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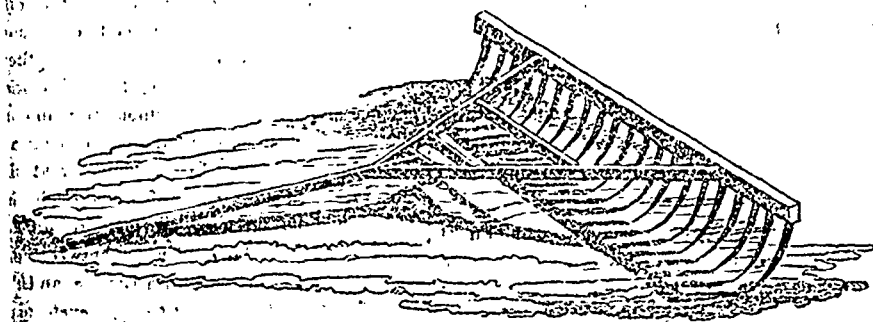
CULTIVATOR.

"AGRICULTURE NOT ONLY GIVES RICHES TO A NATION, BUT THE ONLY RICHES SHE CAN CALL HER OWN."—Dr. Johnson.

Vol. I.

TORONTO, JULY, 1842.

No. 7.



"HAND DRAG RAKE."

HAY-MAKING.

As but few farmers appear to understand properly the mode of curing hay, so that it may retain a desirable green colour and sweet flavoured taste, we beg to give them some hints for doing this, derived from our own experience.

In the month of July, which is the usual hay-making month in this country, there is more or less cloudy and rainy weather, which is not adapted for drying hay. The mowers should be kept employed, as much as possible, in such weather, so that when it becomes fine, all hands may be stringing along the mown grass. The swarths should never be opened except on a fine sunshiny day, and at the time this is done, the grass should be well shaken apart and equally read over the ground. As soon as the upper surface is dry, turn it well over; this being done, commence raking into windrows, such time that the whole may be made into small cocks before night, which should weigh about a half-cwt. each. The second day these cocks must remain untouched; and on the third day, if the weather be fine, they should be opened and thrown into rows, or made up about two swarths in width, or if the weather be very heavy three swarths in width should be better, and time should be taken to gather the whole into windrow and cocks before night, with great care that none should be left open.

On the fourth day these cocks will only require to be opened for an hour or two, when they will be fit for the stack or the

To complete the process, about one bushel of salt for every ton of hay should be sown in alternate layers over the mow or stack.

The crown of hay stacks should in all cases be thatched, as soon as sufficient time has been given them to become solid.

The advantages of curing hay on the plan proposed are obviously the following:—By shortening the period, when the hay is openly exposed to the parching influence of the sun; the colour of it is more perfectly preserved, and consequently the quality; and the fermentation which takes place while in the cocks, diminishes that principle, so as to prevent injuriously heating in the stack or mow. It may at times be impracticable to act fully up to the plan laid down, as thunder storms and other inevitable causes may intervene, yet the nearer it is acted upon, the better will be the quality of the hay.

The accompanying "Hand Drag Rake," will be found an acquisition to the hay maker, and extremely useful in raking barley and other stubbles, and is simple in its construction; but the "Revolving Rake," an illustration of which was given in the March number of *The Cultivator*, although more expensive, will be found preferable for hay-making, as it would save a great amount of manual labour.

UNDERDRAINING.

This is a suitable month to make some experiments in underdraining on the fallow-lands. The importance of this operation, especially on heavy clay soils, is incalculable; indeed, there are but few farms, however well situated, but what have more or less unproductive, marshy, or springing ground, which might be brought into cultivation with a trifling expense, and the land doubled in value in a single year. In sections of the country where the land lies considerably undulating, the vale or flat intervening between the rise and the fall, is apt to be unfit for the production of grain, and

the common practice is to seed those places down with the English cultivated grasses: whereas if they were properly underdrained, they would produce an abundance of grain or roots of every description, and not only increase the value of the land, but add much to its beauty and comfort in its management.

The process of underdraining is so simple, that it may be performed by any labouring man at all conversant with the use of the spade. The only difficulty in their construction is to find the natural fall for the water, which may happen when the land intended to be drained is nearly on a water level, or where it is very uneven on the surface.—Nature has provided the best and most convenient engineer for to obviate this difficulty. The drain after being dug the desired depth, should be left open until after a shower of rain, and the parts that are sunk too deep will be filled with water, and by sinking (a little lower) the parts of the bottom of the drain that are not covered with water, the natural fall may be found.

As we have had some practical experience on the subject, and have witnessed its beneficial effects in numerous instances, we take a pleasure in making a few suggestions to our subscribers, and hope they will give the subject due consideration.

The open drain should be about 20 inches wide and 24 deep. There are a variety of plans of constructing a course for the water. We will however let a few suffice for the present. The most substantial one is made by using common cobble stones taken from the field, by laying them in the bottom of the drain, as though laying the foundation of two separate walls, facing each other about 8 inches asunder and about 6 inches in height, and covering the whole over with flat stones; then covering them over with a layer of straw or small brush to prevent the soil from filling into the drain. A drain constructed properly on this principle, and sunk a sufficient depth to prevent the frost from penetrating, will last for centuries.

In many parts of the country stones are not sufficiently abundant for the purpose of underdrainage; where this occurs, we would advise the farmer to procure the young growth of cedars, and lay two poles in the bottom of the drain, about the same distance apart above mentioned; then provide larger pieces, say 1 foot in diameter, split them through the centre, and use them as a covering. If small growth cedars cannot be had conveniently, by splitting the large trunks into pieces averaging 4 inches in diameter, they will make an excellent substitute; and when cedar cannot be had, white oak will be found probably the next most durable wood, and is frequently used. The ditch must be filled up as above described.

(To be Continued).

EATING AND DRINKING.—It will rather take the reader by surprise to be told, that in a life of 65 years duration, with a moderate daily allowance of mutton, for instance, he will have consumed a flock of 350 sheep, and that altogether for dinner alone; adding to his mutton a reasonable allowance of potatoes and vegetables, with a pint of wine daily, for thirty years of this period, above thirty tons of solids and liquids must have passed through his stomach.



THE CULTIVATOR.

"Agriculture is the great art which every government ought to protect, every proprietor of lands to practice, and every inquirer into nature to improve."—Dr. Johnson.

Toronto, July, 1842.

By the last Mail from England, we find that the new Tariff of Sir Robert Peel has not yet become law, but very little doubt existed that it would be adopted by the Imperial Parliament, notwithstanding the great opposition offered to it by the English agriculturists.

We could not expect that the great interests of the British Isles, would be sacrificed for the particular benefit of this or any other of the British colonies, but we humbly conceive, nevertheless, that some consideration is due to the interests of the colonies, and that their industry and trade should be *decidedly* encouraged in preference to all foreigners. When British born subjects, now inhabitants of British America, emigrated from their dear father-land to settle in this country, they considered they would be as much the objects of the fostering care and encouragement of the British Government and Imperial Parliament, as if they had remained in the land of their birth. We have so many difficulties to contend with here, that do not appear to be perfectly understood at home, and we are at so great a distance from the mother country, that we cannot compete with the inhabitants of the North of Europe, or of the United States, unless we have decided encouragement and preference secured to us in the British markets. The advocates of free trade may say it would be better to part with the colonies altogether, than give them any such encouragement and protection, as would cause the inhabitants of Britain to pay more for their produce, than they would have to pay to foreigners for the same description of produce. Free trade advocates forget, that whatever is received by the inhabitants of British colonies from their fellow-subjects of the British Isles, finds its way back to them by some direct or indirect channel; and this would not be always the case in trading with foreigners. Does not every shilling we can spare go to the purchase of British manufactures, or brought to us by British ships and sailors? The most prejudiced advocate for free trade, must know that it is very favourable for the country that can exchange goods manufactured by machinery chiefly; for the raw products of other countries, that can be only raised by the labour of men, horses, and cattle. We may be answered that we do not contribute to the British revenue in due proportion, and therefore that we

are not entitled to the same privileges as those who do pay this revenue. We have repeatedly endeavoured to show that we do *indirectly* contribute to the British revenue, in as much as we are the purchasers and consumers of British goods, that come to us charged with all the cost of production, including the revenue paid by those who produced them, and a profit. This must be manifestly the case, or goods would not be sent to this country to be sold. It should also be remembered, that it is in the British Isles the revenue is principally expended, and also, that it is there all the immense profits of trade, manufactures, and commerce are chiefly expended, in the encouragement of British industry and production. It would be ungenerous to tax poor colonists equally with the inhabitants of the British Isles, under so very different circumstances and means of paying taxes. It may readily be supposed, that a want of sufficient capital must be injuriously felt here, when it is known that a large proportion of emigrants settling in this country, come here in consequence of having lost their capital in the old country; and it was not by the destructive agents of fire and water that they lost their capital, but by entering into engagements and speculations, that transferred their capital into other and more fortunate hands. Very few of the emigrants who become settlers in British colonies, belong to the class who spend their fortunes in luxuries and extravagance, on the contrary, they almost all belong to the classes of farmers, tradesmen, and labourers who left most of the capital they ever did possess, after them in the land of their birth. What can be done here without capital, where the land is all either in a wild state of nature, or exhausted by constant croppings, and in want of draining and manuring? To a moderate extent, capital is more necessary here than in England. It may not require that a farmer should have from seven to ten pounds per acre capital for all the land he occupies, but the nearer it is to that amount, the better chance he will have of successful and profitable farming. Farmers coming from the old country, are surprised to see a stone or a stump in a field where they ought not to be, and a drain wanted where it was necessary it should be cut, but they do not consider that, perhaps, these farms were a few years back covered with a thick forest and abundance of staves; that the country is new, labour dear, capital insufficient, and the price of agricultural produce much lower than in England. From all these causes, it is no wonder that the inhabitants of British colonies should expect favour from the parent state, that would protect and encourage them in preference to foreigners. All the favour they could expect, or that is possible to extend to them, will be only making them more useful and profitable subjects and customers. It is not a small advantage to the British Isles, circumstanced as they are with regard to population, that they should have a country such as British America, to receive their surplus and unemployed population; and every class in Britain are interested in the prosperous condition of this country, because if it is prosperous, the surplus population that are burdensome to them in Britain, may, by coming here, be in a condition to become profitable customers for British goods, and loyal subjects to the British Crown and Government, neither of which they could be

if they remained in distress and poverty in the old countries. What do foreign nations understand by reciprocity treaties? Our neighbours of the United States might be induced to consent to establish a reciprocity treaty on the principle of allowing a free trade in agricultural produce,—that is to say, they might admit, (though they do not at present), our wheat, flour, barley, rye, oats, Indian corn, peas, beef, mutton, pork, &c. &c., on the same terms as we would admit the same description of articles from them. But as the people of the United States are perfectly aware, that if we had this produce to dispose of, we could not find a profitable market in their country; would they be willing to admit British produce and manufactures without duty, in consideration of their agricultural produce being admitted into this colony free of duty, or at the same rate of duty that our Tariff would establish? This would be the only *equitable* reciprocity treaty that could be established between this country, as a part of the British Empire, and the United States. It could not be any benefit to us that a foreign nation could concede the privilege to us, of admitting duty free, such articles only as we would never have to export, or find customers to purchase if we did export. Let them admit, duty free, what we can export, and they may reasonably call upon us to admit, duty free, what they can export. Such a treaty as this, might not be very favourable to Canadian farmers, but it would be one that they could scarcely object to, forming as they do, a portion of the great British family. Were all protective duties established by nations to be abolished, Canadian farmers would not ask for protection; but *this* is generally the case all over the world, they would ask the same encouragement and protection that others think necessary to secure the industry from undue foreign competition. A neighbouring nation may say to Britain and her colonies, "we have abundance of produce in our land that abounds in corn, cattle, and other agricultural products for which we have not sufficient consumption, we would, therefore, ask you to admit, duty free, all we could spare of these products. We cannot, however, admit your manufactures on the same terms, because we are desirous to encourage and protect our own industry and manufactures, in order that we may not require any foreign manufactures in future; but we will consent to admit, duty free, your agricultural produce, if you have any to spare, and can find customers amongst us to purchase." This is what is understood by a reciprocity treaty, and there would be as reasonable a prospect of doing a profitable business by sending coals to Newcastle, or tea to China for sale, as by sending agricultural produce to the United States to be disposed of there. Our Subscribers may not think it necessary that we should constantly refer to this subject, but we do so from a sense of duty to them, pledged as we feel ourselves, to discuss measures which we are firmly persuaded will deeply interest them, and have a powerful influence upon their future prospects. If British America is capable of having a prosperous agriculture, under the free trade system in agricultural produce with the United States, we confess that we are not competent to form a correct opinion on the subject. We are anxious to see the beautiful provinces of British America with a full population, and abounding in corn and cattle.

own, when we know they are capable of being both; but we do not wish to see these finances neglected and waste, and our means of communication chiefly employed in carrying the produce of a foreign country, into and through these provinces, for the consumption of our own population and for exportation. If our situation required this, and that our lands were capable of profitable cultivation, it would be to have this foreign supply, but we assert the contrary is the fact, and that these provinces are capable of profitable cultivation.

G. Palmer, M. P., for Essex, in a late decision on the new Tariff, said he opposed the free trade system, "because he believed that this country (England), owed her prosperity to a protective principle—that her shipping, her commerce, all prospered under it; in fact it was by protection she had maintained her superiority." If this be the fact as regards England, we are only following our parents example, and doing for the same protective principle to be done to us, that has been proved to be so advantageous to the mother country. Though we in this new country, we, the agricultural class, are very conservative, so far as not to wish to give up any established principle, that we continue to have been a great benefit to our parent country. We are most desirous, as dutiful children, to wish the principles and example of our parents; and we have such perfect confidence in the wisdom of our parent state, that we are anxious to adopt their principles in all things. England prospered under the most strictly protective principle, and we feel that we have not, and are not prospering under the free trade system in general produce. No wonder then that we should be desirous to have exactly the same extent of protection that is offered to the inhabitants of Ireland and Scotland, and we will not ask for less. A new country, such as this is, must receive as much encouragement and protection as a country that abounds in riches, and has great cities, towns, villages, country houses built—land cultivated and amply stocked—has roads, rail-roads, and canals—her shipping—she is by far the richest country on earth, in fact it is considered to constitute riches—and the poor.

CURE HEAVES IN HORSES.—Take one oz. of Sassafras, 1 oz. Asafoetida, 1 pint Rum: give a spoonful of this mixture in oats every other day.

Another.—Take a weasel skin, and chop it up and add 1 lb. ginger, 1 quart molasses, and give to the horse with the grain in reasonable quantity.

Another.—Horse warts, chopped up fine, and mixed with the grain.

