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THE
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PROFESSOR BUCKLAND'S AGRICULTURAL TOURS.

(For the *Agriculturist*.)

The Board of Agriculture having expressed to me their opinion of the desirableness of my visiting the country, and giving lectures to Societies, with a view of improving those organisations and of diffusing, as widely as possible, scientific and practical agricultural knowledge, it is my intention for the future to devote what time I can spare to this object, and I propose giving in the *Agriculturist*, from time to time, a brief sketch of the more interesting and suggestive matters that may come under my observation. Hitherto my personal attendance has been so constantly required on the grounds, that I have found it quite impractical to visit the more distant parts of the country.

In October last, immediately after the Provincial Exhibition, I attended by appointment the Shows of the Agricultural Societies of the Counties of Kent, Essex, and Lambton, and subsequently reported to the Board thereon. A few words in reference to this journey may not be unacceptable to many readers of this Journal.

The annual Exhibition of the Kent Society was held in Chatham, October 20th. The day was delightfully fine for the season, and there was a larger display both of materials and visitors than usual. The Society has a most convenient piece of ground close to the town, granted some years since by the Government. The show of grains, dairy products, fruit, and ladies' work, was highly creditable, as was also the Live Stock, in each department of which there were several excellent specimens. The dinner took place in the evening, in the Town Hall; about 150 persons attended, and the whole proceedings went off in the best spirit. I had a good opportunity of speaking on matters pertaining to Agricultural Education, and the improvement of Agricultural Societies. The advancement of Chatham and the surrounding country since I was there before, seven or eight years ago, has been very great.

The Exhibition of the County of Essex Society was held in Sandwich, and the weather proved most unfavorable. Notwithstanding, there was not a bad collection

of materials, usually composing such exhibitions. Some of the cattle were good specimens, but the pure breeds seemed scarce. The horses in this part of the country are generally too small for effectually working the heavy soils which predominate; they have more or less of French blood, and are bred extensively on the wet plains at a comparatively small cost. In the afternoon I addressed the members of the Society and others in the Court-house.

In consequence of the unusual inclement state of the weather, the Show of the County of Lambton Society, held at Port Sarnia, was expected to prove a failure; it was, nevertheless, a good one. In live stock, although there were many specimens above mediocrity, the room for improvement is great, as is also, I was happy to observe, the desire. The grain and roots were mostly of excellent quality, and a more creditable display of butter is seldom to be seen even in older districts. In the evening I addressed the members on some of the more important topics in relation to agricultural improvement, and spent an agreeable hour afterwards in an interchange of views and suggestions relative thereto.

I was struck with the abundance of pasture to be seen almost everywhere throughout these Counties; indicating the natural fertility of the soil, and its happy adaptation to grazing purposes. The great thing needed is effective drainage, which in some parts would require conducting on a large scale. With this purely practicable object accomplished, this section would not be excelled for all the purposes of modern husbandry by any other in the Province.

I may state further, that I felt highly gratified with my visit to these Western Counties, not merely by signs of physical advancement which are everywhere apparent, but likewise by the manifestation of what may be correctly designated as the true British-Canadian spirit and loyalty of the people.

I attended, in February, the annual meeting of the County of Peel Agricultural Society, held in Brampton, and lectured in the Town-hall in the afternoon. This Society is progressing, and the improved breeds of cattle, horses, sheep, and swine are fast finding their way into this fine County. I had much interesting conversation with many of the farmers, and from the very scanty means of making observations in winter, I was led to form a very favourable opinion of the agricultural capabilities of the County of Peel.

I have since attended a soiree of a Literary and Mechanics' Association, recently established at Aurora, a rapidly thriving village on the Northern Railway. The attendance was numerous, and the proceedings very interesting, affording me an opportunity of urging the importance and means of agricultural education and progress. Next evening I addressed a respectable audience, consisting in great measure of farmers, at Newmarket. This part of the country was early settled; many of the fields are free from stumps, and the farms have often a neat and more finished appearance. The surface is beautifully undulating, making drainage in most cases easy, and the general appearance picturesque. Captain Beresford's residence has quite an English appearance, and I observed in his yards several specimens of well-bred cattle, sheep, and swine; some of the former consisting of pure Durhams.

The Captain is a rather extensive grower of Swedish turnips, which he feeds liberally to his stock, with much advantage.

About a fortnight since, I visited Paris for a few days, and lectured before the Mechanics' Institute of that town, to a large and most respectable audience, on the relations of science to practical agriculture. The bad state of the roads prevented many farmers at a distance from attending. I was glad to meet here, as I had on a previous occasion at Aurora, several clergymen of different denominations, who were evidently desirous of promoting the welfare of their valuable institutions. I enjoyed the hospitality of David Buchan and Henry Mogh, Esqrs., and the Messrs. Allchin kindly conducted me to see the characteristic features and improvements of the place. Since my former visit to Paris, some half a dozen years since, great changes and improvements have been effected; and few places, probably, are destined to reap so fully the advantages conferred by railways. Paris has unrivalled water power; what with the Grand River, and its tributaries, now so extensively improved by art, it is surely and steadily progressing in manufactures and commerce. Speculative excitement appears not to have attained to that hazardous note of intensity here as in some other places; a more healthy and enduring, if somewhat slower prosperity, has in consequence obtained. Surrounded by so pleasant and superior agricultural country, and with such great natural advantages, Paris holds out many great and substantial advantages, which can be procured on moderate terms by the mechanic, manufacturer, or trader.

From observations during the journeys which I contemplate making during the approaching summer, I shall be happy to cull such facts and information as will be generally interesting and useful to the readers of this Journal. In conclusion, I may add that from all I have seen and heard, the wheat plant is secure. Notwithstanding that spring operations are necessarily late, the prospect of an abundant year must, on the whole, be considered as encouraging.

GEORGE BUCKLAND.

Board of Agriculture, Toronto, April, 1856.

PRUNING AND CULTURE OF CURRANTS.—No fruit pays better for good culture than the currant, yet none is more generally neglected. As there is likely to be a scarcity of summer fruits this year, owing to the destruction of peach and cherry buds, &c., all who have currant bushes should bestow upon them special attention so as to increase their fruitfulness. Old and neglected bushes should have some of the old branches cut away, so as to give the young shoot a chance to fill their places, and these should be thinned out, if numerous, and shortened if long, so as not to crowd each other. But especially dig out the grass, if any, about the roots, and apply a good dressing of manure and ashes, spading it in; and when the hot weather commences, cover the entire surface under the bushes with tan bark, saw dust, old leaves from the woods, or chip dirt from an old wood pile; this will prevent the growth of weeds, and keep the ground moist, greatly promoting the quantity and quality of the fruit.—Gooseberry bushes should be treated in a similar way, only more attention should be given to pruning, so as to keep the bushes open and the leaves and fruit fully exposed to the air—cutting away half of the last year's shoots, and shortening the rest one half.—Cuttings of gooseberry and currant bushes should be taken off as early as possible, selecting the shoots of the last season's growth, and shortening the tops, say to 8 or 10 inches in length. They may be placed in the cellar, with the butts in the earth or sand, until the ground is fit for planting, then set them in warm sandy soil, about two-thirds of their length in the ground.



[We give a portrait of the Galloway, in order that such of our readers as have never seen them may form an opinion of their merits from appearance, as well as the statements of the gentlemen who took part in the discussion which follows.—*Ed.*]

TOWNSHIP OF HAMILTON FARMERS' CLUB.

GALLOWAY CATTLE.

The Township of Hamilton Farmers' Club met in the Township Hall, Coldsprings, on Friday the 1st February. This being the first meeting of the Society in the new Hall, it was well attended.

Mr. Matthew Forsyth, Vice President, in the Chair.

The subject of discussion was then introduced by Mr. Riddell reading the following paper on Galloway Cattle:—

MR. CHAIRMAN,—I can scarcely account for the task of bringing the properties of Galloway Cattle before this meeting being laid upon me, as I am not a breeder of any class of pure bred cattle, my stock consisting wholly of Natives and Grades, and my inclination, tastes, and habits lying more in the cultivation of the soil than in the breeding of Stock; besides our Society numbers amongst its members Mr. Wm. Roddick, who was the first to introduce Galloway Cattle into this neighborhood, if not into the Province, and certainly he is much better qualified to bring their merits before you than I can pretend to be.

On a subject such as the present it is needless to pretend to originality, so I shall do little more than make a few extracts from some of the various writers who have written on the subject of Cattle. Of the origin and early history of Galloway Cattle I can say little. Martin, a celebrated English writer on Cattle thinks they are descended from the same wild Cattle that used to roam in the ancient forests of Caledonia, some of which, he says, are still to be found in Chatelherault Park in Lanarkshire, which are mostly if not always polled.

