, and, therefore, have great

er value than when taken from lower forms of nature; and it is to this fact that their effect, as a manure, is to be attributed, and not to the potash that they contain, for the lixiviation removes all the soluble potash so thoroughly, as to render them nearly or quite valueless in that particular. Unleached wood ashes, however, have great value to the farmer; they not only supply the valuable constituents of plants, (potash) but precisely in the state in which it can readily be appropriated by them; and, in addition to this, their power to decompose both the organic and inorganic elements of the soil is very great. So chemists have supposed that ground felspar, because it contains thirteen per cent. of potash, would supply this element to plants. This is an error, however; the potash of felspar is not in a progressed condition, never having been in organic life, and, therefore, cannot feed plants of a higher class.

On this subject Von Thaer seems to have fallen into a strange error; but still to have observed the fact, that wood ashes have a greater value than potash in a more primitive form. He says, "Ashes must contain some peculiar and hitherto undiscovered matter, which gives to them an action so much more efficacious than that of equal quantity of the same earth which they contain, and taken in another state. It is possible that some portion of vegetable life remains in them which we are unable to appreciate or cover."

If Von Thaer had experimented with weight quantities of ashes, he might have discovered that the ashes of a burnt hay stack are more valuable than those of burnt wood, and that potash lixivated from the ashes of higher organisms, had greater value for agricultural purposes than that separated, by any process whatever from any of the rocks containing it. No farmer can afford to sell his ashes at twenty-five cents per bushel, provided he has soil not replete with potash, and still we find the soap boilers buy ashes at farm houses all over the country. The ashes taken from air-tight stoves is of a superior quality; the potash not being volatile, remains in the stove, while the other portions of the ash are carried by the draft into the chimney, thus at the end of the season, the ashes from an air-tight stove, in which wood has been burnt, are nearly pure potash.

Dressings of ashes around grape vines, trees, &c., are of high value, and soils topped with ashes, never suffer grain crops of kind to lodge: the siliceous part of the soil is changed into silicate of potash, and supplies this silicate to give coating and strength to the grain, thus enabling it to hold the grain. Perfect crops cannot be produced on an imperfect plant; nothing tends more to perfect the cereals, the presence of phosphate of lime and potash in the condition in which it exists in wood.—*Working Farmer.*

HABIT.—"I trust everything under the said Lord Brougham, "to habit, upon which, in all ages, the lawgiver, as well as the sci-

er, has mainly placed his reliance; it is
 bit which makes everything easy, and casts
 difficulties upon the deviation, from a wont-
 course. Make sobriety a habit, and intem-
 pance will be hateful; make prudence a habit,
 reckless profligacy will be as contrary to the
 nature of the child, grown or adult, as the most
 heinous crimes are to any of our lordships.
 Be the child the habit of sacredly regarding
 truth, of carefully respecting the property
 of others, of scrupulously abstaining from all
 acts of imprudence which can involve him in
 distress, and he will just as likely think of rush-
 ing into an element in which he cannot breathe,
 of lying, cheating, or swearing."

How to LENGTHEN THE SEASON—Farmers
 the North often complain that the season for
 wheat and growth is too short. They may
 lengthen it by underdraining Land, which
 under ordinary treatment must be out of use
 for several weeks for the water to run off and
 the soil is rendered dry in two or three days
 after being ditched, giving the farmer the control of his
 land and the privilege of working it from the
 spring. —*Ex.*

FRESH CLOVER SEED FOR SALE.

200 BUSHELS OF GOOD CLEAN SEED,
 Canadian growth.

Price on application and samples sent by
 parcel or otherwise. The seed is put up in two
 bushel bags of the best quality, and can be for-
 warded with safety to any part of the country.

Descriptive catalogues of seeds furnished
 gratis to applicants.

JAMES FLEMING,

Seedsman, 350 Yonge Street.

Toronto, April 22, 1861.

SHORT HORNS.

FOR SALE—FIVE BULLS, all entered in
 American Herd Book. Prices, from 100 to
 200 dollars. Also, a few **HEIFERS,** at low
 prices. Apply to

T. L. HARISON, Morley,

St. Lawrence County, New-York,

at the *Agriculturist* office, Toronto.

March 9, 1861.

6t.

FOR SALE.

FEW pure bred Devon Bulls, Cows,
 Heifers, Calves, &c., of unquestionable
 pedigree.

GEO. Z. RYKERT,

St. Catharines, C. W.

April 10th, 1861.

3-t.

FRESH GARDEN, FIELD and FLOWER Seeds for Spring Sowing.