In order to give some idea of what farming is in this land, we beg to submit the following statement which appeared in *The Work Lane Express* of the 18th of April last. The farm referred to in this statement, is represented to have been a rabbit warren, and probably let for two or three and six pence the acre, and would be unproductive in corn, were it not managed in the spirited manner described. It is further stated that although profitable to the landlord, and labourer, when corn is selling at the price specified—yet, on the other hand, were the soil of corn, &c., to fall much below those prices, a most serious loss must be the consequence,

and would throw not only this farm, but all others out of cultivation, that will not pay for cultivating, to the serious injury of the landlord, tenant, labourer, and eventually to all productive classes. We recommend the statement to the attention of Canadian farmers:—

A CALCULATION showing the Profit of a Lincolnshire Heath Farm of 1,100 Acres of Land, according to the present mode of cultivation, the produce being sold at what is generally considered fair remunerating prices. The CAPITAL necessary for working the same to the greatest advantage £7,700., or £700. per hundred acres.

DEBTOR.

	£.	s.	d.
A year's rent at 20s. per acre.....	1,100	0	0
275 acres of turnips requiring 16 bushels of bones per acre—4,100 bushels at 2s. 9d. per bushel....	606	0	0
Carriage of do., toll bars, men's expenses, 36 waggon loads—half calculated as back carriage—18 loads at 6d.....	5	8	0
275 acres of wheat requiring 60 tons of rape cake, being 5 cwt. per acre, at £7 10s. per ton.....	517	10	0
Carriage ditto, 34 loads, half being back carriage—17 loads at 6d....	5	2	0
Rates and taxes.....	165	0	0
Wheelwright, carpenter, blacksmith, and whitewash.....	170	0	0
275 acres of wheat, seed, 3 bushels per acre, 103½ quarters at 6s. per quarter.....	309	7	6
275 acres of barley, 4 bushels per acre, 137½ quarters at 35s. per quarter.....	240	12	6
60 acres of red clover—60 stone of seed at 11s. per stone.....	33	0	0
215 acres of white clover—215 stone of seed at 10s. per stone....	107	10	0
6½ quarters of rye grass at 45s. per quarter.....	14	12	6
20 acres of tares—60 bushels at 7s. per bushel.....	21	0	0
15 labourers regularly employed from 11s. to 13s. 6s. per week for 40 weeks—average 12s. per week.....	360	0	0
15 labourers regularly employed for 12 weeks, averaging 18s. per week.....	162	0	0
15 boys at 6s. per week, for 52 weeks.....	234	0	0
18 men servants—Wages £35, £25, £20, £18, two at £15, two at £14, three £12, three £10, and four £8 each.....	256	0	0
Board of the above eighteen at £18 each per year.....	324	0	0
35 quarters malt at £3 per quarter £105, Hops £14.....	119	0	0
5 women servants—Wages £12, £10, £9, £8, and £7 each.....	46	0	0
Board of ditto, £16 each.....	80	0	0
Extra labour required to hoe half the turnips which the regular labourers have not time to do—137 acres twice at 5s. per acre....	34	7	6
137½ acres of wheat mowing and gathering at 7s. per acre.....	48	2	6
34 horses keeping at £20 each, including 60 acres of clover and 20 acres of tares.....	680	0	0
3 hackneys keeping at £20 each, and depreciation.....	60	0	0
Wear and tear of thrashing machine, winnowing machine, drills, waggons, carts, &c. &c.	100	0	0
Depreciation in value of cart horses, and loss of ditto by death, veterinary surgeon, &c. &c.....	140	0	0
Loss of sheep by death—Sheep at 5 per cent.....	87	10	0
Expenses attending markets, fairs, &c., &c.....	30	0	0

Carried forward, £ 6175 11 1

	£	s.	d.
Brought forward,	£ 6175	11	1
Average produce of wheat from 275 acres at an average of 3½ quarters per acre 902½ quarters—deduct for seed 3 bushels per acre 103½—delivering wheat 700 quarters at 61. per quarter.....	19	15	
Average produce of 275 acres of barley at 4½ quarters per acre—1,306½ quarters—deduct for seed 137½ quarters—delivery at market 1168½ quarters at 61. per quarter.....	29	4	3
70 beasts for the straw yard at £13 each.....	910	0	0
23 tons of oil-cake for ditto, at £11 10s. per ton.....	264	10	0
700 lambs to eat the turnips that are not required for the regular sheep kept, at 26s. each.....	910	0	0
Oil-cake and culm for them at 4s. per head.....	140	0	0
Loss from death from ditto at 5 per cent.....	52	10	
Interest on the capital £7,700, at 5 per cent.....	385	0	0
Profit to balance.....	863	18	2
	£ 9699	8	9

The bones and rape-cake and expenses of carriage must be considered as rent, and would stand thus, say:—

Rent.....	£1,100	0	0
Bones.....	606	0	0
Rape-cake.....	517	10	0
Carriage of both, or £2 0s. 7d. per acre.....	10	16	0
	£ 2,233	0	0

Not taking the oil-cake into account given to the beasts in the straw yard, and lambs at the mill, say:—

Lambs on turnips amount.....	£ 140	0	0
Beasts at straw ditto.....	264	10	0
	£ 404	10	0

15 labourers, 15 boys, 18 men servants, 5 women servants, 20 extra men to assist in hoeing turnips and during the time of harvest. Total 73, besides the tradesmen above alluded to.—Wages, £1,188 12 6; Board, £404 0 0; Blacksmith and other bills, £170 0 0. Total £2,762 12s. 6d.

CREDITOR.

	£.	s.	d.
By 275 acres of wheat at 3½ quarters per acre 902½ quarters, at 60s. per quarter.....	2681	5	6
By 275 acres of barley at 4½ quarters per acre 1306½ quarters, at 35s. per quarter.....	2985	16	0
By 700 beasts at £16 each.....	1120	0	0
By 250 fat ewes bred upon the farm, 22½ lb. per quarter, at 6d. per lb., and wool at 5s. each... 625	625	0	0
By 700 hogs, at 19 lb. per quarter, at 6d. per lb., and wool, supposing each hog to clip 8 lbs. each, at 1s. per lb., making together 46s. each.....	1610	0	0
By wool from 1250 sheep, 4 to a ton, 312½ tons at 28s. per ton... 437	437	10	0
By 25 fat pigs, 25 stone each, at 7s. per stone, £8 5s. each, fed upon hinder-end barley.....	218	15	0
By dairy—8 cows, say profit besides what is used for the family 40	40	0	0
By 8 young beasts bred on the farm, at £7 each.....	56	0	0
	£ 9699	8	9
Profit brought down.....	£ 863	18	2

The profit should be half the direct, as well as indirect rent, say:—

Rent.....	£1100
Indirect rent.. 1133—consisting of bones and rape-cake.	1133
	£2233

This should be the profit £1116 10.—True as admitted by Sir Robert Peel.

The foregoing CALCULATION is followed by a certificate signed by thirty gentlemen occupying 24,600 acres of land—this is a copy:—

"We, the undersigned occupiers of land in the neighbourhood of Lincoln, have carefully examined this document, and do not hesitate to say, we believe it to be strictly correct.

"Lincoln, March 13th, 1842."

There is another Calculation given that shows the produce exactly the same as the foregoing, but also shows that by the fall in the price of grain and butchers' meat, that will be the probable consequence of the new Corn Law, and new Tariff, the proceeds will be lessened by the sum of £1,363. 4s. 2d., being equal to the amount of all the rent, and £283. 4s. 2d. of the farmer's profit. This latter statement is also certified by the same gentlemen who signed the first.

We have given this statement to enable Canadian agriculturists to compare their practice and results with those of their brother agriculturists in England. Until we are able to employ more capital and labour in agriculture, we cannot of course expect a large and valuable production. By this statement it appears that the cost of bones and rape-cake alone, is equal to £1. per acre for the whole farm, besides all the farm-yard manure made upon the farm from a large stock of horses, cattle, sheep, and swine. The cost of labour is equal to about 11. 10s. per acre annually for the whole farm, besides the labour of 31 horses. It should not, therefore, surprise us that large returns should result from such cultivation, nor should we be disappointed at seeing the light and weedy crops produced in Canada, considering the very defective manner in which they are cultivated. We may have good crops here where the land is naturally so rich and fertile that it will produce a good crop from the most slovenly cultivation; but in a large proportion of the country the soil is worn out, and no measures adopted to restore it to fertility and clean it of weeds,—consequently the crops are very poor and of little value. There are some excellent farmers in Canada certainly, but even the very best farmers seldom cultivate their lands with so much care, in draining, ploughing, sowing, hoeing, and weeding, as in England. Indeed, the prices of agricultural produce here would not pay for it.

At a meeting of the "Central Board of Agriculture," held at Halifax, April 30th, 1842, the following forms a part of their proceedings:—

"The Board having subscribed for fifty copies of *The Mechanic and Farmer*, published at Picton, directed that Mr. Stiles should be desired to send six copies to each of the non-resident members of the Board, six copies to the County of Inverness, for Mr. Young, and the remaining 20 copies, together with the 20 dozen copies formerly ordered, of *Snails' Veterinary Table*, to the Secretary of the Board at Halifax, that the same may be generally distributed.

The Board having also voted 3d. to continue their subscription for 250 copies of the *Colonial Farmer* to the next meeting of the Legislature, and their object being to distribute the paper as widely as possible, and to excite a taste for Agricultural knowledge and inquiry, they determined that three copies of each number should be sent by Mr. Nugent to every member of the Legislative Council and House of Assembly resident in the country, and that the remaining copies should be distributed by the Board as heretofore."

We have copied the above from "*The Colonial Farmer*," an excellent agricultural periodical, and for 250 copies of which the Board of Agriculture are annual subscribers. This is encour-

agement which, we fear, will not be given in Canada, to *THE BRITISH AMERICAN CULTIVATOR*.—We have stated repeatedly that our columns are open to all contributors who are disposed to give useful information on agricultural subjects, and if it is not so useful or interesting to the public, it is the fault of those who withhold their light, and would rather hide it under a bushel, than allow the public to be profited or amused by it.

The following resolution was unanimously adopted at a late meeting of the "Maudstone Farmers' Club." The subject of discussion was the best sorts of stock, and the best modes of breeding and feeding:—

"Resolved, — That it is the opinion of this meeting that the Sussex breed of cattle are very good, and perhaps, all things considered, are the best kind. For the purposes of milk and butter, the Alderney kind are well suited for small dairies; for larger, a cross between the Sussex and South Wales, or Sussex and Alderney are very good, it is believed that a little of the short-horn blood might be introduced with some advantage. The Kent sheep for general purposes are also very good; Mr. Goord's breed are considered a superior kind. For folding the South Downs are more suitable than the Kents, the improved Kents being, however, considered best for general purposes. When winter keep is short, sheep may be put into a yard with advantage, both for the purpose of fattening or of common feeding; in that case, some mould should be put in the yard previous to littering, and the sheep kept clean."

AGRICULTURAL REPORT FOR CANADA EAST.

The month of May continued cold, with occasional night frosts, to the end. The greater part of the month of June also, up to this date, was cold and wet for the season, with slight frost two or three nights. The spring altogether has not been very favourable for vegetation, and it has been generally so cold and inclined to frost, that most of the wild plants and cherries are blasted. Though rain fell frequently, it was not in large quantities, and did not interrupt the field work much; the consequence is, that the sowing and planting is very generally finished. The appearance of the crops is healthy, and where justice has been done to the land, they are as promising as we could expect them to be. The past winter was very unfavourable to fall sown wheat in Eastern Canada, from the small quantity of snow that was upon the ground at any one time, and the early exposure of the wheat plants to the frost in March and April. We sowed a few acres on the 6th of September last for experiment. The land was not prepared by summer fallowing as we would have wished, and therefore, we were unable to sow the seed in drills. The plant had a good appearance at the beginning of winter, but there was very little snow upon it during the winter or early part of the spring. A large proportion of the plants were, in consequence, frozen out and destroyed, and there will not be half a crop. It is not yet in ear, and we fear it will not come into ear before the 25th of the month, the earliest period of the first appearance of the wheat fly. It will, therefore, be exposed to their ravages, should they appear this year as usual. A few grains of rye happened to be mixed with the wheat, and it has come up very strong and luxuriant, is now fully double the height of the wheat, and had some of the ears shot out the 4th of June. It is all fully in ear, and beyond

any risk of injury from the wheat fly. In this circumstance, we are convinced, that sown rye, if soon early in September, would succeed well, and be perfectly safe from the ravages of the wheat fly. We have seen spring rye last year, nearly all destroyed by the fly. If a good crop of rye could be raised certainly by sowing in the fall, it would be a great benefit for farmers to sow it. It would answer as a very good substitute for a proportion of wheat and the flour of rye and wheat mixed, would make good bread. Most of the inhabitants of the North of Europe have little other bread than that made from rye. If our wheat had been sown in drills, or lightly covered in with plough, on soil properly prepared, we had doubt that the plants would not have suffered much from the frost and exposure. When the wheat plant is not fixed to a sufficient depth in soil, in the expansion of the soil by wet and frost, the plants are thrown out of the ground and withered. We would strongly recommend farmers to make some experiments this fall in sowing of wheat and rye—in drills—ploughed lightly in—and harrowed in the ordinary way the surface of the ploughed soil. It is of consequence to them, and to the whole Canadian community, that it should be ascertained in what way wheat and rye can be most certainly profitably produced here. We do not entertain a doubt but both may be produced here, and saved from the ravages of the fly by judicious cultivation and fall sowing. We confess we have not much confidence in spring sown wheat, until we are satisfied that the plants are diminished in numbers. Sowing has occasionally succeeded, but it has also produced total failure; and we think there is too much of raising a large quantity of wheat for exportation. Perhaps the quantity of land under plough in Eastern Canada is not much less now, when more than half of the ploughed land is annually sown with wheat. It is therefore not surprising that more of oats, and other inferior grain are now grown in this country, than is necessary for our ordinary consumption. If we had the supply of our markets with butchers' meat, and the produce of the dairy, some part of this inferior grain that cannot be exported, might be used in manufacturing butchers' meat; and it would be an extraordinary state of things if Canada was not able to supply her few cities and towns, with all descriptions of agricultural produce they ever could require. We are persuaded that the Island of Montreal would, if properly cultivated, furnish an abundant supply of agricultural produce of every description to the inhabitants of Montreal, and also of the county of Montreal. They do not there amount to over, about 50,000, and there are near 130,000 acres of good land, of which 100,000 has been cultivated. Hence for two acres of cultivated land for each inhabitant. It is the want of encouragement to agriculture that it is not in a more flourishing condition. The inhabitants of cities and towns buy provisions cheap, they generally care not a straw for the price which is paid for provisions, goods, and the encouragement of agriculture, and improvement among our own fellow-subjects or to foreigners. A look at our cheap provisions and other necessaries

never appear to consider that the money of their own fellow subjects finds the way to the cities and towns every shilling of it, for indirectly, and this is by no means the then paid to foreigners. Without markets a sale of produce, how can agriculture be ours? particularly in a country like this nine-tenths of the population are employ- agriculture. The only remedy that is in the power of farmers is to "Shear their own and wear it," for it will be impossible for to buy without the means to purchase. We do not wish to be considered disposed to make any without any cause. If we are in error would willingly be set right, and acknowledge error. We cannot see how Canadian is to prosper, if the few markets we are supplied, in a great measure, with for- agricultural produce. We may be condemn- advocating so constantly this principle, but it is useless to expect an improving and our agriculture under our present laws. As well, therefore, cease to recommend improved systems of cultivation and present to farmers, unless there is some of their proving profitable to them.— cannot afford to expend labour on what yield remunerating returns.

meadows in the neighbourhood of Mon- good, but in general throughout the it is said that they are short and poor.— see of hay in the Montreal market is very 22s. 6d. to 27s. 6d. the hundred bundles. could not prove that the country is not su- or raising and feeding cattle. Straw is . The prices current will show the prices of produce. All tending to prove that we the most simple means to feed ourselves about any foreign aid. The prices of meat is very low for this season of the There is abundance of labour to be hired, quence of the very numerous emigration r. The Government will save many of or emigrants from suffering and misery, arding necessary public works, that give them employment and retain them in try. Now is the time that they want ment, immediately on their arrival, before come discouraged, and go off to another We do not believe that the neighbour- s would give them so much encourage- they will obtain here, but if they once country, very few of them will ever be come back here. There is ample means to give them employment, if the work y go on; and in a few years, these poor ay be cultivating their own farms, and as for British manufactures.