He says, the Galloway cattle are in great demand by the grazer; they are of considerable size, fatten readily, accumulate flesh on the best parts. They are less wild than horned cattle, and less quarrelsome, and under some circumstances, as on shipboard, may be packed somewhat closer than others. Youatt, a standard writer on cattle, says that "the Galloway is short on the legs, and moderately fine in the shank bones; the happy medium preserved in the leg, which secures hardihood and disposition to fatten. With the same cleanness and shortness of shank there is no breed so large and muscular above the knee, while there is more room for the deep, broad and capacious chest. He is clean, not fine and slender in the neck and chops. A thin and delicate neck would not correspond with the broad shoulders, deep chest, and close compact form of the breed. The neck of the Galloway bull is thick almost to a fault, the head is rather heavy, the eyes are not prominent, and the ears are large, rough, and full of long hairs, on the inside. The Galloway is covered with a loose mellow skin of medium thickness, which is clothed with long soft silky hair. The skin is thinner than that of the Leicestershire, but not so fine as the hide of the Short Horns, but it handles kindly.—The prevailing and fashionable colour is black, a few are of a dark brindle brown, and still fewer are of a dun or drab colour."

Though black is certainly the most common colour among Galloway cattle, yet I have seen a good many brindle and dun ones, and even one or two white. There used to be a small farmer in Upper Annandale who had a stock of white cows with black ears, celebrated for good milkers, which he maintained was the real pure Galloway breed. "It has often and truly been remarked," says Youatt, "with respect to the Galloway cattle, that while in most other breeds of Scotland there may be some good beasts, but mingled with others of different and very inferior kind, there is a uniform character and that of excellence.—Here one bullock selected at hap-hazard may generally be considered as a fair sample of the lot. They are generally docile; this is a most valuable point about them in every respect. It is rare to find even a bull furious or troublesome." Jackson in his treatise on Dairy Husbandry, says—"The Galloway breed of cattle is well known for various valuable qualities, and easy distinguished by the want of horns. It is broad across the back, with a very slight curve between the head and quarters, and broad at the loins, the whole body having a fine round appearance. The head is of a moderate size, with large rough ears, chest deep, legs short, and clean in the neck. This breed is highly esteemed, as there is no other kind which arrives at maturity so soon, and their flesh is of the finest quality, the milk is very rich, but is not obtained in very large quantities. It is no doubt true that this breed of cattle has been principally bred for their feeding qualities, yet I think their milking qualities has been greatly underated. I am informed by those who had experience of both breeds that the Galloway cows are fully equal if not superior as milkers to the native cattle of this country. Their hardiness too renders them suitable to soils and climate where the justly celebrated Short Horns even in England does not succeed. Sir James Graham, who is well known, not only in the high place in the councils of our native country, but also from the great attention he has devoted to the improvement of his estates, is reported to have said at an Agricultural Show at Netherly, some years ago—"I take blame to myself for having endeavored to introduce with considerable tenacity the Short Horned breed of cattle, which I am now thoroughly convinced is not so well adapted to thrive in the climate of this part of the country; but having now taken the Galloway breed as decidedly the best and most profitable, it has been my earnest endeavour to obtain from Galloway the best breed of cattle to introduce them among the tenants of my estates." E. W. Thompson, the worthy President of our own Board of Agriculture, in an address to the York Farmer's Club, speaks most favorably of this breed, and after describing their forms and qualities, says—"In the year 1851 I myself saw 3,000 at once in the market, as plump and fat almost as

it was possible to be." I can add but little to the above extracts, but I have no doubt they will prove a valuable addition to our stock of cattle as their hardiness will enable them to stand the rigor of our winters. Some years ago it was calculated by Professor Low that from sixteen to twenty thousand of the Galloway breed of cattle are sent annually to Smithfield Market, where they are highly esteemed for the excellent quality of their beef. But they are not only sent to the London market, but to most of the large cities in England. I read in a late British newspaper of the last Liverpool Christmas market, when it is said—"Among the finest cattle in the market were some lots of Galloways, fed in the neighborhood of Kircudbright. One of them a splendid bullock, fed by Mr. Stewart of Kirkechrist, realized the high price of £45 sterling. Mr. Tenant, Howell, furnished a quota almost equally remarkable, and five of his stately herd averaged £41 10s. each. And again, amongst the finest beef produced was a superior ox, fed by Mr. Rogers, Penkilm, and a couple of three year old heifers from the sheds of Mr. Elliot, of Hardgrove. These heifers had missed calf, and were fed off in consequence. They were sold for £35 each, and brought rather more than 8d. per pound which was we understand the highest price in the market.

This breed of cattle, as their valuable qualities become better known, though not brought into notice by any adventitious circumstances, has largely increased in numbers and spread over a large tract of country. I saw in the Dumfries *Courier* lately an account of the numbers and estimated value of the different kinds of cattle sold in that market for the past year. I copy as much as relates to the Galloways:

3 and 4 yr. olds, 2,966 at	£13 0 each,	£38,948
2 yr. olds, 8,236 at	9 10 "	78,242
1 yr. olds, 6,208 at	7 0 "	43,436
Cows and queys, 485 at	6 10 "	5,607

Numbers 17,925

Value 164,232

As I have extended these remarks to rather an undue length, I must hasten to a close, and in doing so I would take the liberty of urging upon all the necessity of feeding well, whatever breed be the object of your choice, whether our useful, though neglected Native, or the majestic and stately Durham, or the thrifty, vigorous Hereford, the sprightly, active Devon, the beautiful, milk-giving Ayrshire, the picturesque and shaggy Highlander, or my favorite, hardy, docile, hornless Galloway. Feed them well, for after all much, very much, depends upon keeping well. We may send to England or any where else for the best cows that can be got; we may search the world over to please the eye; but unless we give them the best care and liberal feeding, they will most assuredly deteriorate, and eventually become as unworthy of propagation as any of the breeds now to be found roaming on our rich, but much neglected pastures.

Mr. George Roddick said he was so thoroughly convinced that the Galloway breed of cattle would answer well in this country, that he had been at considerable expense in importing them. Those who keep them in Scotland find them a very profitable breed of cattle, being easily kept and very hardy.—There are still very few of them in this country, but he hoped to see them become more general. When in the old country making his selection, he found they were not so much famed for the quantity of their milk as for its quality, the best test of which, in his opinion, was to look at the calves they raise.

Mr. Bourn could not say anything either as to the Galloway or Ayrshire breeds of cattle; as his experience had been confined to Durhams, and what he preferred them for was that when they passed the pail they were easily fitted for the shambles.

Mr. Underwood would not class one Breed of Cattle with another but would rather say he has seen the Galloways tried in this country and thinks they will answer well, the young of which when kept out of doors seem to thrive better than others he has seen.

Mr. Pratt knew a farmer that raised a good many Durham Cattle, but kept Galloway Cows to raise them from.

Mr. McDonald was glad to see so many intelligent farmers around him ; it shewed that they were fully alive to the benefits derived from such social meetings as the present. In the old country Agricultural clubs maintained a high position, in his opinion deservedly so, as they had been the means of disseminating a great deal of useful and valuable information amongst farmers generally. He had listened with great pleasure to the admirable essay on Galloway Cattle just now read by their able and energetic President ; and in saying so he felt certain he re-echoed the sentiments of the whole meeting. Galloway or Polled Aberdeenshire Cattle were highly esteemed both in Scotland and England for their large size and firmness of their flesh, and the readiness of their disposition to fatten. Under the judicious management of the late Hugh Watson of Keillor, Forfarshire, who may justly be called the father of the improved breed in Scotland, Mr. Combie of Tillifour and others they have now attained such a high degree of excellence, that for fat, symmetry and weight they would equal if not surpass the far famed Durhams. As a proof of what he said, he need only refer to the prices obtained for them in what he believed to be the greatest Beef market in the whole world—viz., Smithfield market, London, where when properly fattened they would fetch from 4d to 6d per 8lb more than any breed whatever. Their well known hardness of constitution, also, in his opinion, rendered them well adapted for standing the rigors of a Canadian winter. He could testify from experience that they would thrive and fatten in situations and on a quality of food wholly unsuited for their less hardy brethren the short horn. What better recommendation could any Breed have for the climate of Canada. He wished to say that he entirely agreed to a remark made by Mr. Riddell on the necessity of farmers having their Cattle properly housed, fed and attended to. If that was not done it was of little moment what breed they reared, or what amount of money they gave for them, he was decidedly of opinion they would never become profitable. He had come to Canada to try his hand at farming ; the only stock in trade he had brought with him was the experience acquired during his lifetime as a farmer. Whether the system pursued in Scotland could under all circumstances be profitably followed here he was not able to form an opinion but, he would hazard one remark, viz, that the sooner the improved management of cattle was introduced the better, and he had made up his mind to follow the same course he had been used to in Aberdeenshire. There the rearing and feeding of cattle was now the chief object of the farmer.