The Subscriber begs to inform his friends and
 the public that his stock of Fresh Seeds is
 now complete, and very extensive, embracing
 almost

EVERY VARIETY OF SEED

that is adapted to the country. The stock of
 Agricultural Seeds is large and well selected,
 and the vitality of each sort, being fully tested,
 the genuineness of the seeds may be fully relied
 upon.

Merchants and Agricultural Societies order-
 ing Seeds in bulk will be supplied at wholesale
 prices. Complete assortments of garden seeds
 neatly put up in small papers, with directions
 for sowing, and sold by the box containing 150
 papers for \$5. Twenty packages of Flower
 Seeds, choice sorts, will be sent free by post to
 any part of the Province, to the address of
 any party remitting \$1, free of postage, or 25
 packages, postage unpaid.

The Subscriber wishing to give parties who
 reside at a distance an opportunity to test the
 qualities of his seeds, will on the receipt of \$2,
 free of postage, send free to any Post Office in
 Canada, 25 full sized packages of **VEGETABLE
 SEEDS,** many of them containing an ounce of
 seed, and 12 papers of choice **FLOWER SEEDS**
 with descriptive catalogue and box included—
 the seeds to be of my own selection. None but
 the most useful and desirable varieties will be
 sent.

Descriptive catalogues of Garden, Field and
 Flower Seeds furnished gratis to applicants.

JAMES FLEMING,

Seedsman to the Agricultural
 Association of Upper Canada,
 350 Yonge Street.

Toronto, April 22, 1861.

9—3t.

SEEDS! SEEDS! SEEDS!

200 BUSHELS WHITE POLAND OATS;
 weighs 42 lbs. to the bushel.

100 bushels Hungarian Grass.

100 bushels imported Swede Turnip Seed.

200 bushels of Early and Late Potatoes, fine
 sorts for seed, with a full and general stock of
 all kinds of Seed for the Farm and Garden.

Descriptive catalogues of Garden, Field and
 Flower Seeds furnished gratis to applicants.

JAMES FLEMING,

Seedsman to the Agricultural
 Association of Upper Canada,
 350 Yonge Street.

Toronto, April 20, 1861.

GARNET CHILI POTATO.

The Subscriber has on hand upwards of a
 hundred bushels of this new and superior
 variety of potato to sell for seed.

ALEX. SHAW,
 Oak Hill, Toronto.

April 15th, 1861.

SEEDS! SEEDS! SEEDS!

TORONTO SEED STORE,

CORNER OF FRONT STREET AND WEST
MARKET SQUARE.

THE Subscriber would beg to direct the attention of his friends, and the Public to his assortment of

FIELD, GARDEN, AND FLOWER SEEDS,

Comprising large quantities of Turnips, Carrots, Mangel-wurzel, Cabbage, Onion, Parsnip, and everything worthy of cultivation in this latitude. They are all of the best quality and procured from such sources as to warrant their genuineness.

THE SIXTH ANNUAL EDITION OF HIS PRICED
CATALOGUE

Of seeds, contains full directions for the treatment of various Seeds and Crops, together with much valuable information regarding this subject, and may be had gratis on application.

It forms a neat little pamphlet of 45 pages, and a perusal of it will show purchasers the advantage of procuring their supply of Seeds from responsible Seedsmen, instead of from parties having no knowledge whatever of the business.

The satisfaction so generally expressed by those with whom he has had the pleasure of dealing heretofore leads him to hope that he will continue to receive a large share of the Public patronage.

Orders per post or otherwise will receive prompt attention, and are requested to be addressed to

J. A. SIMMERS,
Seedsmen.

Toronto, April 1861.

4-t.

FOR SALE.

A PURE bred young short horn Bull; Sire and Dam imported in 1857, and both took First Prizes at the Provincial Show in Brantford the same year.

Address, R. R. Bown, Brantford.

N. B. Full blooded cow stock taken in exchange, if desired.

Brantford, April 8th, 1861.

4-t.

BOARD OF AGRICULTURE.

THE Office of the Board of Agriculture is at the corner of Simcoe and King streets, Toronto, adjoining the Government House. Agriculturists and any others who may be so disposed are invited to call and examine the Library, &c., when convenient.

HUGH C. THOMSON,

Toronto, 1861.

Secretary.

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A description of Lois Weedon Husbandry.....
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AGRICULTURAL INTELLIGENCE:

Linseed meal for Calves, Wheat in Lower Canada, The Alpaca, Tables of weights and distances, Cure for Lice on Cattle.....
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