St. Paul, June 20th, 1842.

W H I N T S T O T H E W H E A T G R O W E R .

is no operation in agriculture to which degree of importance should be attach- that of properly preparing land for the of wheat; yet there is no subject upon ere is a greater amount of ignorance , when its importance and the numbers in the business, are taken into consider- With most farmers it is sufficient to at, by ploughing two or three times, (and y be in an imperfect manner); the soil comparatively mellow while they have ledge whatever of the changes which the

soil undergoes by contact with atmospheric agents, and that deep, clean, and frequent ploughing a of vital importance to give strength, vigour, and freedom of penetration to the coronal roots of the plant, which cannot make any impression through the hard pans caused by unskilful cultivation, unless thoroughly broken up and pul- vorized.

As wheat is the principal and almost the only staple crop the Canadian farmer can cultivate with profit, we deem it our duty and privilege as conductors of an Agricultural Journal, to disseminate all the useful information in our power on the subject, and give our own opinions and expe- rience frankly, at the same time we earnestly so- licit our Subscribers to make some experiments on this crop the ensuing fall, and when the proper time arrives report the results through the medi- um of THE CULTIVATOR.

To prove that we do not urge on others what we are unwilling to attempt ourselves, we take much pleasure in reporting a few experiments which we made in the fall of 1839.

The experiments in question, were made on land ploughed or broken up in the month of June, to the whole of which an equal amount of ma- nure and seed was applied. The field on which they were made was divided into four equal por- tions, and each treated in the following manner:

No. 1.—The manure was spread over the ground previous to the first ploughing, and thor- oughly incorporated into the soil, in the course of the following operations. The third and last ploughing was laid up into lands four yards wide, sown and harrowed in, and immediately prop- erly water-furrowed.

No. 2.—The manure was drawn into the field in the month of March previous, and made into a large compost heap. The first, second, and third ploughings took place at the same period with No. 1, and after the third ploughing which was laid up into narrow lands as above, the ground was harrowed twice lengthwise, and ma- nured from the heap be ore mentioned. The fourth and last ploughing was performed in the same manner as if intended for drills for turnips, with this difference that instead of being twenty inches as is usual for turnips, the drills were only about fourteen inches asunder. The seed was then sown broad-cast, and harrowed in singly lengthwise, with a pair of light harrows, and wa- ter-furrowed. The plants came up nearly as reg- ular as if sown with a drilling machine.

No. 3.—Was managed in the same manner as No. 1, with this difference: The manure was taken from the compost heap above alluded to, and spread over the ground the day previous to the third and last ploughing. It was then mark- ed out into lands four yards wide, the seed sown on the manure, and both ploughed in, and after- wards harrowed lightly and water-furrowed.

No. 4.—Was managed in every respect as No. 3, with only this difference, that it was left rough and not touched after being ploughed in, which is the usual mode of covering wheat with the plough.

The result of these experiments was as follows —Parts of No. 1 were considerably winter-killed and slightly injured with the rust, and gave a return of about 25 bushels per acre of a middling sample.

No. 2 was not the least injured by being winter- killed or mowed, and the stem of the plant or straw stood up stiff and short like beanstalks, and gave a return of about 31 bushels per acre of a superior sample.

No. 3 gave a return very similar both to qual- ity and quantity as No. 1.

No. 4 did not yield more than 16 bushels per acre, and that of an inferior sample.

We account for the great difference between the 2nd and the 4th Div., in the following man- ner:—In the former, the wheat being covered a sufficient depth with finely pulverized soil, came up in a much less period of time than the latter, and the plants being in rows sheltered the roots, and they naturally being interwoven together, were not so easily displaced by the thawings and freezings in the spring; but the greatest advan- tage belonging to the plan is less liability to mil- dew, and grows much shorter and stiffer in the straw, which is a clear proof, in our opinion, how important it is to those farmers who are engaged largely in the culture of wheat, of introducing drilling machines.

No. 4 which was left rough and gave so inferi- or a crop, would have yielded a much heavier re- turn, had it been sown ten days earlier. At the best, it is a plan we have always been decidedly opposed to, for the simple reason that the surface must be more or less covered with receptacles for surface water, which has a tendency to destroy the plant. If any of our readers, who practice this system, are not satisfied as to the validity of our assertion, we advise them to examine their fields thus sown in the latter end of the month of November, or soon after the equinoctial rains, which most generally take place about that time; and if the space between the furrows are not fill- ed with water, which must have a pernicious in- fluence upon the health of the plant at that in- clement season of the year, then of course we must charge the result to some other cause with which we are at present unacquainted.

In order to have carried our experiment No. 2, to a still greater perfection, we purposed to have made a small sized scuffler or horse hoe, and cleaned the ground of all noxious weeds, in the first week in May, or as soon as the land might be sufficiently dry, but the plan was not acted upon. It is one which we conceive to be practicable, and attended with very little ex- pence. At some future period, we may try other expe- riments in the cultivation of wheat as well as other grains and roots, and give to our readers the re- sult and loss, and a detailed description of their management.

In the cultivation of wheat as well as other crops, no specific rule can be laid down, that would be applicable under every circumstance; the quality of the soil, the peculiar state in which the land may be found previous to commencing the operation, and the changes of the seasons, all contribute to influence the management; but upon one point we may safely centre, that the land should be in good health, and that it requires clean and frequent ploughing.

The quantity of cattle in various European countries has been estimated to be as follows:—

	CATTLE.
Great Britain.....	5,100,000
Russia.....	19,000,000
Netherlands.....	2,500,000
Denmark.....	1,600,000
Austria.....	9,910,000
France.....	6,681,800
Spain.....	2,500,000
Portugal.....	750,000
Italy.....	3,000,000

ROAD MAKING.

We may expect that our District Councils, organized throughout Canada, may do much in the way of Road-Making, that is so very necessary to the general improvement of the country. In every case where money is to be expended in constructing Roads, careful surveys should be made of several lines, by competent persons, in order to the selection of that line, which, in comparison, appears to have the preponderance of desirable qualities for the public convenience. We cannot expect to have stone Roads made immediately, throughout every Concession in the Province; but, where the main roads that could give accommodation to a large number of Farmers, may be constructed and covered with stone or other hard mettle, it is very desirable that the line of these Roads should be the most convenient, and as much as possible, combine the qualities of straightness and level; the line of direction; and line of draught being very carefully adjusted to each other. We have seen an excellent article on this subject in the "Penny Cyclopaedia," now being published, and beg to copy a few paragraphs from it:—

"It seems to be the prevailing opinion with modern engineers, that the line of direction of roads, has not generally been made as subordinate as it should be to the line of draught; and it will be well to remember in laying out a new road, that while the effect of gravity must ever remain the same, the resistance occasioned by imperfections in the road, and carriages will be reduced by every prospective improvement in their construction thereby increasing the *proportionate* effects of gravity, and making the line of direction still more subordinate to that of draught, or, in other words, increasing the length of level that may be traversed with the same expenditure of power as would raise the load up as given elevation. Curves increase the resistance to the motion of carriages, and add to the risk of accidents; but, if slight, they increase the length of the road much less than might be supposed. Edgworth, in his Essay on the construction of Roads and carriages; says "a road ten miles long, and perfectly straight, can scarcely be found, and if it were curved, so as to prevent the eye from seeing further than a quarter of a mile of it in any one place, the whole road would not be lengthened more than one hundred and fifty yards.

However desirable a perfect level may be in theory, a road with moderate inclinations as of 1 in 100, is found to be preferable in practice, because without such a shape it is difficult to get rid of water fast enough, unless the road be raised a few feet above the surrounding land, and thereby exposed to the free action of sun and wind. Slight undulations are also considered by most authors to be desirable in all cases where animal labour is employed, the amount of exertion being considered favourable to the horses. On this principle it is recommended that where an undulating road is reduced to a uniform gradient, occasional levels should be introduced to ease the draught. Any inclination exceeding the angle of repose, or that beyond which a carriage would roll down by its own gravity, occasions a loss of power; but all below it are attended with a compensating effect when the traffic in both directions is taken into account, the advantage gained by descending carriages being equal to the additional labor required in the ascent. This angle has been stated by Larnen, to be about 1 in 40, with

a good carriage upon a broken stone road of the best quality. A greater slope not only occasions much additional resistance in the ascent; but, by rendering it unsafe to drive down at full speed, causes a loss of time in the descent also. The following table shows the effect of various inclinations in increasing the draught of a Stage-Coach at different velocities on the same description of road as indicated by a dynamometer contrived by Mr. MacNiell for experiments on the draught of carriages. This useful instrument is mounted in a light Phaeton, and, besides marking the draught at every ten or twenty yards, points out the distance run, and rates of acclivity or declivity on every part of the road:—

FORCE REQUIRED AT			
Inclination	Gmte pr. hour	8 m. pr. hour.	10 m. p. hr
1 in 20	262 lbs*	206 lbs.	318 lbs.
1 " 20	213 "	210 "	225 "
1 " 30	165 "	196 "	200 "
1 " 40	140 "	186 "	172 "
1 " 600	111 "	120 "	123 "

It should always be borne in mind that the occurrence of one steep hill on a line of road, affects the working of the whole line, as the number of horses required for ascending it must be used, although a portion of their power may be unemployed on the greater part of the road. The inconvenience of a steep inclination where unavoidable, may be diminished by laying a stone tramway for the use of ascending vehicles; a measure which has been adopted with success on the Holyhead road, where, on a slope of about 1 in 20, the power required to draw a ton has been reduced by this means from 294 lbs. to 132 lbs.

In arranging the works necessary for obtaining the required level, the preference should be given to embankments, and, wherever it is practicable the bed of the road should be elevated two feet above the natural level; for the sake of efficient drainage. Deep ditches should be cut for the efficient drainage of the road, which is of paramount importance; and these should be on the field side of the fences. They should extend to a depth of from two feet six inches to four feet below the bed of the road, according to the nature of the ground.

The effect of a paved or concrete foundation in diminishing the draught, appears, from the subjoined statement, founded on experiments with Mr. MacNiell's road indicated, to be very great; but a more extensive series of trials is desirable for a comparison of different systems under various circumstances. The draught of a waggon weighing about 21 cwt, was found as follows:—

- On a well made pavement, 33 lbs.
- On a road with six inches of hard broken stone on a rough pavement, 41 "
- On a similar road, with a foundation of Roman cement and gravel in lieu of pavement, 46 "
- On a road with a thick coating of broken stone on earth, 65 "
- On a road with a thick coating of gravel on earth. 147 ".

It may not be generally known in Canada, that McAdam used no broken stone in the construction of roads that exceeded six ounces weight and always preferred those that only weighed one ounce. It would be well that the same rule was adopted in making roads here. The drainage of roads made lately in this country, is also very imperfect the outlets from the side drains are not attended to in many instances, and, of course, those drains must be useless, if they have

not sufficient outlets, constantly kept in perfect order. The drainage of our new roads would be the most useful part of the expenditure, because, without this they cannot be preserved in good repair without vast expense.

We have introduced this subject as Farmers are greatly interested in good roads and will have to pay a large proportion of the expense of maintaining them. We would request particular attention to what is said in the part of this article which we have copied, referring to the construction of roads over high hills—in all cases where it is possible high hills should be avoided, as they cannot fail to be a great draw back on a public road that is much travelled upon. If high hills that to be ascended and descended in a few miles of road, it prevents the transport of heavy loads, and is a great waste of time and labour; it is also very difficult to keep steep ascents in repair, in consequence of floods we are liable to in this country. We shall refer to this subject again.

LIEBIG'S CHEMISTRY OF AGRICULTURE.

The development of the stem, leaves, blossoms, and fruit of plants is dependent on certain conditions, the knowledge of which enables us to exercise some influence on their internal constituents as well as on their size. It is the duty of the natural philosopher to discover what these conditions are: for the fundamental principles of Agriculture must be based on a knowledge of them. There is no profession which can be compared in importance with that of Agriculture, for to it belongs the production of food for man and beast; on it depends the welfare & development of the whole human species, the riches of States, and all commerce. There is no other profession in which the application of correct principles is productive of more beneficial effects, or of greater and more decided influence, hence it appears quite unaccountable that we do not vainly search for one leading principle in the writings of Agriculturalists and vegetable Physiologists.

The methods employed in the cultivation of land, are different in every country, and in every District: and when we require the cause of these differences, we receive the answer that they depend upon circumstances. No answer could show ignorance more plainly, since no one has ever yet devoted himself to ascertain what these circumstances are. Thus also when we enquire what manner manure acts, we are answered by the most intelligent men that its action is covered by a veil of Isis; and when we demand further what this means, we discover rarely that the excrements of men & animals are supposed to contain an incomprehensible something, which assists in the nutrition of plants, and increases their size. This opinion is embraced without ever an attempt being made to discover the composition of manure, or to become acquainted with its nature.

In addition to the general conditions, such as heat, light, moisture, and the component parts of the atmosphere, which are necessary for the growth of plants, certain substances are found to exercise a peculiar influence on the development of particular families. These substances either are always contained in the soil, or are supplied to it in the form of the matters known under the general name of manure. But what does it

said contain, and what are the components of the substances used as manure? Until these points are satisfactorily determined, a rational system of Agriculture cannot exist. The power and knowledge of the physiologist, of the Agriculturalist, and Chemist, must be united for the complete solution of these questions; and, in order to attain this end, a commencement must be made.

The general object of agriculture is to produce in the most advantageous manner certain qualities, or a maximum size, in certain parts or organs of particular plants. Now, this object can be attained only by the application of those substances which we know to be indispensable to the development of these parts or organs, or by supplying the conditions necessary to the production of the qualities desired.

The rules of a rational system of agriculture, should enable us, therefore, to give each plant that which it requires for the attainment of the object in view.