Mr. P. R. Wright said, he did not think it even probable that the Galloways are descendants of the wild cattle, and must be permitted to differ from the authority quoted by Mr. Riddell. The wild cattle in Chatelbarall park belonging to the Duke of Hamilton in Lanarkshire, as well as those at Chillingham Castle, in Northumberland, the seat of the Earl of Tankerville, are invariably white, with black muzzle, the inside of the ear and about one half the outside red, white horns with black tips very fine and bent upward, and in their general appearance bear a strong likeness to the North Devon. I rather incline to the belief that the Galloway is neither more nor less than a *polled Kyloe*, his qualities and general appearance are so remarkably similar. Youatt says, that even so late as last century the greater part of the Galloway cattle were horned, they were middle horns, but some were polled, although they are certainly heavier than our West Highland Kyloe of the present day, this increase in

size would naturally have been produced by the richness of the pastures of the Lowlands, but whether their progenitors were the Kyloe or the Urus, need not be made the subject of discussion. The animal as he is, is what interests us. I, sir, have long believed them to be the best grazing stock in Scotland, I also believe that their native counties forming the ancient province of Galloway is peculiarly fitted, both from its soil, climate, and mode of farming, for rearing these hardy animals and although they have had to yield to the Short Horns, in those parts of their native district where the the turnip husbandry can be prosecuted to advantage, *and have been justly supplanted by the Ayrshire for the dairy*, yet where the rearing of grazing cattle is found the more suitable practice they still stand unrivalled.

In introducing new breeds of cattle into Canada, it is of the highest importance to consider whether they are constitutionally fitted for the climate. The rigours of our winter will soon tell on an animal that has been delicately reared, and I cannot but consider it vitally important that great attention should be paid to the natural constitution of any breed of cattle intended to be profitably reared here. The effect of climate and feed, has more to do with the *production* of different varieties of cattle than most people believe, and it is wonderful to see how completely nature adapts itself to circumstances. It would certainly be an unprofitable speculation to purchase the large Lincoln, or Teeswater sheep to pasture on the Grampian Hills, or to send the high bred Durham to fatten on the Shetland pasture; time will determine the question now raised by fanciers of different breeds, which is most suitable for this country, and it is well that a spirit of enterprise exists amongst Farmers which will give latitude to the test. Some gentlemen have observed that the milking qualities of the Galloways had been overlooked. Their advocates would do well to say but little on that point, their very appearance forbids the belief that they are fill-pails, and Youatt states positively that they are not good milkers, that the average quantity of milk given by a Galloway will not exceed 6 or 8 quarts per day, and that she will be dry one third of the year. The quality of the milk *may* be superior to that of cows yielding on the average three times the quantity, but I believe few experienced dairy men would be willing to place quality for quantity under circumstances so disproportionate. While he was glad to testify to the good qualities of Galloways as grazing cattle, he must be permitted to say, that as milkers they must be placed far behind the Ayrshire, which as a dairy animal, and for general thriftiness was unquestionably unrivalled.

Mr. W. Koddick.—So much has been said in favour of Galloway cattle by the previous speakers, that he found but little to add in addition to what has been already laid before the meeting. One thing, however, he would state, and that from experience, that they are easier kept in condition than his other stock which are principally Natives. He has fed all alike and the Galloways are now in better order than the others, and again they are very quiet and peaceable, you may turn them out along with sheep or other stock without fear of accident. As to milking qualities he thinks they are generally underrated as he found they gave as much as his other Cows, and had no doubt they would soon become more general in this country as well as in the United States, and from all quarters he has offers for calves.

Various other gentlemen having taken part in the discussion, it was moved, seconded and carried unanimously, that a vote of thanks be given to Mr. Walter Riddell, for his excellent essay, and that the next meeting of the club be held in Cockburn's Hotel, Baltimore, on Friday, the 7th March, at 1 o'clock P. M., and that the subject of discussion be Agricultural Horses.

WILLIAM RICHARDSON,
Secretary.

TORONTO HORTICULTURAL AND AGRICULTURAL CLUB.

KITCHEN GARDENS.

The Second regular meeting for discussion of this Club was held on Tuesday, 18th March. There was a moderate attendance of gentlemen present; the President, Mr. Allan, and several other leading members being unfortunately absent from unavoidable causes. Mr. James Fleming, one of the Vice-Presidents, occupied the chair. The subject for discussion, "The importance of Kitchen Gardens as an appendage to Farm Houses" was introduced by Mr. Mundie, Landscape Gardener, of this city, whose interesting paper we regret we cannot insert in full. Our space will enable us to give the *practical* directions, only. The introductory remarks on the value and importance of the garden and its products, as well as the concluding arguments by which Mr. M. enforced his theme, were exceedingly well put. Those who may wish to see the entire paper will find it in the *Colonist* of 22nd March.

A kitchen garden of the present day, may be defined as a piece of land fenced in and set apart for the growth of vegetables, roots, herbs, and small fruits for cooking or kitchen purposes, as the name of the garden implies. The term small fruits, comprehends the various sorts of gooseberries, currants, raspberries, strawberries, cranberries, &c.

In choosing a piece of land to lay out a kitchen garden, the situation should not be very flat nor very elevated. In very low or flat situations, the moisture of the atmosphere renders the crops of all sorts more liable to be injured by frost, and on very high land the cutting winds of spring and early summer are also injurious; the blossom and young fruit are often damaged, as also the leaves of tender vegetables and plants of all descriptions, when in a young and growing state.

A piece of moderately light land, sloping very gently towards the South or South-East, avoiding the extremes of situation mentioned above, will under good management give every satisfaction. A point to the East will give increased earliness.

The farmers', or country kitchen garden, (and of which I am more particularly speaking) should be near the dwelling house, and should occupy a position if otherwise applicable, partly between the dwelling and barn or stock yard. If so situated, it will be convenient to manure, convenient for gathering vegetables at all times, and also convenient to cultivate, allowing every half hour to be employed to the best advantage.

The size of the garden should be regulated according to the wants of the family; for a family of six persons, half an acre will not be too much, and for any larger number the ground may be increased in proportion; always bearing in mind, that a small garden requiring to be crowded, is more difficult to keep than a larger space where there is room for proper regulation and rotation.

The shape of the garden may be adapted to existing circumstances, but if otherwise applicable, a quadrangular, or an oblong square can be cropped and cultivated to more advantage than irregular forms, which should only be adopted in case of necessity, either from the lay of the land or other difficulties which cannot be controlled.

The fencing is better to be close, to the North side, and partly so on the East and West ends; a shelter of trees outside the garden fence on the North side, North-East, and North-West corners, should be raised as soon as possible. The different kinds of evergreen trees (such as the balsam fir, the Norway spruce, the hemlock spruce, and the different varieties of cedar) will best answer the purpose at least those trees next the fence should be of this kind. They give most shelter at the time when it is most wanted, and their roots and branches are not so troublesome in undermining or overhanging the borders, as deciduous trees, or those trees which throw their leaves every season.

The first step towards the cultivation of the space which may thus have been set apart and fenced for a kitchen garden, is, to drain it thoroughly; some situations and soils there are which may not require the operation, but those are rare exceptions; and as a general rule, mostly all soils will be benefited by draining. The extent to which this may be necessary, must be determined by the nature of the soil to be operated upon; however, there is no fear of overdoing, as the more drains there are put in, the nearer perfection will the garden be; and on no account should draining be neglected when the garden is laying out, as if once it is planted and furnished, draining cannot be done so

well; nor can it be done at all, without undoing and destroying much that may have been already accomplished.

Having selected a point of outlet for the drainage water at some of the lowest corners, and from whence a sufficient fall or run can be got to carry it off; a main drain should then be led along the lowest side, to receive the water from the lateral or branch drains, which should be so laid out as to catch or intercept the natural sug or trituration of the water in the land, that is always going on from the higher to the lower levels. The drains should be extended through the border of shelter trees on the outside of the fence, which being on the North side of the garden will consequently be the highest, and the point from whence the water proceeds.

In most cases the drains will answer every purpose intended, if dug about three feet in depth; finishing the bottom to a graded slope or run, in the direction to which the land falls. The best materials for permanency are stone, or draining tiles; but no one should be deterred from proceeding because he cannot obtain any one material, as although the materials above mentioned are the most durable, yet good substitutes may be found in either fence rails or brush wood, any of which if well put in and carefully covered with a tough green turf (as all drainage for trituration should be) will drain the land effectually for a period of from forty to fifty years.

The whole garden and tree border outside, should then be subtrenced, to a depth of not less than two feet; preserving 15 inches in depth of the original surface soil upon the finished surface; the subsoil below this 15 inches should be dug and loosened to the desired depth, but left in the bottom of the trench (hence the term subtrencing,) and 15 inches of the soil from the surface of the next trench thrown on the top of the loosened subsoil, and so on until the whole is finished.

The benefits of this subtrencing are manifold; it allows the superabundant water to percolate easily and quickly through the soil to the drains, leaving a deeply loosened porous body of soil fully saturated with moisture, but never to stagnate or get sour. It allows a perfectly free circulation of air, heat, and other atmospheric influences, to pass into and through the soil, more moisture is retained and held in solution during dry weather; the evaporated moisture from the bottom (which in shallow soils is brought to the surface and absorbed into the atmosphere) being absorbed and retained by the depth of soil, in its passage upward, a small surplus only passing off by slow degrees into the atmosphere.