The special object of agriculture is to obtain an abnormal development and production of certain parts of plants, or of certain vegetable matters, which are employed as food for man and animals, or for the purpose of industry. The means employed for effecting these two purposes are very different. Thus the mode of culture, employed for the purpose of procuring fine pliable straw for Florentine hats, is the very opposite of that which must be adopted in order to produce a maximum of corn from the same plant. Peculiar methods must be used for the production of nitrogen in the seeds, others for giving strength and solidity to the straw, and others, again must be followed when we wish to give such strength and solidity to the straw as will enable it to bear the weight of the ears.

We must proceed in the culture of plants in precisely the same manner as we do in the fattening of animals. The flesh of the Stag and Koo, or of wild animals in general is quite devoid of fat, like the muscular flesh of the Arab, or it contains only small quantities of it. The production of flesh and fat may be artificially increased; all domestic animals for example, contain much fat. We give food to animals, which increase the activity of certain organs, and is itself capable of being transformed into fat. We add to the quantity of food, or we lessen the process of respiration and perspiration by preventing motion. The condition necessary to effect this purpose in birds, are different from those in quadrupeds; and it is well known that charcoal powder produces such an excessive growth of the liver of a goose, as at length causes the death of the animal.

The increase or diminution of the vital activity of vegetables, depends only on heat and solar light, which we have not arbitrarily at our disposal; all that we can do is to supply those substances which are adapted for assimilation by the power already present in the organs of the plant. But what then are the substances? They may easily be detected by the examination of a soil, which is always fertile in given cosmical and atmospheric conditions; for it is evident, that the knowledge of its state and composition must enable us to discover the circumstances under which a sterile soil may be rendered fertile. It is the duty of the chemist to explain the composition of a fertile soil but the discovery of its proper state or condition, belongs to the agriculturalist; our present business lies only with the former."

Again, the same author observes:—

"Experience has shown in agriculture, that wheat should not be cultivated after wheat on the same soil, for it belongs, with tobacco to the plants which exhaust a soil. But if the humours of a soil gives it the pow-

er of producing corn, how happens it that wheat does not thrive in many parts of Brazil, where the soils are particularly rich in this substance, or in our own climate, in soils formed of mouldered wood, that its stalks under these circumstances, attains no strength, and droops prematurely? The cause is this, that the strength of the stalk is due to silicate of potash, and that the corn requires phosphate of magnesia, neither of which substances a soil of humus can afford since it does not contain them; the plant may, indeed, under such circumstances, become an herb, but will not bear good fruit.

Again, how does it happen that wheat does not flourish on a sandy soil, and that a calcareous soil is also unsuitable for its growth, unless of clay? It is because these soils do not contain alkalis in sufficient quantity, the growth of wheat being arrested by this circumstance even should all other substances be present in abundance.

It is not mere accident that trees of the fir tribe grow on the sand stone and limestone of the Carpathian mountains and the Java, whilst we find on soils of gneiss, mica slate, and granite in Bavaria, of clinkstone on the Rhone, of basalt in Vogelsberge, and of clay—slate on the Rhine and Eitel, the finest forests of other trees, which cannot be produced on the sandy or calcareous soils upon which pines thrive. It is explained by the fact that trees, the leaves of which are renewed annually, requires for their leaves six or ten times more alkalies than the fir-tree or pine, and hence when they are placed in soils in which alkalies are contained in very small quantity, do not attain maturity. When we see such trees growing on a sandy or calcareous soil—the red-beech, the service-tree, and the wild-cherry for example, thriving luxuriantly on limestone, we may be assured that alkalies are present in the soil, for they are necessary to their existence. Can we, then, regard it as remarkable that such trees should thrive in America, on those spots on which forests of pines which have grown and collected alkalies for centuries, have been burnt and to which the alkalies are thus at once restored.

Wheat will not grow in a soil which has produced wormwood, and, *vice versa*, wormwood does not thrive where wheat has grown, because they are mutually prejudicial by appropriating the alkalies of the soil.

One hundred parts of the stalks of wheat yield 15½ parts of ashes; the same quantity of stalks of barley 8½ parts; and one hundred parts of the stalks of oats, only 4½; the ashes of all these are of the same composition."

We have in these facts, a clear proof of what plants require for their growth. Upon the same field which will yield only one harvest of wheat.

The fallow-time, is that period of culture during which land is exposed to a progressive disintegration, by means of the influence of the atmosphere, for the purpose of rendering a certain quantity of alkalies capable of being appropriated by plants.

Now, it is evident that the careful tilling of fallow-land, must increase and accelerate the disintegration. Many plants in the family of the *Leguminosae* are remarkable on account of the small quantity of alkalies or salts in general, which they contain; the Windsor bean, for example, contains no free alkalies, and not one per cent. of the phosphates of lime and magnesia. The bean of the kidney-bean only ½ per cent., that of the lentil ¼ per cent. of phosphate of lime with albumen. Buck-wheat dried in the sun, yields only about ¼ per cent. of ashes, of which, a small part are soluble salts. These plants belong to those which are termed fallow-crops, and the cause wherefore they do not exercise any injurious influence on

corn which is cultivated immediately after them is, that they do not extract the alkalies of the soil and only a very small quantity of phosphates."

(To be Continued).

We have always thought it bad management for Farmers, to sell any part of the wood-ashes made upon their farms, either in the field or in the house. There cannot exist a doubt, that wood-ashes is the most valuable manure that can be made upon a farm. In clearing new land, the produce of the soil for centuries, is cut down, burned, and the ashes produced from this burning converted into potash and sold. It does not require any argument, to prove that this must be robbing the soil of its most valuable qualities, and the ingredients that are essentially necessary to its producing subsequently, profitable crops of wheat or other grain. From our own experience, we are persuaded that wood-ashes are much better adapted to the production of wheat, than farm-yard manure. The latter may produce a crop of wheat that will have a luxuriant appearance but the straw will not be strong, and it will be more liable to disease, than a crop of wheat grown on land dressed with wood-ashes, or lime of alkalies are essentially necessary to be present in sufficient quantity in soils, that they may produce profitable crops of wheat. Who is it that takes the trouble in preparing land for wheat, to ascertain the composition of the soil, or to impart to it, the qualities that are required to cause it to grow a good crop of wheat. We have abundance of the most suitable soil for wheat, in this country, if it was only managed as land is in England. But we act here, as if we expected that the soil should produce good crops, without any regard to their cultivation by a proper system. When we prepare our soil as they do in England, we may expect such crops as they raise in that country, only then can we have good crops of wheat.

THE CHEMICAL CONSTITUTION OF PLANTS.—Most of our readers are aware that the greater part of all vegetables, consists of but four elements, viz:—carbon, hydrogen, oxygen, and nitrogen; very often of the first three alone; while the remainder is composed of certain saline, earthy, and metallic compounds, which form the ashes that remain when vegetables are burned. The former are called the organic, the latter the inorganic elements of plants. Professor Liebig has demonstrated that the latter, although occurring in very small quantity are yet essential to the development of the plant as the former; and it is obvious that the first enquiry, in such work as his, must be as to the sources from which all these necessary constituents are derived, and the best means of supplying them. With regard to the carbon of plants, the general opinion of writers on vegetable physiology, and of practical agriculturists, attributes its origin to the substance called humus, or vegetable mould, which is present in all fertile soils, and which is merely the remains of former vegetables in a state of decay. This substance either alone or in combination with lime, or other alkalies, is believed to be absorbed by the roots, and thus directly to furnish carbon for the plant. But this view has been shown by M. Liebig to be quite untenable,

and he has demonstrated, by a most ingenious convincing train of argument, that the carbon of plants is derived from the carbonic acid of the atmosphere. In the economy of nature, the supply of carbon to plants is beautifully associated with the restoration to the atmosphere of the oxygen removed from it by the respiration of animals and other processes, and thus preserves the air constantly in the same state of fitness for the life of animals.—*Quarterly Review.*

CANADA TRADE—IMPORTANT FACTS.—

The Montreal Courier has a letter showing that the rates of toll by the Rideau Canal, are this year raised from about one cent, to more than four cents a mile, on the average! The Trade between Montreal and the Upper Lakes will be greatly injured by this heavy addition to the expense of transit.

Last year, Port Stanley, on Lake Erie, and two other shipping places a few miles from it, exported 86,030 bushels of wheat, 2000 bbls. of flour, and 1100 barrels of pork, and imported 51000 barrels of salt, and 3000 tons of merchandise. Twenty years ago there were scarcely 500 bushels exported at these places.

Last year there were transported through the Welland Canal, from the United States to United States ports, 946,142 bushels of wheat, and 11,200 barrels of flour, and from the United States to Canadian ports, 80,951 bbls. of flour, 22,304 barrels of pork, and 367,261 bushels of wheat—also from Canadian ports on Lake Ontario, 120,893 bbls. of flour, 514 barrels of pork, and 260,931 bushels of wheat. These facts respecting the Welland Canal, are new to most people, and they will be interesting to most readers.—*Rochester Etc. Post.*

[ENGLISH AGRICULTURE; a glance at its progress and prospects—by John Hannam, North Daigton, Wetherby, Yorkshire, England.]

We have before alluded to this treatise contained in the "Transactions of the New York State Agricultural Society for the year 1811," and shall commence its publication in our columns next week. We have read it several times, and always with increased interest, and commend it to the reader as being a paper of great power and research. The writer handles every subject which he touches, with the hand of a master, and evinces a degree of knowledge seldom to be met with, not only of the history of British husbandry, in its rise and progress, but of the science of agriculture itself. He unfolds, in his opening paragraphs, the importance of agriculture to the support of man in his social and civilized relation, as well in regard to his individual as to his natural condition. And follows up his reasoning by a historical account of the husbandry of Britain, from the period of the invasion by the Romans, to the date of his essay, in December, last. Though this view, as given in a paper of the kind, is necessarily cursory and hurried, it is, nevertheless sufficiently ample to impress the reader with a just conception of its condition throughout the various epochs which he so strikingly illustrates; and we think it will be found to be impossible for any reader to arise from its perusal, without being deeply impressed with the superior powers of condensation and analysis possessed by the writer.

He shows with clearness, that at the period of the Roman invasion, the use of the same animal vegetable and mineral manures as are now, were then employed in the melioration of the soil; and that the value of composts, carbonaceous matter, top-dressings, and the turning in of green crops,

were properly esteemed; that the advantages of good ploughing and tilage, and of draining, was understood; that the care of live stock received attention, and that all these interesting matters were endeavoured to be enforced by the precepts and examples of the invaders. But that, notwithstanding these efforts to promote the interests of the invaded, English husbandry remained almost stationary for a thousand years after the period of the invasion, and that it was not until after the commencement of the sixteenth century, that improvement began sensibly to be developed. As a singular instance of the intractability of the ancient Britons, it may be mentioned, that although the Romans at the period of their invasion cultivated the artificial grasses, it was not until the seventeenth century that their culture was adopted in England. The consequence of this contumacy was, that, as there was no fodder to be had but such as grew on the natural meadows, the cattle literally starved upon the hungry common during winter, and the enclosed land, owing to no manure being made, grew less and less productive, so that the cattle were with great difficulty kept alive, and were in numerous instances killed to keep them from dying of starvation. This is a frightful picture of British husbandry in the seventeenth century, but frightful as it is it should not be without its use, in teaching those who rely upon the marsh and corn-field in our own country, to sustain their stock through winter, the necessity of resorting to the cultivation of artificial grasses, as the only means of effecting that object in comfort to their beasts and credit to themselves.

Up to the seventeenth century, it appears from Mr. Hannam's statement; that the variety of crops in England were very limited, chiefly consisting of oats, barley, rye and peas—wheat being very little grown, and that the latter, as late as the period named was a luxury confined almost exclusively to the tables of the nobility.

From the cause before assigned—the scarcity of provender—cattle were consequently very scarce, and the evil of neglecting the raising of cattle became at last so manifest, that in 1533, it was provided by statute, that no man should keep more than 2400 head of sheep; and in 1555, such had become the rage for raising sheep, and consequently the neglect of cattle, that another act was passed, ordaining that whoever kept 60 sheep should keep a cow, and whenever the number amounted to 120, that a calf should be bred.

The condition of the British farmer, up to, and throughout the sixteenth century, was that of an humble plodding labourer, while that of his wife was still worse, as among her other vocations was that of helping her husband to fill the dung cart.

This condition of degradation continued until about the middle of the seventeenth century when a perceptible change began to creep over the spirit of British husbandry.

Mr. Hannam next traces the probable causes which operated to repress the spirit of improvement, and then points out the era at which improvement commenced; he dates it from the middle of the seventeenth century—the Elizabethan age. At that period, he says, the mind of man appears to have received a general stimulus, the effect of which is manifest in every branch of human knowledge. But although agriculture soon after this appears to have shown marks of improvement, it was not until a much later period, in the eighteenth century, when modern science, having thrown off the shackles of ancient prejudices, lent to agriculture its vivifying influence.

After noticing the appearance of the first British writers upon husbandry—Fitzherbert, Tusser, and Plott, in 1652, he shows that the triumph of the modern spirit of melioration did not become fully developed till the bold views of Tull, in 1710, gave the finish to the new system of cropping, which arose from the growth of clover and turnips—thus proved a lasting impulse to the onward march of the principle that had produced the change. In the practical labors of Bakewell and Cully, assisted by the enlightened endeavors of such men as Lord Kames, to improve agriculture by subjecting it to the test of rational principles, he maintains that we see the continued improvement of the new-born spirit of progress; and in the present position of English agriculture, the results of that operation. The nature of this position is to be found in its present elevated standing and high estimation as a science, which have secured to it, within the last fifteen years, the labors of such men as Davy, Sinclair, Daubenc, Herston, Johnston, Loudon, Luce, Stephens, Johnson, and Madden, the aid of professors of the British Universities, and the united efforts of more than 300 societies, composed of the first men in the kingdom.

The chief end of melioration is to be found in the change from the old in-field and out-field system, the alternate crop and fallow, or two crops and a fallow, to the enlightened drill husbandry and rotation of crops.

The eminent utility and marked advantage of root crops, drainage and sub-soil ploughing, are dwelt upon with peculiar propriety; while the meliorating effects of the turnip and clover culture upon light soils, are pointed out with great force. In illustration of the justness of his views, he shows that lands which 50 years ago only brought 5 shillings an acre, by means of the present system of culture, and the feeding of sheep, now produce 25 shillings per acre, being an advance of 400 per cent, and he affirms that the produce has increased in a still greater ratio than the rent. Besides this, other instances of similar improvement in value are given, going to prove beyond all cavil or doubt, that the interest of the husbandman, whether landlord or tenant, is uniformly promoted by outlays in judicious improvements of the soil.

The remarks of Mr. Hannam on the various manures used, the modes and economy practised in their accumulation and preservation; those on the improvement in agricultural implements and stock, and the superior attention now paid to the latter, are all highly judicious and will command consideration.

As among the most prominent means used in effecting those permanent improvements in British husbandry, of which Mr. H. speaks, are draining, irrigation, warping, and sub-soil ploughing. He shows that by the free resort to these means, and the proper application of mineral, animal, vegetable, and other manures, millions of acres of land, which, fifty years ago were stagnant marshes, wholly unproductive, are now luxuriant pastures; that Chatmoor, which, only 22 years ago, was a frightful yawning morass, has, by such means, been converted into golden corn-fields (wheat-fields) studded and beautified by delightful villas.

Indeed, the whole scope and length and breadth of the admirable paper of Mr. Hannam, teems with facts and deductions, as instructive as they are interesting, and will not, we sincerely hope, fail to infuse into the mind of the American reader, a wholesome spirit of improvement; for, while they will show him that within less than a quarter of a century, the amount and value of agricultural products in England have been

enhanced several hundred per cent. they will teach him to believe, that what has been done there, may be achieved here.—*American Farmer.*

The following "words of exhortation," which we clip from the conclusion of a homily on "Hard Times," in the Springfield Republican, is, in our judgment, excellent:

"We have a word for debtors who are pushed to the wall. Let them not be discouraged—let them not be overcome by despondency. Hope, like truth, lies at the bottom of the deepest well. On the ashes of a burnt dwelling may be laid the foundation of a new building. The darkest hour is just before the break of day. After the night comes the morning. If a man stumble and fall not, he is holpen on his journey. Keep a clear conscience. Be honest in spite of temptation. Keep up your spirits, not by pouring spirits down, but by doing all that within you lieth, for yourself and yours; leaving the result to the hand that moves the world. Above all, meet your creditors with your sleeves rolled up, not for fighting, but for hard work. Mind all these hints, and you'll be the happier now, and the better off hereafter."

"A whole chapter to creditors: *Do as you would be done by.*"

A MOTHER.—The following beautiful passage, as true as it is beautiful, is from Mr. James's last novel, "The Gipsy." "Round the idea of one's mother, the mind of a man clings with a fond affection. It is the first deep thought stamped upon our infant hearts when yet soft and capable of receiving the most profound impressions, and all the after feelings of the world are more or less light in comparison. I do not know that even in our old age we do not look back to that feeling as the sweetest we have through life.—Our passions and our wilfulness may lead us far from the object of our filial love; we may learn even to pain her heart; to oppose her wishes, to violate her commands; we may become wild, headstrong, and angry at her counsels or opposition; but when death has stilled her monitory voice, and nothing but calm memory remains to recapitulate her good deeds, affection like a flower beaten to the ground by a past storm raises up her head and smiles amongst her tears. Round that idea, as we have said, the mind clings with fond affection; and even when the earlier period of our loss forces memory to be silent, fancy takes the place of remembrance and twines the image of our dead parent with a garland of graces, and beauties, and virtues, which we doubt not that she possessed."

THE TORONTO LUNATIC ASYLUM.

The establishment of this Institution, is, in our humble opinion, one of the most humane and praiseworthy enactments, that ever came under the notice of our Government and Legislature. The necessity of such an institution is apparent, from the beneficial results already attained. It is less than twelve months, since it first went into operation, and has, at present, 46 patients, male and female, besides a large number that have been discharged, who were quite recovered of their maniacal disease, through the kind attention of the Governor of the institute, and the acknowledged skill of the attendant Physician.

As it is, yet in its infancy, and as the building now occupied for the purpose, is only temporary, although very comfortable, and as no grounds have been, as yet, selected for the site; we beg to make a few suggestions on the subject, which may be of some service in its future management.

We conceive, that were the patients employed in agricultural and horticultural operations, the advantages would be of three-fold. It would be the means of giving occupation and gratification to that portion of them who would voluntarily labour in the field; it would lessen the expenses for food to the large number supported at the establishment, and would be the means of bringing into cultivation, heretofore unproductive grounds, of which we have an abundance in the immediate neighbourhood east of this City; which would afford an example of what might be produced from comparatively barren or sandy land. The labour of the inmates should, of course, be quite voluntary, or obtained by persuasive means, and we have no doubt, that some of the most difficult patients would be found amongst the most useful on the farm.

We have it from highly respectable authority, that His Excellency Sir Charles Bagot takes great interest in the science and practice of agriculture, and there can be no doubt that a plan combining as above, his favourite science, with the interests of a class of beings for whom our sympathies are particularly demanded—would meet his approbation and support.

Some of our readers may consider the subject visionary and impracticable. To these, we would remark, that we have for our authority, an abundance of established precedents. The one to which we would at present call their attention, is that of an institution established nine years since in the Town of Worcester, State of Massachusetts, and as a proof of its success, we give below the amount of produce raised in the year 1811, from 80 acres of reclaimed swamp and barren rocky up-land. The swamp was brought into a fit state for cultivation, by sinking large ditches, to carry off the water, and, by filling them up nearly to the surface, with the stones from the land above alluded to, by which means the up-lands were cleared from stones, and the deep morass brought into valuable meadow grounds.

The following was the produce of the farm attached to the Worcester Asylum, for the year above mentioned, with the value of each commodity and the sum total:—

26 tons of hay, at \$15 00,	390.00
153 bushels of corn, at \$1.00	153.00
240 do potatoes, at 30 cents	72.00
500 do carrots, at 25 do.,	107.50
70 do parsnips, at 2s.,	23.33
23 do oats, at 55 cents,	12.65
60 do onions, at 50 do.,	30.00
70 do English turneps, at	15.50
15 do ruta baga, at 25 do.	3.75
11 loads of pumpkins, at \$1.50.	16.50
20 cwt. winter squashes, at \$1.50.	30.00

510 cabbages, at 5 cents each,	27.00
1 load of melons,	10.00
5 barrels of pickles,	15.00
Garden Vegetables for a family of 300 persons,	150.00
Corn fodder and straw,	15.00
Pasturing 8 cows 23 weeks,	104.00
do 2 oxen do,	32.50
Milk from the cows, 23,330 quarts at 43 cents,	10,118.50
6,193 lbs. of Pork, at 6 d.,	375.166
Small pigs sold,	335.50
250 lbs. of poultry raised,	25.00
	\$3,901.46

The costs of keeping the cows through the year is estimated at \$75.00 each, which, for the 8 cows, is \$600.00; this sum deducted from the milk as it costs, if purchased, leaves a profit on the cows of \$584.85.

There is nothing in the above account inconsistent, and could not a similar result be attained here, by judicious management?

USEFUL RECEIPTS.

REMEDY FOR SWAINS, BRUISES, &c.—Mix one pint of soft soap; a pint of good vinegar; a handful of common salt, and a table-spoonful of powdered nitre together; put them into a common white basin, and batho the part affected. A few applications of this mixture, will be found effectual, either on man or horse.

TO CURE HEAVES IN HORSES.—Put a tea-spoonful of ground Plaster daily, in the feed of the horse.

Another.—Found up the roots of Slunk Cabbage, and give with the feed.

Another.—When all other means fail of effecting a cure, take a quantity of angle worms, and fasten them to the bits of the horse with a rag, made secure at each end of the bits. Then pour a little of the spirits of Turpentine upon the above arranged preparation, and let this be renewed once in two or three weeks; in which case it is claimed the usefulness of the animal will not be diminished by the heaves.

HOW TO SAVE THEM FROM FIRE.—A writer in the Philadelphia Ledger says that in case of stables catching fire, when horses are therein, if any part of their harness is put on they will suffer themselves to be led, without the least resistance. The publishing of this may be useful. The editor of that paper, however, says that success will depend much upon the manner of the person attempting the experiment. If he be frightful, and exhibit evidence of the fact by a hurried and confused or otherwise very unusual mode of procedure, it will be noticed by the horse, and instead of allaying his fears will but increase them, and add to the difficulty of removing him.

CUCUMBERS.—As soon as the Cucumbers begin to start, and the striped bug begins to eat the leaves, go and pick a handful of Tansy, and lay two or three spears around in each hill, and the bugs will soon move to other quarters, and will not trouble you any more. Hoe the cucumber three or four times, as necessity requires. Try this manner of procedure and reap your rich reward.—*Gen. Farmer.*

TO REMOVE GREASE SPOTS ON WOOLLEN CLOTH.—Use Spirits of Turpentine, it dissolves the grease, and then the soap more easily removes it. Grease may be removed from undyed woollen, by a solution of pearl ash.

THE ADVANTAGES OF RAIL-WAYS TO AGRICULTURE.

(From *The Mark Lane Express*).

The rail-way in many important respects is preferable even to water carriage. The lands near the banks of navigable rivers are generally the most naturally fertile of all the soils a farmer has to cultivate; they usually abound with animal and vegetable matters, and contain such a mixture of the alluvial deposits, washed down from the upland in the course of ages by the flood waters, that it does not often occur that the addition of any earthy manure is deemed serviceable by the farmer; the chalks, ashes, or other mineral fertilizers, therefore, which he brings by water carriage, are usually afterwards carted, at a great expense, a considerable distance on to the uplands, to supply some essential fertilizing ingredient of which the soil is naturally deficient. A rail-way, on the contrary is not confined to low grounds, passed as such is possible over upland districts, and unites together different strata of the earth, which no flood-waters or rivers could otherwise bring together, in a manner profitable to the farmer.— For the disposal of a farmer's produce, the quickness and regularity of the rail-way, in all states of the weather, renders it incomparably superior to water carriage; unlike a canal, a rail-way is never rendered impassable by ice, an interruption which occurs in weather above all others most favourable for getting manure upon the land. The importance of effecting an extensive and general interchange of soils, for the purpose of rendering them more fertile, has hitherto been almost universally retarded, from the want of a sufficient means of reasonable conveyance; for, otherwise, the farmers of England are so generally aware of the advantage of the use of mineral fertilizers, that they have invariably seized every possible opportunity of profitably employing them.— "The best natural soils (says the illustrious Davy) are those of which the materials have been derived from different strata, which have been minutely divided by air and water, and are intimately blended together, and in improving soils artificially the farmer cannot do better than imitate the processes of nature. The materials necessary for the purpose are seldom far distant: coarse sand is often found immediately on chalk; and beds of sand and gravel are common below clay; the labour of improving the texture or constitution of the soil is repaid by a great permanent advantage; less manure is required, and its fertility insured, and capital laid out in this way secures forever the productiveness, and consequently the value of the land." Much of the meat which supplies the London market is produced in Essex, Norfolk, Suffolk, and Lincolnshire.— The cattle are slowly driven up, being often a fortnight on the road, attended by respectable and well paid drovers. They are fed at considerable expense on their way to market with the best food, since a stall fed beast is naturally, when taken away from the Swedish turnips, mangel wurtzel, and oil-cake, possessed of rather a fastidious appetite, which travelling in his fed state, does not tend to improve: he becomes overheated, refuses his food, and rapidly decreases in weight. I have been told by some of the farmers of Norfolk, that even fat bullocks they send to London, costs them in this way, not less than three guineas; and one of the tenants of the Holkham estate assured me that he has often upon following his bullocks to London, when shown them in Smithfield market, doubted their identity, so completely were they altered in their appearance. The miseries of such a

mode of conveyance will now be speedily rendered in a great degree unnecessary by the completion of the Eastern Counties Rail-way, an undertaking against which many profoundly absurd prejudices have been till recently entertained, but which will eventually not only be a highly lucrative undertaking, but be the greatest boon conferred in our days upon the agriculture of the east of England.

DIFFERENCE IN THE EFFECTS OF MACHINERY UPON AGRICULTURE AND MANUFACTURES.

It has been often observed, that while mechanical contrivance appears susceptible of application to an indefinite extent to manufacturing industry, it is hardly available in the cultivation of the earth. By superior skill in cultivation indeed, the produce which the same exertion of human strength can raise from the soil is greatly augmented, but the principal operations of husbandry still continue to be conducted by manual exertion. With the exception of the mashing-machine, which is not, strictly speaking, applied to the raising of food, but to its manufacture when raised, mechanical contrivance has done little to abridge the labour of man in agriculture. The fundamental operations of clearing, draining, manuring, ploughing, cleaning and reaping, are still performed by the human hand, and to all appearance, must always continue to be done so. The extent of the field on which agricultural labour must be performed prevents the application of the mechanical contrivance which is so powerful in manufactures, its uneven surface precludes the operation of the powers which are employed in navigation, or manufacturing machinery. The implements of husbandry may indeed, be improved, and the skill which directs them increased, but the power which wields them will never be different; and while the improvement of science and the extension of art is daily encroaching on the field of industry in the often-debasing employments of manufactures, the wide and healthful field of agricultural occupation remains for ever open to the industry of mankind.

The improvement of husbandry, indeed, has a directly opposite tendency from the growth of manufactures, and in the latter ages of society the number of persons employed in the cultivation of the earth is greater than in its earlier periods. Where agriculture has attained to a high degree of perfection, as in Flanders, Lombardy, and Tuscany, the value of land, and the great demand for its varied produce, leads to the rotation of crops, and the garden system of husbandry. The change augments immensely the number of persons engaged in its cultivation. It has been calculated, that at least, double the number of labourers are occupied on a farm of equal extent in the level fields of Brabant, or on the sunny slopes of the Apennines, from those deemed necessary in the best cultivated parts of Britain. The growth of agricultural wealth leads to the division of farms, the improvement of agricultural knowledge multiplies the number of crops which can be raised from the soil, the necessity for economizing both space and labour introduces the garden cultivation. By no possible contrivance can the same produce be raised from good land as by treating it as a kitchen garden with the spade and the hoe; and this is accordingly the method adopted in those countries where agriculture has been longest practiced with success, and is best understood; an extraordinary fact, indicating both the powerful law of nature which binds man to

his first and best employment, and the ample provision made for extending this delightful branch of industry in the later stages of society.

"The banks of the lake of Zurich," says Coxe, "for the density of the population, and the well being of the peasantry, are not surpassed by any spot on the habitable globe. In many places there is hardly an acre and a quarter to each individual." The sloping hills of the Pays de Vand are cultivated in small garden enclosures, and the comfort and opulence of the people excite the admiration of every traveller. In the rich plains of Flanders, equally as in the sunny slopes of Bearu, in the beautiful vale of the Arnc, not less than the terraced hills of Tuscany, the smiling aspect of the country, which resembles a great garden, and the happiness of the people, are alike conspicuous. It was for no light reason, therefore, that nature established this eternal distinction between the labour of the country and that of the town, and made the increase of wealth and the progress of civilization attended with constant restraints on the encouragement of labour from manufacturing, and constant increase to the demand for industry or agricultural employments; and the philosopher who contrasts the condition of mankind in a manufacturing city and a rural district, will feel additional gratitude for that beneficent law which, while it renders the progress of knowledge and the growth of opulence the means of checking the increase of the farmer, has opened a boundless field for the maintenance and employment of the human race in the progressive improvement of the latter—*Atison*.

POETRY.

AN ODE TO SPRING.

(From an *English Paper*).

I welcome thy coming,
Mild, beautiful Spring!
Thy flowers are in blossom,
The birds on the wing,
The sun, which stern winter
Long bound in its night,
Again re-illumines
The pathway of light.