The roots of all plants and vegetables penetrate this loose soil to such a depth, as that even during long continuances of dry weather, they are seldom or never what we would call burnt or scorched; and having a greater range of pasture, they are much increased in size and value. But this is not all, their properties are also quite different; as from being produced upon a soil perfectly drained and ventilated (so to speak) and which allows all the organic elements free scope to play a part in their growth and maturity, we may be well assured that they are as superior to the productions of an undrained, untrenced, sour soil, as a man who feeds upon good, wholesome, well prepared food, and lodges in a well drained, well ventilated house, taking sufficient exercise, is superior to a man who lives upon inert matter, and lodges in an ill drained, ill ventilated house, taking little or no exercise. (The cultivation of the surface represents exercise.)

When the trencing is finished and the surface brought to a graded level, the walks should next be marked out. Cross walks may be put in to divide into convenient sized quarters, but one main walk all round the garden, at about from 9 to 12 feet from the fence inside is essentially necessary, because the borders next the fence being on some sides the warmest, and on others the shadiest, should be occupied with all kinds of small early and late crops, to cultivate and to gather which, it is necessary to have ready access at all times from a main walk.

Gooseberries, currants, and raspberries, with probably a dwarf pear in each corner (to break the sameness which would otherwise prevail) should occupy a border of about 5 feet wide, round each quarter, the bushes to be set in one line, about 6 feet apart, along the centre of this border; the black currant and gooseberry in the shadiest places. Raspberries should have a situation open to the sun most part of the day, as otherwise the wood will be winter killed. They may be planted 3 feet apart in line. Strawberries will do best in one of the open quarters, they should be renewed by re-planting every second or third year, and always on a fresh quarter. Rhubarb and asparagus may be advantageously planted in two exposures, the one in the sun, and the other in the shade; by attending to this, the season of these most excellent vegetables will be prolonged. The

ground for those should be made very rich with old and well rotted manure ; to be right, the manure and soil should be half and half.

I would not recommened planting flowers along the fruit borders, as they draw off the nourishment from and deteriorate the quality of the fruit, at the same time, from their tendency to nourish weeds and to harbour the seeds of weeds, they are often the cause of the bushes and edgings being so over-run, as perhaps from a temporary neglect, to get beyond all possibility of ever been cleaned. The walks for a garden of half an acre should be about four feet six inches wide, and so in proportion to larger gardens. The soil from the walks to the depth of from six to eight-inches should be thrown upon the borders and quarters of the garden and the space so excavated, filled in with broken stone and gravel on the top, or with the best hard material for making walks, which may be within the reach and means of the owner.

Good cultivation includes not only the entire extirpation of all weeds as soon as they appear, but also, (and more especially in dry weather,) frequent stirrings of the whole of the surface of the ground, in the borders, and among the various crops as they advance in growth. If this be attended to, it will act largely as a preventive of weeds germinating, and also open the surface of the soil, encouraging the circulation of the air, as before spoken of, to proceed more freely, which is of essential benefit to all growing crops.

In some measure corresponding to these preliminary remarks, there must be an amount of preparatory labour before a kitchen garden can be expected to be either satisfactory or productive, and to any one not acquainted with the operations thus described, especially if they view the whole of the various improvements at once, garden making on this standard will appear to be a formidable business: but by directing the attention to each part of the work separately, and prosecuting that at all convenient times until finished in the best manner, and so on in succession proceeding systematically, I do not hesitate to say, (and that even to a farmer whose hands are sometimes pretty full,) that the work may be accomplished, without much inconvenience, and all the more easily from knowing, that by doing it in this thorough manner successful results are certain.

From a good kitchen garden attached to a farmer's or other country house, and having been prepared as above stated, the owner with his family may enjoy a large portion of either fruit or vegetable diet every day in the year; but that can only be accomplished by carefully attending to the sowing and planting, cultivating and gathering, storing and preserving, all the various productions at their proper times and seasons; yet, when this is gone about systematically (proper conveniences being provided) it will rather result in being, in a great measure, a pleasure than a toil.

As early as the end of April or at furthest in May, asparagus, rhubarb, winter spinach, lettuce, radishes, and top onions, may be gathered in profusion. When at the same time, from the former years stores may be supplied, turnips, carrots, beets, onions, parsnips, kidney beans, and cabbages, if they had been preserved in pits, with dried parsley and all the varieties of seasoning herbs such as mint, sage, hyssop, marjoram, thyme, savory, &c.; also preserved fruits and pickles. In addition to which, during the early winter months' celery, with the various species of squash, and gourds will have been in use.

I have mentioned the months of April and May, because most people know that, in those two months vegetables are scarcer than during any other period of the year; yet, during those two months we have here a very good variety, all plain to be sure, but very valuable as an addition to a family diet: and I have taken particular care not to put down anything but what is quite easy and practicable to have at the season spoken of.

The saving effected from the addition of a plentiful supply of roots and vegetables to a family diet, will at the year's end be a very large item; as by that means, more of the products of the dairy and poultry yard, with flour and flesh meat of all kinds may be marketed; but the saving in point of economy is only a small portion of the benefit resulting from a proper mixture of vegetables with the aliment of a family.

The Chairman, Mr. Fleming, returned the thanks of the meeting to Mr. Mundie, for his valuable paper, which, if it went out to the country, as he hoped it would, through the papers, would show the people of the country how to proceed to effect some improvement in this important matter. He approved of Mr. Mundie's idea of having small model gardens attached to the common schools of the country. Any one who travelled through the country and witnessed the naked, desolate appearance of many of the schools, must be convinced of the good that would be effected by such a movement.

Mr. McDougall was sorry to say that the ideas of Canadians in regard to the pleasurable associations connected with the cultivation of the garden, were not generally of the

poetical nature described by Mr. Mundie. Rather the contrary. The weeds in this country grow so rapidly, and so obstinately, as to make the occupation of gardening on farms anything but pleasant or profitable. Perhaps, drainage as described by Mr. Mundie, would effect some improvement in this respect.—He believed, in fact, that the grand defect in gardening in the country was, that no thorough system of drainage was adopted preparatory to making the garden. In support of this he stated that he had cut a single deep drain through his own garden, and immediately adjoining this, not only had the plants grown much better, but the weeds were actually much easier kept down, and the soil became of a much kindlier nature. The effects, however, did not extend very far from the drain. A neighbour of his had claimed to have got rid of the evil of weeds by trenching the soil of his garden, that is, by digging two spades deep—burying the surface soil, and bringing the subsoil to the surface. He feared that unless some practical remedy of general adaptation could be found for this evil, Canadian farmers would not be easily prevailed upon to devote themselves much to gardening. Some of his neighbours had stated that they could actually buy vegetables more profitably from the gardeners in the Toronto market than they could raise them themselves.

Mr. Fleming, in reply to Mr. MacDougall's observations said, that in all cases, as for instance in case of a fine alluvial soil on the surface, and a stiff, tenacious subsoil, it might not be advisable to bring up the subsoil to the surface, as in such a soil plants would certainly not flourish. As for weeds, if they were allowed to gain headway, of course it would be a great deal of trouble to keep them down; but we must be up early in the morning and take them down while they are young.

Mr. R. Davis said, although a previous speaker appeared to have a contrary idea, he could very well enter into Mr. Mundie's feelings of pleasurable recollections connected with the cultivation of the garden at one's early home. He was used to gardens in his early days in the old country, where beautiful gardens were common. In this country gardens do not exist, both for physical and natural reasons. Money had been expended in making them, and the climate was unfavourable to keeping them. As to burying weeds below the surface in order to get rid of them, he was doubtful if that would be found an effectual remedy for the evil. The vitality of the seeds might exist till, in course of time, they would be brought to the surface again, when the condition of the garden would be as bad as ever. In the old country he found that flat hoeing was constantly practised to keep the weeds down; he doubted if that simple and effectual remedy was sufficiently preserved in this country. In this country, we labor under the disadvantages, as to gardens, of want of means, and of an ungenial climate. He agreed with Mr. MacDougall, that it would be difficult to persuade farmers to take kindly to gardening; though unquestionably if it could be done, it would be a great advantage.

Professor Buckland did not exactly agree with the last speaker, as to the great disadvantages of our climate for gardening purposes. Every country or climate had, in opposition to the natural or physical disadvantages under which it labored, some counterbalancing circumstances in compensation. In this country the severe frosts of winter, although, of course, entirely destructive to vegetable life, had the most beneficial and ameliorating effect upon stiff soils exposed to its influence. In regard to weeds, he would recommend setting out all plants or seeds in drills or rows, by which method they could be much more easily kept clean with the hoe. By perseverance in thorough hoeing for a year or two and allowing no weeds to go to seed, the evil would be overcome. He did not think that the circumstances of any who had any land suitable for cultivation could be such that it would be more profitable to buy their vegetables than to grow them. In regard to trenching, he had found in growing trees or shrubs; a great advantage from throwing up the subsoil, as the burying of the surface soil afforded a greater depth of loose mellow earth for the roots to penetrate, but in ordinary kitchen gardens, where the subsoil might be of a stiff character, this could not always be practised.