The earth from its stupor
Is roused by THAT will,
Which clothed with newness
Forest, valley, and hill,
Creation rejoiceth
Over woodland and dell,
A melody floweth,
'Tis the chorister's swell.

The lake's gentle wave
Imperceptibly glides,
To mingle its waters
With ocean's dark sides.
The flowers on its margin
Bend light to the breeze,
New vigour bedecketh
The whispering trees.

Through aerial mansions
The clouds lightly roam,
Fringing the bound'ry
Of heav'n's spacious dome.
The gentle rains fall
To replenish the earth,
'Giving sustenance into
Each gem of new birth.

I welcome thy coming,
Mild, beautiful Spring!
Hore pictureth joy
'Mong the gifts thou mayest bring;
For if health be restored,
How my spirits will bound,
When contemplating nature,
'Mid her treasures profound.

W. H. Kimball.

HORTICULTURE.

Arrangements should have been made before now, for cropping the kitchen garden the ensuing summer, and a certain portion of ground allotted for each particular crop or crops. This would prevent much trouble and confusion throughout the summer. In all situations, and under all circumstances, it is highly recommendable to keep a cropping table and note the time of sowing, planting, and gathering, with remarks on each description of vegetable; this table would be of great value in pointing out the time of sowing in that particular locality, so as to have the crops come in at the time required.

We can testify the utility of a garden diary; but there is one consequence of such precision, which is not generally noticed, and this is the great knowledge of rotation, which an observant amateur may thus acquire, and now, at this season, it will be well to commence a system of cropping. We require chemical analysis of plants and soils, to certify our proceeding, but in the meantime, order and routine will do a good deal, while scientific research advances. As a slight assistance for the time, the following suggestions are offered:—

“Never sow peas twice in succession, unless some autumnal crop of broccoli has intervened—alternate freely with any of the cabbage family and with potatoes. The cabbage genius crop for most vegetables—sward-beans, and kidney-beans may follow it—and all the spindle-rooted plants, come in well after potatoes not manured—the ground should be sifted to the depth of six inches for such roots.—Onions like a deep and well manured soil.

If berry-bearing shrubs are not yet in leaf they should be regulated. Gooseberries do best on young wood, therefore, every bush should be so pruned as to retain a fair proportion of last year's shoots, and leave a balanced head, regularly arranged, cutting away a corresponding number of the old rough wood—spurs of two or three eyes may be left where, at the base of the small shoots, fruit is evidently formed; but the spurring system is not so suitable to this species, as to the currant, red and white; with these, it cannot be too rigidly practiced, observing to cut out all crowding shoots, and shorten the new wood at the summit of each retained shoot, to three or four eyes.

Black currant trees require neither spurring nor topping, but only to have old and ill placed wood cut quite away. Raspberries ought to have every retained rod shortened to a plump bud, just below the part where it takes a curve or bend; they then may be secured to stakes or trilles.

The first thing necessary to a garden, is, perfect drainage. Without drainage, unless the soil is very light, indeed, your garden will never prosper. Next to draining comes trenching—and trenching deeply—two or three spits deep, if the soil will admit. This, however, cannot of course be done in a year, but it may be done by degrees. A fresh surface is a matter of great importance in growing fine vegetables. Draining and trenching is even of more consequence than manuring, as those will find who try the experiment. Ashes—decayed vegetables left some time in a heap to rot—and mixed with a small quantity of lime—soap water of the wash-tub—scrapings of roads—scouring of ditches, &c., may all be made use of as manure. The different qualities of soil can be

improved by mixing with sand, bog earth, &c. It will greatly contribute to the excellence of the crops, that the surface of the earth be often moved with the spade or hoe while the plants are growing.”

We have copied part of the above from *The Mark Lane Express*, and in the future numbers of *THE CULTIVATOR*; we shall endeavour to give some information on the subject of Horticulture.

ON THE BREEDING OF CATTLE AND SHEEP.

The following letter on this subject we copy from *The Mark Lane Express*:—

“Many farmers consider as matter of indifference that on which the profitable nature of their occupation mainly depends.—The worse breed the female is, the more this will be the case when she is put to a well bred male. Now, it is known to graziers, that the attempt to fatten an animal who possesses no feeding propensities produces loss instead of profit. The feeding propensities descend from the sire, and therefore it is quite just to say, that a breeder of cattle or sheep, who considers it a matter of indifference what sort of a male animal he uses, does consider it a matter of indifference whether he gains profit or incur loss.

The first thing to be considered in the selection of a male, are the indications by which it may be possible to form a judgment as to his constitution. In all animals a wide chest indicates a strength of constitution, and there can be no doubt that this is the point of shape to which it is most material to any breeder to look, in the selection of either a bull or a ram. The animal also should exhibit great muscular power, or rather that his muscles should be large. This is a usual accompaniment of strength of constitution, but it likewise shows that there will be a good proportionate mixture of lean and fat in the meat produced by the animal; the muscles being that part of which the meat is lean. A thick neck is, both in bulis and rams, a proof of the muscles being large, and there can hardly be a greater fault in the shape of a male animal, of either sort, than his having a thin neck.

In a bull there ought to be a full muscle on each side of the back bone, just behind the top of the shoulder blades; he ought also to have the muscles on the outside of the thigh, and extending down nearly to the hough. It is sufficient to say, therefore, that no male animal is fit to be used at all as a sire, whose handling is not good, and that the more perfect his shape is the better.

A man can only look at the general qualities of females he possesses; and observe what are the faults most prevalent among them; these he should be particularly careful to avoid in the male which he intends to use. All that a man can do is to avoid putting a male and female together, whose imperfections are the same, thereby increasing the fault already existing in his stock. It need not be said that those who turn two or three rams of different shapes and quantities into a field with all their ewes, without attempting to make any selections among them, have no right to expect to be successful breeders, and if they do expect it, will certainly be disappointed.

There is one failing to which all breeders are liable, but to which the breeder of male animals, from the greater interest attached to his occupation is more particularly liable, and against which he ought most carefully to guard himself: this is, too great a partiality for animals bred by himself; and he ought frequently to use the stock belonging

to other breeders, and fairly compare its merits with those of his own.

It will be advisable for the agricultural society, to circulate by all means in their power, all suggestions as shall appear to them likely to be useful to those engaged in the cultivation of the breed in this district; and although it may not be able to accomplish much beyond the influence of its own members, yet let it be able to trace to this patriotic body the introduction of those improvements, which will tend to raise the character of Flintshire agriculture.

The last paragraph of the above letter is entitled to the attention of Agricultural Societies in British America. Here good can be effected by them; by circulating useful information and suggestions among farmers, than by cattle shows, where they held once a month. The greatest utility of such societies is to instruct those who require it, in a good system of practical husbandry. It is true, those who they would be anxious to instruct, may not benefit by their instructions. However this may be, it is only when they have used their best endeavours to accomplish this most desirable good, that they will have done their duty, and expended the funds committed to their charge to the best advantage, for the community who have contributed them.

PAPER MANUFACTURING MACHINE.

The London Mercantile Journal gives a description of a new machine invented by Mr. Rawson, destined to produce a mighty and complete revolution in the paper trade. From this statement, it appears that the paper, after being made and dried on the steam cylinder now in use, and wound on the reel, is then taken to the sizing machine, and passed under the roller which works in the size trough; it then passes through metal rollers, which take off the superfluous quantity, and wound on a reel at the end. The operation of size parting is simply performed by winding the paper when thus sized on to another reel. This operation is extremely beneficial to the paper, and conducted with great rapidity, ten reams being size parted in as many minutes. The paper is then passed on to the drying machine, which consists of a series of open drums with fans inside, moving at various speed, and fanning upon every part of the paper as it passes warm air, which absorbs the moisture in the size, and leaves the gelatine firmly attached to the paper. A twelve months continual working has demonstrated beyond all question the intrinsic worth of this invention, founded as it is upon the soundest principles, and carried out by the most beautiful, accurate machinery. Manufacturers, the most influential in Great Britain, have thoroughly tested it, and have not scrupled to admit that the principle must shortly be universally adopted by those manufacturers of machine-made papers who are desirous to maintain their position in the market.

TOMATOES CURE SCOURS IN PIGS.—This plant, the tomato, is generally at first disliked by many,—but it nevertheless is much cultivated and admired. Last fall, we had a pig that was taken with the scours badly. We tried various remedies for it with but little effect. One day we threw over to it two or three tomatoes which was readily, and which we found gave it relief. By following this course a few days it was finally cured.—Maine Farmer.

As it is in some parts of Germany a law to prevent drinking during Divine Service. It runs thus:—"Any person drinking in an ale house during Divine Service on Sunday or other Holy-Day, may legally depart without paying."



To the Editor of The British American Cultivator.

Sir,
A penny saved is a penny gained, this is an old saying and a true one, and if true in respect to individuals it is equally so to a community. He is a miserable farmer who is in possession of land sufficient with proper cultivation, to produce food and raiment enough for himself and family, and is, notwithstanding under the necessity of depending upon his neighbours for the necessaries of life. This is precisely the case with us as a community as it regards many articles which we require. I do not at this time purpose to enumerate them, but will confine my remarks to Hops. An article which might be cultivated with great profit by Canadian farmers, especially under the Tariff which passed the last Session of our Provincial Parliament. I am not prepared to state the exact sum of money which has been sent out of the province annually for the last number of years for this one article alone; but I saw a statement four years ago, that the amount then was upwards of £15,000. Hops can be raised in Canada as well as the United States, and to as great perfection; and should we only raise sufficient for our own consumption, it would be a means of retaining capital at home and encourage domestic industry and enterprise.

It is no wild theory to say, that should England grant us a free trade, which we have every reason to expect, should our Legislature act wisely on the subject, that hops would be a more profitable article for export than any of our present exports.

A farmer cultivating five acres of a hop garden, would require one additional labourer six months of the year to his establishment, and the cost of planting, curing, drying, &c. say £30. The average crop if properly managed would be 24 tons, which if sold at the low price of £5 per cwt would amount to £250. The average price for the last few years would exceed £6.5 per ton, so that we cannot be accused of making an exaggerated statement, and if the produce be not so great as that which I specify—the fault will rest with the cultivator. Most of those who have attempted to raise hops in Canada have made it a secondary object—and consequently cultivated their land in an inferior manner.

25 cwt per acre is frequently grown on large plantations in England, and hops grow more luxuriant and are a more certain crop in Canada than in that country.

It may be raised as an objection that few in this country understand the management of hops. There are sources where information may be had, besides those are dispersed in the province many Scotch men who are competent to manage a hop plantation, others would migrate if proper encouragement were given.

I am yours truly,

JOHN RITSON.

Whitby, April 15, 1842.

The above communication would have been inserted in the April number, but was unavoidably delayed.

From the British American Cultivator.

NEWMARKET AGRICULTURAL SOCIETY.

PLOUGHING MATCH.

The Society held their Ploughing Match for this year, on Thursday the second day of June, in Mr. James Forsyth's field near Newmarket, and the result was most gratifying. The weather was fine and the attendance very numerous. Seventeen Ploughmen entered the list, and the spectators were variously estimated from 500 to 1000.

The match was divided into three classes. The First Class open to all ages and countries. The Second Class to all persons under twenty-one years of age, and the Third Class for lads under 17 years of age. Eight entered the first class, 3 Englishmen, 2 Scotchmen, 2 Canadians, and 1 Irishman.

The Second Class had four competitors, 2 Englishmen and 2 Canadians.

The Third Class had five competitors, all Canadians.

After the ploughing was finished, the judges proceeded to examine and pass judgment upon the work, and here a most difficult task ensued. The work for the most part was so excellent, that the nicest discrimination was requisite to discern the best. The prizes, however, was decided as follows, viz:—

FIRST CLASS.

FIRST PRIZE.—Major Richardson, Englishman, now residing in King Township.

SECOND PRIZE.—George Cookson, from Argyllshire, Scotland, now residing in York Township.

THIRD PRIZE.—George Davis, Canadian, Whitechurch.

FOURTH PRIZE.—William Seaton, Englishman, now residing in Whitechurch Township.

SECOND CLASS.

FIRST PRIZE.—George Pearson, son of James Pearson, Esq. Whitechurch, Canadian.

SECOND PRIZE.—Henry Westly, Canadian, Whitechurch.

THIRD PRIZE.—Henry Chanter, an English lad, residing with Mr. Isaac Landy, Whitechurch.

The Fourth Prize would have been awarded to Wm. Gellank, Englishman, in the employ of J. Pearson, Esq. but that inadvertently he allowed some friend to plough a few rods on his land, which according to the rules barred him from taking a prize, but his work was good.

THIRD CLASS.

FIRST PRIZE.—John Pearson, Canadian, son of James Pearson, Esq. Whitechurch.

SECOND PRIZE.—Joseph Beckman, Canadian, Bas Guilhumbury.

THIRD PRIZE.—John B. Landy, Canadian, Whitechurch.

FOURTH PRIZE.—John Hacking, Canadian, Whitechurch, a lad whose shoulders was about parallel with the Plough Handles.

After the Judges had made their decisions Mr. Major Stephenson was presented with a neat flag having a plough with the motto "Reward of Merit" over it, and the inscription, "First Prize; First Class, presented by the Newmarket Agricultural Society, Newmarket, 2d June, 1842."

Mr. George Pearson was presented with another flag bearing the same emblem as the last, with the motto, "No labor no Bread," and inscription, First Prize, Second Class, presented by the Newmarket Agricultural Society, 2d June, 1842.

Mr. John Pearson was also presented with a flag the same as the former, except bear-

ing the motto, "The Nations Wealth," First Prize, Third Class.

The Ploughmen and Spectators then formed themselves into a procession, headed by three flag bearers, and proceeded to Mr. Todd's, "Newmarket Hotel." A goodly number sat down to a sumptuous and substantial dinner, after which they separated highly delighted with the proceedings of the day.

I beg to remark, that nothing can be more gratifying than the marked improvement in ploughing, in this section of the country, since the first Plough-match was held here, and venture to hope that the Friends of Agriculture in general will give their serious attention to the subject, which is of paramount importance to their welfare.

MICHAEL P. EMLEY,

Secretary.

The zealous and spirited manner in which the late Newmarket Ploughing Match was conducted, was highly creditable to both managers and actors, and must have afforded much gratification to the numerous body of respectable and intelligent persons assembled to witness it. The rapid progress to perfection in this valuable art made in that neighbourhood within the last few years must, while it astonishes, at the same time fill the mind of the generous reader with delight, for it is at all times pleasant to trace the efforts of our fellow men towards the improvement of those arts or sciences which have to their object the extension of these blessings with which Providence has already so liberally supplied his creatures.

Twenty years ago the only plough used in that part of the country, which for fertility of soil is unequalled in British North America, was the common Barshire. This was shortly afterwards thrown aside, and in its place was substituted the Canadian Patent Plough, which as every dog must have its day, obtained great celebrity till the arrival of a few intelligent practical Scotch and English Farmers, who induced by the superior natural advantages of the place, purchased lands and settled there. These, of course introduced the implements used at home, and continued to adopt in Canada the mode of using them, they had followed there.