Col. Thomson would admit that there were not very many good gardens in Canada, but the great reason was that people did not set about making them in a proper manner. The garden was sometimes merely a small plot in the corner of a field, and perhaps very indifferently fenced. When the plants were getting into a good growth, hogs or cattle might break in and destroy a great part of them, and then the remainder were not considered worth cultivation, and of course the attempt at a garden resulted in nothing. He contended that it was absurd to say that gardening could not be profitably conducted in Canada. He believed that there was no country in the world where it could be carried on more profitably. The only thing necessary was to pay proper attention, and eradicate

the weeds at once as soon as they appeared. If allowed to get a start, and predominate over the plants, it would require five times the trouble afterwards to get rid of them. In regard to schools, he would be very glad indeed to see half an acre of ground attached to each common school in the country. It would afford profitable employment to the master, and instruction to the pupils. We should endeavour by all means in our power to cultivate a taste for gardening. If we could do so, we would effect great good. The farmer had many leisure moments, apart from regular working hours, that he could devote to the cultivation of his garden. He thought it preposterous to say that any farmer should buy his vegetables in the market, instead of producing them in his own garden.

Mr. Fleming said that when farmers could produce 800 or 1,000 bushels of Swedish turnips per acre in the field—as he had reason to know some gentleman present had done—there was no good reason why proportionate results in the cultivation of other products could not be obtained in the garden. He concurred in the importance of the drill system. It afforded great facilities for keeping crops clear of weeds.

Mr. McDougall did not wish to be misunderstood. He did not wish it to go abroad that he recommended farmers to buy all the vegetables they required. He thought, that Col. Thomson, however, imposed rather too heavy a task upon the farmers. He did not wish to be ungallant, but he would venture to say that the tending of the garden was rather the province of the ladies. The sterner sex of course ought to do all preparatory work, such as digging, draining, &c., but he thought the ladies might be expected to do all the lighter part of the work, such as sowing the seeds and pulling the weeds. If we expected the farmer, after coming home tired from ploughing or mowing, to go and weed in the garden, we should be disappointed. He did not suppose there was any “royal road” to the cultivation of the garden. It must of course be accomplished by steady attention; but when farmers saw the gigantic products that gardeners obtained, they were sometimes apt to suppose that there was some mysterious method of doing it, that they did not understand.

Professor Croft, alluding to a royal road to gardening, said the nearest approach to one he had ever seen was contained in a little book circulated a year or two ago, in which, amongst other similar things, was recommended as a method of destroying Canada thistles to drop a little spirits of turpentine in the stalk of each. (Laughter.) He would recommend, if Mr. Mundie's paper should be published, that it should be accompanied by a short list of the best varieties of each kind of garden plant that could be recommended as most worthy of cultivation in the farmer's garden.

Mr. George Leslie thought this a valuable suggestion of Professor Croft's. Many farmers did not know which of the different species of plants were the most desirable for cultivation.

After some further remarks from Messrs Croft, McDougall, Denison, and other gentlemen present, a Committee, consisting of Messrs. Croft, Buckland, Mundie, Fleming Leslie and Gordon, was appointed to make out for publication a brief catalogue of the seeds most worthy of cultivation in a farm garden. [The list was published in our April No.]

The club then adjourned.

UNIVERSITY COLLEGE.

To the Editor of the Agriculturist.

Sir,—I am requested to make some enquiries concerning the Agricultural Department in University College, Toronto, which if you will be so kind as to give us the necessary information, either by private letter or through the medium of your valuable periodical, you will lay myself and others under an obligation. What we want to know is,—

- 1st. What are the preliminary acquirements a young man is expected to have, in order to be admitted as a scholar or student in said Department?
- 2nd. What branches taught in our Common Schools would be more particularly desirable for a young man to make himself acquainted with as preparatory to a course in the above branch?

3rd. What length of time is necessary for a lad who has previously had an ordinary training in the Common Schools, to go through with a course of study particularly connected with Agriculture?

And 4th. What is the expense attached to such a Course, independent of board?

Norwich, April, 1856.

Yours, &c.,

J. MCKEE.

REMARKS.—We have much pleasure in answering our correspondent's enquiries, which we shall take in the order they are put.

1st. The necessary requirements for a young man to enter the Agricultural Department of University College consist of a general acquaintance with the English language, Arithmetic, Geography, and all such branches as are usually taught in ordinary schools.

2nd. Special attention should be given to Elementary Mathematics, Physical Geography, Mechanics, and Natural History, as more or less of these branches is now taught in most of the Common Schools.

3rd. Instruction in the Agricultural Department of the College commences in October, and terminates in April. The Course comprises the history, science, and practice of Agriculture. An intelligent and studious young man, particularly if he has some practical knowledge of farming, would make considerable progress during one Session, but the regular Course is spread over two.

4th. The amount of fees for three Courses of Lectures in the same number of departments, is £2 10s., for the academic year. Occasional students can attend any number of lectures, including the whole College Course, in all departments of literature and science, for £4, for the year.

The Agricultural student should attend the following Courses—viz., Chemistry, Natural History, including Botany; Geology and Mineralogy; Meteorology; History and English Literature. These subjects in connection with the history, science, and practice of Agriculture, would most beneficially occupy the whole of his time. Thus a young man might in the course of one or two winters accumulate a considerable fund of literary and scientific information that would be of the greatest service to him in his daily pursuits.

The University of Toronto has recently established five Scholarships in Agriculture, of the annual value of £30 each. It is to be hoped for the sake of the character of our agriculturists, that these Scholarships will be speedily taken.

Professor Buckland will always be happy to afford any information that may be desired in his department.

LIVE FENCES.

To the Editor of the Agriculturist.

MR. EDITOR,—I have read, with much interest, your remarks and those of other members of the Agricultural Central Club, on the subject of Live and Dead Fences. And as you appear to invite discussion on this matter, which is daily becoming one of greater importance to the community, I will make no apology for troubling you with a few suggestions bearing upon the subject.

When I move abroad, I generally keep my eyes open to what is going on about me in the fields and by the waysides—an open book, where those that run may read. I have noticed several kinds of Fence, which have been adopted in lieu of the "snake," and "post, and rail," either as being more sightly, more effectual, or less expensive. Some of these

seemed to be experimental, but as they do not enter into the description of those noticed by the members of the A. & H. C., I will venture to mention a few:—

First.—A good and efficient Fence, made with a solid foundation of surface stone, between two and three feet high, surmounted with a pair of stakes and a rider. Another more substantial, but more expensive—made with oak posts, and a sawn rail morticed in. This sort of fence, where stone is abundant, must prove in the end very advantageous, answering a double purpose, that of security, and clearing the soil of an encumbrance that must necessarily be removed. In the *first* example, labour is the only outlay; and it is labour that pays itself. A third is composed of an earthen or turf bank, surmounted with a stout post and rail, or two posts, which are secured by passing into auger holes in the post. This looks very well, and if well banked and turfed, would be efficient—the turfing or sowing down with grass and white clover would, I think, secure it from heaving with the frost.

A fourth was constructed with large stones intermixed with turf, which was well wedged and beaten in between the intervals—the large stones were so placed at distances along the line as to form buttresses. There were seedling thorns, young hemlocks, and cedars introduced into this fence, but few of these survived the first year; there was no ditch, only a trench, from which the turf and earth was taken. The bank was smoothed and sown with grasses, and forms a good embankment. I think it was also furnished with stakes and riders. The gate posts were built in with stones and turf in this fence. It strikes me it might be advantageously adopted in many situations.

With respect to the Canadian Thorn as a fence, I think it quite as well adapted for fencing as the English or small-leaved Thorn. When young, its thorns are much more formidable, and by keeping it headed in for a year or two it would thicken quite as well.

To ensure sufficiency of plants, the seeds might be sown in a double row, steeping them for some days previous to sowing in *hot water*, the vegetating principle which is long developing in those stony-seeded fruits would be accomplished. If you can succeed in raising the plants by seed, where they are to grow ultimately, both labour and time are saved. Were I making the experiment, I would sow my seeds in the fall, or as early in the spring as possible. Nature never errs; she casts her seed into the lap of mother earth as soon as they are matured, or leaves them to the sowing of the birds of the air; these assist unwittingly in forwarding the vegetation of many of the hard-fruited plants and trees—the internal heat and fermentation to which they are subjected in the stomach of the bird prepares them for growth. Possibly a certain degree of fermentation, by laying the ripe fruit in heaps to heat, might answer the same purpose.

A living fence, say for a lawn or garden boundary, might be made very beautiful and serviceable, by planting the following varieties of trees and shrubs:—young hemlocks, cedar, spruce or balsams, birch, buck thorn, cockspur thorn, sweet briar; gooseberry slips, either wild or tame, or both; currants, especially black currants, which grow very stout, thick, and woody as they grow old; the bush honeysuckle, or twin-flowered honeysuckle, and the leather wood, give a pretty effect by the light bright verdure of the foliage, mixed with the dark evergreens; wild plums and English damsons may be sown, and suffered to remain as standard; also the wild red or choke cherry, which are most lovely either in fruit or flower. The tops of the larger trees must be headed in to a uniform height with the rest of the bushes. A few roses give a charm, either in flower or fruit, to an ornamental fence of this sort.