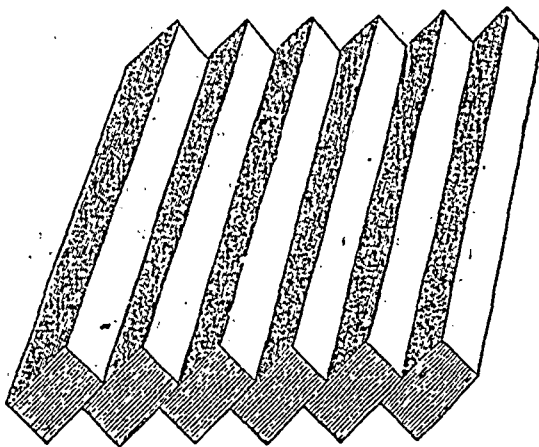
Great opposition was at first raised by the old farmers, to the introduction of these implements, and in many instances these innovators, as they were ignorantly termed, became almost laughing stocks to the community. The new settlers however persevered, and the appearance of the crops, and the general management of their farming operations, soon removed the prejudices and secured the favourable notice of the more intelligent and enterprising of the Canadian farmers, and instead of being looked upon as mere adventures, as was formerly the case, they shortly became respected and consulted as patrons. The effect of the change of systems was soon visible, and the English and Scotch ploughmen were in high repute.

The farmers' sons took lessons in the training of the horses for the plough, in regulating the plough-irons when out of order and soon became good ploughers, and spirited and ambitious in rivalry in all branches pertaining to their business. Thus, the result of their Ploughing Match above alluded to, beautifully exemplify, where Canadian boys no higher than the plough stils were vying for the victory.

For the benefit of our subscribers in some of the other Districts, where the importance of modern Scotch ploughs may not yet be known, or where good ploughing may be good for sore eyes, we give below a correct representation of a few-furrow sicee, five inches in depth and nine inches wide, turned with these ploughs resting on each oth-

er, showing the exact proportion which the width and depth bear to each other, and the lap or proportion of new surface that will be exposed to the atmosphere.

FURROW SLICES.



A part of the following selection from Allison's "Principles of Population" has already appeared in one of our communications published last year in the *Montreal Gazette*, but as subscribers to *The British American Cultivator*, may not have had an opportunity of seeing it, we beg to submit it for their consideration:—

"The first employment of capital in the cultivation of the soil, and such rude manufactures as are necessary for the convenience of simple times. This is the situation in which it offers the most direct encouragement to the increase of mankind, because it is entirely employed in the support of domestic industry. * * * * *

In the progress of improvement, however, the increase of the wants of men generally gives a different destination to part of the national wealth. With the means of purchasing the conveniences and luxuries of life, there springs up the desire to possess them, and this gives rise to the separation of employments, and the introduction of a class of men who transport the produce of industry from the place where it is raised to that where it is required. Hence the direction of capital towards manufacturers and commerce.

The wealth which is employed in the home trade and in manufactures for home consumption is entirely devoted to the encouragement of domestic industry, but the facilities thereby afforded to the multiplication of the species are not so great as when agriculture forms the principal pursuit of the people.

The reason is obvious. When capital is laid out in Agriculture it not only yields a return to the Farmer, but also communicates a degree of fertility to the soil, which renders it capable of producing an enlarged produce, and furnishing the means of maintaining an additional number of inhabitants for an indefinite period. But when the same wealth is expended in manufactures and commerce it only yields a return for the capital employed, with a profit for the use of the employer; there is no permanent addition *besides* this made to the wealth of the state, which may afford the means of maintaining an increased number of individuals. For example, if £100,000 be expended in trade or manufactures, at the end of ten years it may be increased to £200,000, besides maintaining the capitalist and those whom he employed, in comfort during that period. But beyond this there is hardly any addition made to the prominent revenue of

the state, or to the means of supporting an increased population. But if the same sum be employed in agriculture, besides maintaining the Farmers in comfort during the periods of its employment, and doubling itself, as in the hands of the manufacturer it makes a permanent addition to the capability of the soil, which for ever yields a greatly increased revenue to the landed proprietor. If the Merchant withdraws his wealth from its employment, he has no doubt amassed a portion for himself, and has probably furnished the means of doing so to the persons who were engaged in his traffic; but he has left no permanent source of wealth to the state. But if the former withdraws his capital besides having realized a fortune to himself, and having given the means of doing so to his dependants, he has left a *great addition to the fertility of the soil*, which is a lasting cause of opulence to his country.

This is the true reason of the great difference between the permanent encouragement given to population by the employment of wealth in agriculture, and in commerce and manufactures. In the one case, the riches, besides re-producing themselves with a profit, make an undecaying addition to the wealth of the community, and the means of maintaining the people. In the other, the capital only re-produces itself with a profit, and leaves behind it in addition, with the exception of the buildings or machinery of the manufacturer, no lasting provision for an increased population. The encouragement to industry, and consequently the impulse to increase, at the time, may be greater by the employment of wealth in commerce than in agriculture; but the ultimate effect is very different, the continued stream of wealth which flows from the soil after the capital is withdrawn from it, and vested in other occupations, becomes much more than sufficient in the end to counterbalance the temporary stimulus given by mercantile enterprise. Hence the agricultural property of the great commercial states of Europe in former times has long survived the prosperity of their cities, and the decay of their manufacturing industry. The arts and the trading enterprise of Flanders have long since been on the decline, but agriculture is still undecayed; the manufactures of Florence are no longer sought after, in every part of Europe; but the cultivation of the Tuscan Hills never was surpassed; and the Plain of Lombardy is still the garden of European cultivation, though the wealth of Venice and Milan no longer pour their vivifying streams along the waters of the Po.

It is in cultivating the soil, that is, in aiding the productive powers of nature, that the greatest possible encouragement is afforded to the increase of population, not only by giving present employment to the people, but securing the means of their future subsistence. The direction of part of the national wealth into manufacturing or commercial employment, though it may occasion a more rapid increase to its amount at the time, has not the same effect in permanently enlarging the demand for labour, because it has given no impulse to the productive powers of nature, and has left no permanent provision besides itself for the future employment of mankind.

The Merchant who exchanges the manufactures of Britain for its agricultural produce, supports the industry both of the Farmer and Manufacturer of his country; but he who exports its fabrics, and brings back in return the produce of foreign states, vivifies the industry of another country as well as his own. This change has an important effect on the demand for labour. The returns of the foreign trade, besides being divided between two different states, are much slower than those of the home. The more, therefore, that the capital of a country is directed towards foreign trade, the more it is withdrawn from the encouragement of domestic industry, and the more distant that trade is, the less is the impulse which it gives to the labour of the country from which it sprung."

We are proud to select from so respectable an author, when we find his views so completely in accordance with those we entertain on the same subject. There is not a page of the work we refer to that might not be read with profit.

CANADA THISTLES.

Much has been written upon this pest of the agriculturist, but in our opinion the plans generally devised to get rid of them, are only applicable to small patches, rather than to farms completely covered with them. The grand radical cure is clean and frequent ploughing, and by seeding down the land for meadows,—land that is in meadow and mowed for hay for two successive years, will generally destroy any thistles that may have appeared in it.

We have invariably noticed that the class of farmers who are most troubled with this variety of thistle, are those who cut and cover in their ploughing operations, and carry out the whole course of their business in a careless or indifferent manner. The few and imperfect ploughings which they gave their summer fallows, tend materially to the raising of this noxious plant; whereas, if they were to plough their lands properly, say five times in the course of the summer, so that, as we flatter ourselves would be found to annoy them, when harvesting their crop. New lands brought into a state of cultivation, are often entirely covered with these thistles, and a course of fallow similar to that recommended above, will be found necessary, before they can be subdued.

The plan necessary to be adopted by those who have their lands quite covered with this weed is not to allow any plants to go to seed, which may be done in the following manner:—By following a large proportion of their farm, as above described, by cultivating yearly, a few acres of potatoes and rhubarb, by cutting the clover meadow twice in a season, by keeping them on the pasture ground, fence corners and road side, mown close to the ground and allowing none to go to seed, by properly preparing the seed grain of every description; and in short, by adopting an improved system of husbandry, and by close attention to business. If this simple, but laborious scheme be acted upon, we promise them that their farms will be entirely free from Canada Thistles.

We have seen a letter in *The Mark Lane Express* of the 16th May last, addressed by Sir F. A. Mackenzie to The Royal English Agricultural Society, which we think is well deserving the attention of Agricultural Societies in British America. We have ever been of opinion that the chief object of Agricultural Societies should be to encourage the improvement of the cultivation of the soil, and the increase of its general production. The letter of Sir F. A. Mackenzie expresses our views on this subject, so fully and in so much better terms than we could make use of, that we beg to copy the greater part of the letter for the consideration of our Subscribers. We omit the two first paragraphs as they are not exactly applicable to this country:—

“With regard to the prizes offered by our society, I think a great improvement could justly be made in the selection. Will it not be allowed that the highest premium ought to be voted for what is most useful to the nation?

Does then utility guide the prize committee when fixing on the animal list of premiums? For instance let any unprejudiced person, casting his eyes over the list of premiums for 1841, and seeing only £10. awarded to Messrs. Skerving & Gibbs for their valuable display of roots and seeds, whilst £20. immediately follows for gorse-cutter, allowed by the judges to be by no means perfect,—would he call this a judicious distribution of our funds? What comparison can there be between the value of a Skirving Swede, to the nation, and a gorse-cutter—between a superior kind of turnip or grain calculated to increase largely the supply of food for human beings, or for our animals throughout Britain; and a cutter of gorse for horses and cattle only, and besides a thing out of any use, and never can be of any use to one out of a thousand of our farmers, I am decidedly of opinion, and I shall find every man of common sense agree with me in thinking, that the discovery of a superior, more prolific, or earlier wheat, or other grain, or a weightier and more nutritious root than any now known, would be of more value to our country, and I may say, to the whole world, for it could not be confined to Britain,—than all the gorse-cutters, nay, even than all the short-horns one hundred times over, that ever carried prizes at our national or local shows.—Yet how does the matter stand in the eyes of the prize selecting committee? Why, that £100. was given for short-horns, as premiums; £100. for Herefords; £65. for Devons; £145. for cattle of any kind; £155. for horses; £110. for Leicesters; £100. for Downs; £110. long-woolled sheep; £10. for extra stock; and only £30. for pigs, by far the most useful, and consequently valuable animal to the mass of the population; total for animals £915, and as I have already stated, for the roots and seeds on which those very animals wholly depended for their superiority, nay, for their very existence—*ten pounds*. Could, may I humbly ask, these cattle, sheep, &c., be produced in their perfect state, did not such men as Skirving, Gibbs, and others, exert all their talent in discovering roots and seeds, superior in quantity and quality as food for these very animals; and if £915. be devoted to the latter, what will any unprejudiced man say ought to be allowed for that which is the great source and cause of perfection in these animals? Why, £1000., I may say, £10,000. would not be beyond the bounds

of a fair proportion, could such a sum be afforded.

Besides this; a new and more valuable root, or new and more prolific kind of grain, is of importance to every man, woman, and child, fed within the boundaries of our isle—will spread its benefits over the whole country, and come into general use in the course of but a very few seasons; whilst the owners of first rate animals do all in their power, to keep their invaluable breeds wholly in their own hands, to prevent any competitors at our shows becoming successful rivals. In one hundred years give what premiums you like the Spencer blood of short-horns, or the Webb breed of Downs, will not be obtained by any great number of our breeders, nor by one in one thousand of our farmers, unless the premiums are given, on conditions which I am about to propose? Which then most deserves encouragement?

What I would suggest is this:—That the owners of prize animals should not be allowed to confine a valuable breed to their own farm-yard. I consider it the duty and great object of all our Agricultural Societies to study the general interests and welfare of the whole nation; not that of private individual breeders only—to see that all which has proved its superiority should as much as possible be spread over the whole country; and as the best means of so doing as regards animals, I propose making it conditional that no male animal shall be allowed to compete for a prize without producing a certificate that during the past year he has served such a fair proportion of females as may be fixed on, and that all farming prizes shall come under an obligation to serve a proper proportion of females during the rest of their lives for a moderate but a fair remuneration. The male produce too, of female prize animals ought to be kept entire, as a condition agreed on when receiving a premium, and what would still further tend to spread the best breeds over the whole country would be this—that all the males got by prize males should be kept by their owners, a thing easily arranged by making a condition when the females are served by a prize male. As to any security for the fulfilment of such conditions, let us rely on that honour which is the distinguishing mark of every true-born Englishman.

In addition to my proposed innovation, I would briefly suggest that instead of a premium being given commonly to the fattest animal exhibited, a strict inquiry should be made as to the expense of bringing it into that fatted state, and decided by a preference given to that animal or breed which has acquired the best condition on the poorest, cheapest fare. It can be of no value to the generality of our farmers, who look for their subsistence to the profits derived from their farms by judicious economy, to know that the wealthy expend a sum in preparing their stock for shows, double its value when exposed for sale; on the contrary, the really valuable gift to our nation would be those animals arriving at a state of perfection at the smallest expense, and such only ought to obtain premiums.

With regard to prizes, I would place a new, earlier, more prolific, better kind of grain, capable of been grown on inferior soil, as first in importance; since on grain depends the lives of nine-tenths of our immense population: and let it not be forgotten that one bushel of increased produce in grain over every arable acre in Britain, would add 1,200,000 quarters annually to our present corn crops. What object then deserves really the greatest encouragement?

The second place should be assigned to

new superior roots, grasses, or any kind of vegetable food.

Superior ploughs, a perfect dibbler, or other implements capable of performing the various operations necessary for tillage best, and at least expense, should decidedly in justice stand third—for their benefit would be felt speedily all over the country—and I do hope after the promise—shall I call it—given by The Royal Society to my application for a committee to decide the merits of various ploughs, and prove by repeated trials on various kinds of soil, which will perform the most and best work with the least draught. As to deciding by the necessarily brief trials at our annual shows, the thing is impossible; but let our Society call on so many willing to devote their time and talents to this most important object, and there will be want of hundreds ready to form a committee perfectly competent to decide the question, at furthest within six months of their appointment.

Discoveries of new and valuable economical manures, the destruction of the wire-worm—turnip fly, grub—and remedies for the many other evils which afflict the best agriculturists should come next, and not yield an importance to the all absorbing premiums for animals, which ought to stand fourth; though I fear that old habits and prejudices will yet for a while get the better of reason, and give them a higher place than I hope I have succeeded in proving them to deserve.

A large sum is annually devoted to premiums for essays on various subjects, but it may well be doubted whether they produce the beneficial results expected. * *

What we want is—what I proposed two years ago, but of course too new in idea to be complied with—a book on agriculture in all its branches, composed and selected from all that is best, published under the authority and sanction of a practical committee of our Society; with new editions every season or third year, omitting what becomes obsolete, and adding all that is new and really useful. Every man possessing twenty acres of land would read this and profit by it.

Last year I proposed that all the principal points of all the best and worst animals exhibited at our shows, should be written out by the judges, and for the information of the young agriculturists that attend our shows acquire instruction, placed as tickets on some conspicuous part of each animal.”

If the suggestions of Sir F. A. Mackenzie were attended to by Agricultural Societies in Canada, their usefulness would be greatly increased.

In the same number of *The Mark Lane Express*, from which we have copied the above, we find the following paragraph from an agricultural report for the county of Cornwall:—

“All intelligent farmers ought to unite in their experiments with these ends in view; and the knowledge which may be accumulated by the various farmers clubs might be communicated either directly to each other, or to the public through the press. It would probably be an excellent plan for a deputation from the various farmers' clubs in the county to meet once a year, and draw up a general report of what progress has been made, and result of any experiment that may have been instituted. Such a plan, we consider, would be of essential service to the progress of agricultural improvement.”

PRICES OF FOREIGN SALT MEAT IN LIVERPOOL in the latter end of April last, was as follows:—

“Inferior American beef 25s. to 50s. per 200 lbs.; Inferior Hambro’ pork 35s. to 45s.; Hambro’ new m^{ss} beef, 102s. 6d. per 300 lbs.; Hambro’ prime new pork 63s. to 65s. per 200 lbs.; Copenhagen and Archangel pork 50s. per 200 lbs., all the duty unpaid.”

The above prices does not offer much encouragement to send beef or pork from this country to E^gland. If there was a certainty of obtaining from 40s. to 50s. a barrel (of 200 lbs.) for beef, of medium quality, and from 60s. to 70s. for prime pork per barrel, we might export advantageously, because the difference between sterling and currency would pay most of the charges of transport, &c. We must raise and feed stock, or we will not be able to cultivate our lands profitably. A certain market, and moderate prices, would offer more encouragement to the raising and feeding of beef and pork, than fluctuating prices though they might average higher. We apprehend great competition from the north of Europe in the English markets, should the Tar ff of Sir Robert Peel become law, of which there is very little doubt. Land and labour are cheap in the north of Europe, and they will make an effort to send live cattle and salted meat to England where they are sure to obtain a higher price than in their own country.

INCREASE OF SWINE.—A Mr. Hainworth, in a letter to the Editor of *The Mark Lane Express*, dated 4th of May, 1842, says:—

“Two hundred sows, and a proportionate number of boars, supposing each sow to produce ten pigs at a litter, half male and half female, and that each sow bring two litters a year, and the sow-pigs, at twelve months old produce a litter of ten pigs, and a similar number each succeeding six months, the the number of pigs born in the sixth year from the 200 sows and their offspring, of twelve months old and upwards will exceed 132,000,000: which, if fattened to 23 stone each, will supply the population of Great Britain and Ireland for five years, with half a pound of meat per day, each man, woman, and child.”

We believe, that by judicious management, swine might be increased in the above proportion, and therefore pork never can continue exorbitantly high priced for any considerable period.

COURT LIFE.—In the “Diary and Letters of Madame d’Arblay (Miss Burney)” she gives the following droll account by one of the favourite equerries of George III., Col. Goldsworthy, of his estimate of his own life as a hanger-on at Court. After a discussion about an erroneously-delivered message, Miss Burney says—“I mentioned the constant summons brought me by John every afternoon. He lifted up his hands and eyes, and protested most solemnly that he had never sent a single one. ‘I vow, ma’am,’ cried the colonel, ‘I would not have taken such a liberty on any account; though all the comfort of my life, in this house, is one half hour in a day spent in this room. After all one’s labours, riding, and walking, and standing, and bowing—what a life it is! Well: it’s honour that’s one comfort: it’s

all honour! royal honour!—one has the honour to stand till one has not a foot left, and to ride till one’s stiff, and to walk till one’s ready to drop—and then one makes one’s lowest bow, d’ye see, and bless one’s self with joy for the honour!”

UNITED STATES PROPOSED NEW CUSTOMS DUTIES BILL.

The Montreal Gazette has given a schedule of the duties on some of the chief articles of import into the United States, as proposed by their new Customs Duties Bill, to be submitted to Congress, and which, it is not doubted, will pass without material alteration. The following is a copy:—

Woollens and cassimeres—40 per cent.
Worsted stuffs—30 per cent.
Cottons printed, exceeding in value 30 cents per square yard—25 per cent.
Do. white, do.—25 per cent.
Do. printed, not exceeding in value 30 cents per square yard—7½ cents per square yard.
Do. white, not exceeding in value 25 cents per square yard—6½ cents do.
Silk, from India or China—31 65c. per lb.
Do. from Europe—82 50c. do.
Silk and worsted goods—30 per cent.
Linen goods—25 per cent.
Manufactures of iron, steel, or brass—30 per cent.
Clothing—50 per cent.
Wines—Madeira or Sherry—60 cents per gallon.
Spirits—60 or 90 do.
Teas—Black—10 cents per lb.
Green—15 do. do.
Sugar—Brown—3 do. do.
White—4 do. do.
Loaf—8 do. do.
Flour—50 per cent.
Wheat—25 cents per bushel,
Salt—6 do. do.

In order to show the feeling that is entertained by the farmers and mechanics in the United States, on the subject of “FREE TRADE,” we beg to submit a few extracts from two late numbers of *The Main Farmer and Mechanics’ Advocate*:—

PROTECTION.

What change has been wrought by public sentiment on the subject of protecting duties in one short year! It was about this time a year ago, that we decided on starting this paper in defence of the industry of the country. At that time scarcely a paper could be found which was giving this subject any considerable prominence in their columns, while many and some of the most popular and widely circulated periodicals were railing against the entire system of Protection, and inculcating the moon-shine theory of “Free Trade.” But now, there is scarcely a paper that falls in our way which has not taken ground more or less strong in favour of protecting our own industry. This is of the Southern as well as the Northern press. Of the West as well as the East. It gives us great pleasure to notice the change at the South. We prefer articles from that quarter, to any thing we can prepare; and therefore insert the following from the Savannah Georgian of the 15th ult:—

“PROTECTION.—A state of feeling is growing up in the South upon this subject, very different from that existing ten years ago. It is natural that it should be so, when it is,

but too evident that our interests lead us to such a change. FREE TRADE WITH ALL ITS BOASTED BEAUTIES HAS BROUGHT WITH IT FEW OR NO BENEFITS, BUT RATHER A TRAIN OF CALAMITIES, and we find the whole South labouring under a complete prostration of prosperity. WE DO NOT ENCOURAGE HOME MANUFACTURES, and therefore task all our energies, and then in vain, to pay for those things of which the main part could be produced amongst ourselves. Labour is misapplied: we produce more of our staple than is wanted, and have not yet learned to distribute our force upon those objects which would prove most profitable. To enable us to do this, it is necessary to erect some barrier to keep foreign competition from interfering with us, and rendering our efforts fruitless by driving us from our own market.—*American Protector.*”

KEEP OUT THE PROVINCIAL POTATOES.

Mr. EDITOR.—It is well known that the State of Maine is a potatoe-growing state, that there is very many navigable rivers, by which vessels may enter, and those in need may produce them at a price merely indemnifying the tiller of the soil. But alas, the adjoining Eastern English Provinces raise very many, and bring or send them into this country in such abundance as to make it an up-hill business for the farmers of Maine to go largely into the growing of them. Now, Mr. Editor, would it not be wise in Congress immediately to place a tariff on those imported into this nation as an opposite for the English corn laws; especially as we cannot send into those provinces, a yoke of oxen, a piece of beef, or a pig, without a duty. I am for self defence, notwithstanding your friend Smith’s moral objections to a tariff.—But as your correspondent in No. 16, of the current volume, who styles himself an old farmer, and dates at Winthrop, has blown Smith’s notions sky high, I will say nothing about them.

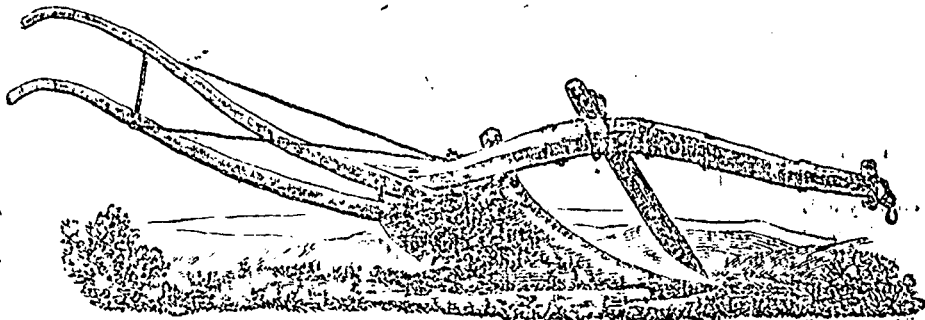
North Yarmouth, May 2nd, 1842.

The following is a paragraph from the correspondent referred to as above, in No. 16, of the same paper:—

“Now, if locks, bolts, bars, and title deeds, or any other thing for personal security are necessary, then it appears to me that a just tariff laid by our government, is as necessary to protect American labour, and the producing classes, and to support the government. I know not what Mr. Smith means by high tariff, unless he wishes to render any tariff odious. I do not wish a high tariff, but I do not wish that foreigners may have the liberty to come into our markets and pay no duty, and compete with home-born subjects on a scale of equality. For that would be reducing our labour to European prices. Many of our fabrics must be made so far back from our sea board, that it would be attended with nearly as much cost to get them to market as to get them from Europe to our cities. I wish not for such a tariff as would amount to prohibition, but such a tariff as would support the government, and render our manufactured articles so high that our mechanics could afford to make them, and raw materials so high that farmers can afford to raise them. Not to make any portion of our people rich, nor to starve them by their idleness. If work is worth nothing, none will be done. I cannot believe that Mr. Smith is one of the suffering many. The suffering many have not the standard of morality that Mr. Smith has.”

HANNAN'S IMPROVED PLOUGH.

WM. HANNAN,
WAGON AND PLOUGH MAKER,
No. 89 YONGE STREET,
TORONTO,



Has always on hand every description, of Farming Implements, Double Mill Board Drill Ploughs, Sowing Machines, Scuffers, &c.

A subscriber makes the following queries, to which we call the attention of our readers. The other suggestions which he makes have unavoidably to be left out for want of room.

- The Grub commonly called the Cut-worm—What fly does the grub turn to? When is the fly to be seen? Where are the eggs laid, and in what manner? How long is it before they are hatched? Are they easily destroyed? How long do the grubs remain in the ground before they turn to a chrysalis?

We published a list of Special Agents in the April Number, and mentioned that we would add to their list from time to time, but since find that it would take up too much valuable room in our Journal.

We authorize all Post Masters, all Secretaries of Agricultural Societies, and all Newspaper Proprietors, throughout the Province to act as Agents.

In addition to the above, we kindly solicit country and village Merchants, and Farmers possessing influence in their respective circles to procure subscribers.

We have had a large edition of the present number worked off in the hope that our Agents will have an influence in obtaining half yearly subscribers, believing that no farmer in the Province would withhold the small sum of two shillings and six pence, in order to give *The Cultivator* a fair trial, which cannot be done so long as they refuse their support.

The *Cultivator* for this month, has been delayed over the usual time of publication, in consequence of the Press getting out of repair. It will be published in future, between the first and twelfth of each month.

We promised in our last, that a dissertation on Ayreshire Cattle, would be given by a person well qualified for the task. However, we have been disappointed.

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TORONTO MARKETS:

For the Month ending 1st July, 1842.

	s.	d.	s.	d.
Flour Farmers, in barrels.....	28	9	a	21 0
Wheat.....per bushel.....	5	0	a	5 3
Barley.....do.....	1	8	a	2 4
Oats.....do.....	1	2	a	1 3
Pease.....do.....	2	0	a	2 6
Clover Seed.....do.....	25	0	a	31 0
Grass Seed (Timothy).....do.....	5	0	a	5 6
Potatoes.....do.....	1	0	a	1 3
Onion.....do.....	2	1	a	29 0
Salt.....do.....	11	3	a	0 0
Pork.....per 10 lbs.....	15	0	a	18 9
Beef.....do.....	15	0	a	22 6
Mutton and Veal (qr.).....per lb.....	0	3	a	0 4
Butter.....do.....	0	5	a	0 7
Turkeys.....do.....	2	0	a	3 9
Fowls.....per couple.....	1	6	a	2 2
Eggs.....per dozen.....	0	4	a	0 5
Hay.....per ton.....	60	0	a	70 0
Staw.....do.....	30	0	a	41 0

MONTREAL MARKETS:

For the Month ending July 1st, 1842.

	s.	d.	s.	d.
Oats, per muid.....	1	3	a	1 6
Barley, do.....	2	6	a	2 8
Pease, do.....	3	0	a	3 4
Buckwheat do.....	2	6	a	3 0
Butter, dairy per lb.....	0	10	a	1 0
Do. (Salt) do.....	0	7	a	0 8
Pork, per 100 lbs.....	20	0	a	25 0
Beef, do.....	25	0	a	35 6
Flour, per cwt.....	15	0	a	16 9
Beef, per lb.....	0	3	a	0 6
Pork, do.....	0	2	a	0 5
Veal, per qr.....	1	6	a	10 0
Mutton, do.....	1	6	a	10 0
Lamb, do.....	2	6	a	5 9
Lard, per lb.....	0	5	a	0 0
Linn Seed, per bushel.....	5	0	a	0 0

ANNATTO.

To Farmers and Dairy-men WHO WISH THEIR CHEESE TO HAVE A PRIME RICH COLOUR AND TASTE WITH A READY

S. G. CLEMENTS, the original inventor of the DEEP RICH ORANGE COLOUR ANNATTO, of double the usual strength, continues to receive the highest and Superior Quality (to all others) from the Dairy Districts of Cheshire, Derby, Somerset, Wilt, Gloucester, Leicestershire, Stafford, Lincoln, York, North and West of England, Scotland, North and South Wales, and Ireland, and in addition to the First Prize being awarded to Clements colour a wish this Annatto in Cheshire, has just received the following very favourable Report from his highly esteemed Correspondents, Messrs. JOHANN BRETHER & Co., Faringdon, Berks, of which the following is a true copy—

"Dear Sir,—We have the pleasure to inform you that at the Faringdon Agricultural Meeting in December last, the First Prize for Cheese was awarded to a Dairy coloured by your incomparable Annatto, the delicacy of which was universally admired.

"We are, dear Sir, respectfully yours,
(Signed) JOHANN BRETHER & Co.
"Faringdon, Jan. 21st, 1842."

"To Mr. S. G. Clements,
Bristol.

To be had only Genuine from the Lewis's Mead Annatto Works, Bristol, and S. G. Clements's appointed Agents throughout the United Kingdom.

N. B. Half the usual Quantity of this Deep Coloured Annatto need only be used.

A few boxes of Extra Orange Cake, and Extra Sumner's Cake double strength just received, and for Sale in Lots to suit Purchasers, by

RHOUD BROTHERS & Co.
Toronto, 1st June, 1842.

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