A wattled fence, which is often seen in the wooded parts of England, forms an excellent nursing fence for a live hedge during the first few years of its infancy. This simple rustic fence is constructed with stakes about four feet high, sharpened and driven in about two or three feet apart; between these upright stakes slender wands, as of the hazel or elm, or any tough fibrous saplings, are interlaced and well pressed down, so as to form a close rude basket work—a twisted band of willow or osier completes the top. Then with the bill-hook, the hedger trims the inner side of the fence, leaving the outer with the twigs and sprays untouched, as it presents a greater difficulty to the inroads of frogs and fowls. The main objection to this picturesque fence is, that the snow lodging in it rots the sticks in the course of a few years, when it becomes mossy and gappy, and easily broken through: nevertheless it forms a good support to shrubs, if you wish to plant a moss fence within it. A fence formed of gooseberries alone, strengthened by a wattled fence in the rear, may be made impervious, by keeping it well trimmed. I have seen a sunken fence or haier surmounted by a hedge of gooseberries, which was impassable by man or beast, and produced yearly some good pie or preserving fruit. In this country

the gooseberry runs to wood very fast, thickening from the roots, so as to present a very great barrier to gathering the fruits, and tending to produce mildew by preventing a due circulation of air through the bush. Now, this characteristic as a hedge plant would be very desirable, provided we could command a certain height, the want of which was obviated by the sunken fence in the instance quoted above. As an auxiliary, the gooseberry may, at all events, be made very useful in a mixed garden fence. The common privet is also a good fencing shrub, besides having the advantage of being an evergreen. Our forests and plains produce many useful and valuable shrubs, that might be introduced very advantageously to the hedgerow; but, in most cases, to effect this change the seeds should be sown in the garden, and the seedlings transplanted, as very few shrubs nurtured in the thick forest shade will stand the change effected in their habits, by being transferred to open ground and sunshine.

To such fortunate persons who have time and inclination to attend to ornamenting the homestead, these suggestions may not be quite useless. It is rarely that the poorer class of settlers, however well disposed, can adopt and carry these improvements into effect; but while he turns back with a sigh to the flowery hedgerows of dear Old England, is obliged to adopt the universal snake or post and rail fence of this new country.

Oaklands.

C. P. T.

STOCK RAISING IN CANADA—THE EXPERIMENTAL FARM.

To the Editor of the Agriculturist.

SIR,—Without going at present into detail, I would wish to draw the attention of yourself, as Editor of our agricultural paper, and our Board of Agriculture, whose office it is to foster the progress of our agricultural exertion and turn it in a right direction, to the importance to our country at the present moment that this exertion be turned into the best and most profitable channel. Our agricultural activity has of late years been most cheering, and we begin now to produce largely beyond our own wants; indeed, we have arrived at a point where an important feature of farming is not only production, but a consideration of the market which that produce shall supply. In older countries, whose means of production have been slowly developed, these things can be safely left to the natural working of demand and supply; but so rapid is our movement in the present day, at the same time we are sorry to say, it is among our agricultural classes accompanied by such a vast amount of commercial ignorance—perhaps the necessary result of their isolated individual position—that it becomes the province of such an organization as our Board of Agriculture to seek out information as to the most advantageous articles and modes of production, and most profitable sources of demand and methods of supply, and to diffuse that information as much as possible, so as to influence individual effort in a direction which shall at once be profitable to the farmer himself and the community at large.

In reflecting on the strides which agriculture has been making here of late years, we cannot but be struck with the anomaly, that the direction in which we are moving tends greatly to the course of the employment of more of the expensive article of labor to smaller portions of the cheap article of land. Now what brings us all to Canada?—Is it not the comparative cheapness of land. Why then regret that advantage to work at an even greater disadvantage than at home?

To illustrate my position, I will take the Turnip crop, which we are now beginning in some districts to grow very extensively. I will not at present go into minute calculations, but leave that for another time, when the matter may be examined more in detail. But take, in the gross, your land at 15s. per acre in Canada—at 40s. in England; this allows 25s. an acre for the difference of cost of labor between employing here men at 5s. a day, and laborers in England at a shilling—at which price in the turnip districts most of the work is done. Does any one imagine this amount will cover the difference in

the price of labor from sowing until housing? But again: our turnips are made into beef, at an extreme price of \$7½ per hundred, while at home you may take, at the same proportion, \$12½—making the selling price nearly double, especially when you reckon the additional cost of attendance. Again, in England, Fall Wheat can be sown after Swedes; here you have no chance for anything but a Spring crop, while the operations of hoeing and pulling interfere seriously with the work of the busiest seasons of our year. Our climate seems certainly not so well adapted to the Turnip as the moister one of England, especially during the earlier stages of its growth, when the elements of rot and decay seem here often introduced. While, after all, we question if filling the bellies of our cattle with such cold food is the most profitable mode of feeding in our severe winters. What say our theorists about animal heat and combustion? I should rather imagine a large proportion of the oleaginous and carboniferous seeds more suited to the purpose, combined with proportions of pea meal and clover hay, and straw, all of which we can grow so as to take advantage of our cheap article of land with little labor as compared with root crops.

I have spoken of turnips merely as an example of the labour-expending system, which, among its other advantages, keeps us thoroughly dependant on our most agreeable supply of workmen, not out of any malice at the splendid specimens of Roots we saw at last year's Show; for we were, we believe, the chief agents in producing, and hoed ourselves, twenty years ago, the first acre of Swedes grown in this quarter, drilled after home fashion, we were determined to try the matter in opposition to the misgivings of some of our neighbours, now extensive growers, who then contended that Swedes could not be grown in Canada, to any extent at least.

But we will perhaps be deemed more heretical still, when, with Mr. Mechi, we go a little further, and attack the whole Stock trade of Canada in toto, in its present shape. And we would suggest that this country is not competent, with her present breadth of land, to maintain the Stock now on it without an extravagant expenditure of the costly ingredient in its production—labor. She has now reached the point when she can supply her own demand, and prices must in future be, in a large measure, regulated by extraneous markets, if, that is to say, we go on increasing our production. Now, these markets are all to the south of us, and have every facility of supply from sources more southern still, and westward, where the wintering of Stock does not amount to one-half its cost and risk here; ergo, our Stock must be sold at nearly the same price as the supply brought up and wintered on the pastures and corn stubbles of those milder regions. Take our Pork, too, and we think our farmers are becoming satisfied that their freezing litters cannot compete with those mild districts which produce 50 or 60 bushels an acre, crops of corn; on which the pigs only need to be penned, with frequent changes, to complete their fattening.

But we fancy we see agriculture rising *en mass* in indignation—where are we to get our manure: we can't do without dirty dung. True, O king; but there are many ways of killing a dog besides hanging him, and we have little affection for too much of your dirty work. We think you will get your manure easier by letting your cheap land rest a season, and grow a green crop, to be ploughed in, and add some of the more minute ingredients required in the various classes of vegetable growth. This will be easier, we say, and cheaper, than leading out large quantities of barn-yard manure, which, from its rapid decomposition and great waste, is often very inefficient in its operation here. Now let us see how you could thus manure an acre from itself. Take an acre of second year's Clover, for example:—

<i>A Bare Fallow.</i>					
Say rent	£0	10 0	4 ploughings and harrowings...	£2	0 0
Plaster and proportion of seed	0	5 0	Loading 20 loads dung—ten		
Three fallows and harrowings..	1	10 0	loads a day, horses and men		
Extra manure	0	10 0	at 12s. 6d.....	1	5 0
			Spreading	0	3 6
			Rent	0	10 0
	£2	15 0			
				3	18 6
				2	15 0
				£1	13 6

Thus the land is ready for seed, on a rough estimate, at 33s. 6d. less per acre. Most of our wheat land in Canada might be managed after this fashion, and, indeed, we maintain that, after once being cleanly laid down, the land could be kept in better order under the clover course than the fallow; and the crop might be repeated at intervals of a year less, while the fibrous roots of the clover would give the land a grip without being stiff or hard, which would prevent the wheat plant from heaving to any extent in spring. Indeed, fibrous vegetable matter, to a moderate extent, lessens the conducting power of the soil, and tends to exclude the frost; while we know, that nothing is a greater protection against winter than the numerous little points and matted clods presented by such a surface.

We should be chary of growing the coarse crops, to any extent, on our Fall Wheat lands, as, from our experience in the average of years, we find their dirt greater than their profit, where we have no cheap labor for weeding. A clean mow keeps down all dirt, and even kills our thistles. We merely mention clover as an illustration; doubtless many other plants would be found adapted to our purpose. We feel that thus we should be taking advantage of our climate. In England your green material would in many seasons lie undecomposed, in wet lands, for a twelvemonth. Here two months will in summer suffice to destroy its fibrous organization. Our winters, too, point to the same course, from their large amount of mechanical action. Turn over a boulder lying on the surface, and if it be not very solid, you find winter has shelled off a quarter of an inch of disintegrated sand from its surface. On this naturally pulverized material, the acids produced in the soil by rapid decomposition of vegetable matters, at once act chemically, and food for plants is thus formed at an enormous ratio, in excess of its production in the slow, sober climate of England.

These processes, combined with the difference of our mercantile position, call on us Canadians to adopt a system of husbandry widely different from that of the old country. We have less time to do our work in, but our country is faster, and we must be faster too, and must embrace all means which nature offers to help us.

In these rough remarks we would be far from seeking to lessen our Stock: we can eat all we yet have, but we would put them over more land, redeemed first from the growth of unprofitable crops, next from the forest. We would have more pasture, and feed our Stock fat before winter on abundant herbage; then freeze some, salt some, preserve some by chemical agencies, say charcoal, and keep a little for the epicures fed at a costly rate on turnips and oily seeds, and clover hay; but make them pay first if they want it.

Young Stock might be wintered on our large abundance of straw, with a little allowance of oil-cake; crushing establishments would arise, whereby a portion of the oil might be extracted from the seeds grown; and perhaps flax or hemp might be made from a portion of our produce, so as to increase the profit, while by this process of management, the crop being often repeated, one-fourth more wheat might be grown on the same extent of land, with less labor than at present. Wheat seems the staple for which Canada in its present position is peculiarly fitted. We doubt if the United States will ever do much more than supply their own consumption; so much of their surface is situated in a poor wheat-growing region. While they can produce almost any amount of Stock for their own supply as well as exportation, our Stock cannot be shipped to European markets fresh, and salted; it must meet a heavy and increasing competition from milder regions. Our wheat, until we get a region to the north to take our Stock, must be our main stay. Our fine water communications will carry it to all quarters of the world, at a trifling cost; and all Western Europe, and even the Southern Colonies, will ever want it while it is an article of produce, under proper management, peculiarly adapted to our climate. But a large produce of it on our soil, whose vegetation is so rapid, can only be kept up by taking advantage of its own reproductive powers. Our land will exhaust its fertility unless we allow it to renew and increase its vegetable ingredients, by taking advantage of its own capabilities. Grow enormously bulky crops and plough them down, and you maintain its vitality in an ever-increasing state, neglecting not, however, to attend to the action of its mineral ingredients. We speak of winter wheat lands—a large portion of our Province. For our black soils sufficient employment would be found, under such a system, in producing the seeds and coarse grains required for feeding.

We have been impelled to these few observations by the reflection, that the Canadian farmer is not making use of the means placed before him; he is not taking advantage of his cheap land. Our farms are too small, and our farmers are among the hardest work-

ing slaves on earth, merely because they are attempting to carry out a system unadapted to their opportunities. We are sorry to hear so little in such directions from our Model Farm School. Our farmers keep no accounts, but, generally speaking, calculate their profits by rule of thumb; but surely it is not so there, and we would like to hear more of the results of profit and loss—the true index of good farming. Have our Board of Agriculture never thought of establishing a medium through which our farmers wishing to improve might get a cheap and reliable analysis of soils and manures. Surely where the labor of handling is so costly, this is the country where we ought to deal in the less bulky manures.

ROBERT HUME.

Tyne Dale, Port Hope.

METHOD OF CURING BAD TUB BUTTER.—A quantity of tub butter was brought to market in the West Indies, which, on opening, was found to be very bad, and almost stinking. A native of Pennsylvania undertook to cure it, which he did in the following manner: He started the tubs of butter in a large quantity of hot water, which soon melted the butter; he then skimmed it off as clean as possible, and worked it over again in a churn, and with the addition of salt and fine sugar, the butter was made sweet and good again.

BAD EFFECTS OF GRASS ON COLTS.—When horses are turned out to grass in the spring of the year, the succulent nature of the food causes them to purge, often to a great extent; this is considered by many persons a most desirable event—a great misconception. The herbage is overcharged with sap and moisture, of a crude, acrimonious nature, to such an extent that all cannot be taken up by the organs destined for the secretion of urine, or by the absorbent vessels of the body; the superfluous fluid therefore passes off through the intestines with the indigestible particles of food, and thus the watery feces are thrown off. Flatulent colic or gripes is a frequent attendant. The system is deranged; but the mischief does not terminate here. If the purging is continued, a constitutional relaxation of the bowels is established, very debilitating to the animal, and often difficult to control. I am so decidedly opposed to unrestricted allowance of luxuriant grass to horses at any age, that nothing could induce me to give it to them. After the second year, hay should form a considerable portion of the daily food in summer to every animal intended for riding or driving. So says the *Mark Lane Express*, an English agricultural journal of high character.

SOAP.—To make Windsor soap, slice the best white soap as thin as possible; melt it in a stew-pan over a slow fire; scent it with oil of carraway, or any other scent, and then pour it into a mould made for that purpose. When it has stood for three or four days, in a dry situation, cut it into square pieces, and it is fit for use. An excellent toilet soap is thus made: Take a quarter of a pound of old Castile soap, slice it down into a pewter jar, and pour upon it two quarts of alcohol; place the jar in a vessel of water at such a heat as will cause the spirit to boil, when the soap will soon dissolve; then put the jar, closely covered, in a warm place until the liquor is clarified; take off any scum that may appear on the surface, and pour it carefully from the dregs; then put it into the jar again, and place it in the vessel of hot water; distilling all the spirit that will arise; dry the remaining mass in the air for a few days, when a white transparent soap will be obtained, free from all alkaline impurities, and perfectly void of smell.

A VALUABLE HINT TO BUILDERS.—The *Scientific American* publishes the following suggestion from a correspondent, and endorses it as sound and reasonable advice. We venture to say it is worth more than five dollars, to any man who is about to build a house in our cold climate:—"This cold winter brings to mind a matter connected with the building of houses which I do not remember ever to have seen in print, and which, if generally known, is seldom practiced. It is this: in any cold climate cellar walls of houses should never be filled in around with loam or clay, or earth that retains much moisture, because the frost expands it, and it exerts a great pressure against the walls, tending to thrust them out of position. The effects of this are seen in the many cracked walls; the breaking of window and door sills and lintels; unjointed verandahs; and windows and doors rendered incapable of opening and closing, &c. In our New England States, this costs us many thousands of dollars yearly, all of which may be saved by filling in a few inches of sand or clean gravel next the walls."



FOUNTAINS.

Iron Fountains are now made in a great variety of forms, some of which are highly ornamental. They are used for gardens and lawns where a running stream can be obtained, either by means of a water ram, or by taking advantage of water running at a higher elevation than the spot selected for the Fountain. There are many persons in Canada whose situation is favorable, and whose means will warrant the expense of this desirable ornament. The one of which the above is a representation, is of the composite order, embracing a variety of figures, each of which might be taken for a single fountain. They are made in parts, and can be sent from the manufacturer's like any other castings.

TO KEEP CIDER SWEET.—I have tried several ways of keeping cider, and have found the following to succeed:—I let my cider work until it has fermented a little, and then pour in a tea-cup full of mustard seed in each barrel. Please insert this for the benefit of those who love good sweet cider in the winter. L. R. W.

VIRGINIA EGG BREAD.—Dissolve one table spoonful of butter in three and a half pints of milk; add one quart of Indian meal, half a pint of wheat flour, a little salt and two eggs well beaten; mix all well together, and bake in a buttered tin.

AGRICULTURAL MACHINES.

SEYMOUR AND MORGAN'S REAPER VERSUS McCORMICK'S.

To the Editor of the Canadian Agriculturist.

SIR,—As you are in the habit of noticing in your valuable paper the different Agricultural implements, which are now being made in almost all parts of the country. I trust you will allow me to call attention to some of the articles got up by Mr. Thomas Goodfellow, at his machine shop in the flourishing village of Bradford, in this Township. The articles manufactured at his establishment are of such skill and material, that in many respects they cannot be surpassed north of Toronto. He expects to turn out about fifty Reaping Machines this season, some of which are now ready for the field. I had the pleasure, on Monday last, of seeing one of them in motion; and as I have had the opportunity of seeing and working several other machines of different make, which have been brought into this part of the country, I can safely say that it is superior to the best of them, both for workmanship, steadiness in motion, and lightness of draught.

Since I commenced to write, I have received the April number of your *Agriculturist*, wherein I notice McCormick's Reaper described as being the best for the farmer's use. I would take the liberty of asking the gentleman who works that small farm, on what principle he calls it the best? I am certain it is not for lightness of draught, nor for the easy position of the raker in tending it. I think he will find that Seymour & Morgan's will cut from eight to ten inches wider, and can be drawn by one span of horses with as much ease as McCormick's can with two span, especially on uneven ground. I can drive my Reaper through a gate or bars ten feet in width, without any difficulty. I last season cut eighty acres of wheat, that averaged thirty-five bushels per acre, in six days, with one team of horses. When you can do that with McCormick's Reaper, I will take the trouble of writing again.

Yours sincerely,

A FARMER.

West Gwillimbury, April 22d, 1856.

Our friend in West Gwillimbury has slightly mistaken the tenor of our remarks in the last number. We did not describe McCormick's Reaper as "the best for the farmers use." If "a Farmer" will read the remarks again, he will see that we took some pains to guard ourselves on that point. Again, "the gentleman who works a small farm," referred to in the article, sold Seymour & Morgan's machine because it was *too large* for his gates as well as his fields. He did not buy McCormick's in its stead. Probably our correspondent had been reading Mr. McCormick's advertisement, and mixed up his assertions with our qualified opinions.

PLANT POTATOES EARLY.

We think we cannot give our readers better advice than to plant their potatoes, of whatever variety, early. Our own experience last year with a great number of varieties, as well as the results of late planting in the case of several neighbors, convinced us of the disadvantage of the practice. The frost last year killed the tops in many fields before the tubers were full grown, and in all such cases loss has been sustained. We find some remarks in the last No. of the *Country Gentleman* in corroboration of this view. The writer says:—

"Let those who are not yet satisfied that this is a good rule, plant a few rows or a small patch as soon as the soil is dry enough to work well, and the balance of the land intended for this crop either all at once a few weeks afterwards, or in portions at intervals of a week or so between each planting. Of each planting let a square rod or some other area or measure be taken, and let the result at harvest-time, both as to *quantity* and *quality*, be carefully noted. The result, we are confident, will prove interesting and instructive, not only to those who try the experiment, but also to many who, like ourselves, would be

glad to have a report of the experiments and the results given to the public through this paper.

Until such experiments are made, and the results made publicly known, those who endeavor to conform their practice to the best ascertained facts, or best established rules, will plant early. Experiments have already been made in sufficient number and with sufficient accuracy, to make it almost a settled matter that potatoes planted as soon as the soil is mellow and dry, will yield a more abundant and sounder crop than the same kind of potatoes on the same or similar soil, when planted 10, 20, or 30 days later. The most satisfactory of such experiments which have been reported to the public are those of Mr. H. H. Eastman, of Marshall, Oneida Co., N. Y., a summary of whose various experiments in potato culture may be found in the vols. of *The Country Gentleman* and *The Cultivator* for 1855. For the sake of those who have not these vols. at hand, we may say that to test the question of early, medium, and late planting, one plot was planted in 1852, on the 18th of May, another on the 23rd of May, and another on June 8th, and these plots yielded respectively at the rate of 142, 131, and 100 per acre. The experiment was again tried in 1853, and resulted as before in favor of early planting. While those planted May 9th yielded 104 bushels, those planted May 30th gave but 70 bushels, and those planted as late as June 18th gave only 45 bushels per acre.

Previous to the invasion of the rot, potatoes were generally planted in June; but the old rule must now be laid aside, and the new one at the head of this article substituted in its place, in order to secure the best crops."

HEREFORD CATTLE.

To the Editor of the Agriculturist.

Owego, Tioga Co., N.Y., March 31st, 1856.

DEAR SIR,—As your paper frequently contains the *praises* of Short-horn Cattle, and exhibits *portraits* showing enormous size, allow me to send you the *actual weights* of some of the prize Herefords, and prices obtained for them. The following is an extract from a letter to me from Wm. Heath, Esq., Ludham Hall, England, dated March 10th, 1856, the well-known winner of Prizes at Smithfield and Birmingham Cattle Shows:—

"Since receiving your letter, I have been staying in Shropshire and Herefordshire, so thought would put off writing to you until my return. You wish to know the weights of some of my prize Herefords. A two years and ten months' Steer (four quarters, beef only) weighed 92 stones (1280 lbs, 14 lbs to the stone), winner of the Gold Medal given for any breed of all ages in London, 1850. A four years old and eight months' old Ox, 134 stones (1876 lbs), winner of £30 in London, 1851. One three years and nine months' old, 126 stones (1764 lbs), winner of second prize of £15. The next Hereford I showed was at Birmingham, 1853, two years and eleven months' old, winner of the Gold Medal and £30. I brought him home again, and showed him the following year in London; he won the first prize of £25, and, had he had justice done him, would have won the Gold Medal, 1854. I showed at Birmingham a Hereford the same year, winner of the Gold Medal and £30. This is very singular. These two animals were twins bred by Mr. Thomas Carter, Dodmore, Ludlow; the former weighed 129 stones (1806 lbs), the latter 133 stones (1862 lbs); their ages, when killed, were three years and eleven months. I bought them the end of October for £50, sold them, December 1854, for £120: they won me in money £75, and the two medals are worth £40 for old gold. These two Herefords made me in all £245. I showed a Heifer, winner of first prize of £10 at Birmingham, four years and ten months' old, weighed 96 stone (1344 lbs). I showed in London this year, winner of first prize of £25, sold him for £65, three years and eleven months, weighed 128 stones (1792 lbs). A Steer I showed in the young class in London, 1854; he had not a prize awarded him, which, in my opinion, he should have had; so I had him brought home again, though blamed by several people, but I said if he was not a good one I could not get one. I showed him this year at Birmingham, won the Gold Medal and £30; sold him for £67 10s; he weighed 136 stones (1906 lbs); was three years and eleven months old. You see he was a good one at last. It is no use having

an opinion if you do not back it. I am not a breeder myself, but buy every year from four to five hundred beasts to graze, so have a chance of picking out some good ones. About 260 of these are Herefords, the rest Devons and Scots. I do not like Short-horns; they are *tender and large consumers*, want to be kept *high* and warm, do not pay so much money. These weights are all for beef only, and 14 lbs to the stone.

"I keep 430 South Down Ewes; they have just finished lambing; very good luck; they have more than 630 lambs, lost only four ewes and a few lambs. The weather is fine and nice for them; and every appearance of an early spring. Write me when you receive this, and at any time I can give you any information, will willingly do so.

Yours truly,

WILLIAM HEATH."

Mr. Heath breeds early lambs for the London market, feeds the ewes the same year, buying in the fall—a practice with many graziers in England.

The following is an extract from another very extensive grazier in England, Richard Rowland, who will never graze any other breed but Herefords, which was the practice of his late uncle, Mr. Westcar, the noted Buckinghamshire grazier. The following is an extract from Mr. Richard Rowland's letter to me:—

"I have not shown Oxen of late years; the breeders, in a great measure, have been the exhibitors. I was an exhibitor for some years after I came here, and took three prizes with Hereford Oxen, which weighed from 260 to 270 stones, 8 lbs to the stone. This was beef, hide, and rough fat, and that was about the weight my late uncle, Mr. Westcar's large Oxen reached. I enclose the prices of some of his Oxen, the weights I do not know, except in a few cases."

I chance to have a copy of the weights of Mr. Westcar's Hereford Oxen that took first prize at Smithfield, in 1810, 1812, 1813, 1814, and 1815, the first four are given as follows; they were all seven years' old, quarters, hide, and loose tallow included, 2147 lbs, 2059 lbs, 953 lbs, 2141 lbs. Those of Mr. Rowland's corresponding from his weights by the stone, are 2080 lbs—2160 lbs.

"A memorandum of the price of twenty fat Herefordshire Oxen, sold by the late Mr. Westcar, of Creslow, Buckinghamshire, England, from his book—

Dec. 16, 1799—Sold Mr. Chapman, Fleet Market, London, 2 Oxen for...	£200	0	0
“ 4, 1800—1 Ox to do.....	147	0	0
“ 15, “ —1 Ox to Mr. Harrington, London	100	0	0
Nov. 26, 1801—6 Oxen to Giblett & Co., Bond Street	630	0	0
“ “ 1802—1 Ox to do.....	100	0	0
Dec. 31, “ —1 do., to Mr. Chapman.....	126	0	0
“ “ “ —2 do., to Mr. Horwood, London.....	200	0	0
“ 4, 1803—1 do., to Mr. Chapman, do.....	100	0	0
“ 19, “ —1 do., to Mr. Reynolds.....	105	0	0
“ “ “ —1 do., to Mr. Giblett.....	105	0	0
“ 5, 1804—1 do., to do.....	105	0	0
“ 4, 1805—1 do., to do.....	100	0	0
Nov. 28, 1811—1 do., to Mr. Chandler.....	105	0	0

£2123 0 0

Average..... £106 3 0"

A extract from a letter from Edward Price, Esq., Pembridge, Leominster, Herefordshire, England:—

"In December last, I sold to the agent of his Royal Highness Prince Albert, 4 1-year-old Hereford Steers for £130. The weight of my three years and ten months' old Hereford Heifer, which took the first prize of £10, and £20 extra money, and Gold and Silver Medal at Birmingham, was 18 scores per quarter in her beef (1440 lbs). The only reason I give the weights and prices of these Herefords is—the Short-horn breeders have always been *boasting of early maturity and great size*. I contend that the *weight is the proof*. Now I want to see Short-horn breeders show such *proofs* as above. I quote from Mr. Lewis F. Allen's Short-horn Herd Book, page 59, the following:—'Hutchinson says—No breeder

acted with so much foresight and sound policy; for who but themselves would have thought of feeding any animal from calfhood until seven years of age, *in so extravagant a manner*, as the white Durham Heifer and the Durham Ox were fed, and made *monsters* of? The scheme was a deep-laid one, and succeeded to a miracle. She, as well as the Durham Ox, was shown all over the kingdom, and raised the character of their breed in the opinion of the world, to the highest pitch of eminence.' ”

I wish every one of your breeders and readers to examine this quotation from the Short-horn Herd Book; and then tell me whether it does not represent *deceit of the worst kind*? Does it reflect any credit on the author, or to him who quotes it, as praise to extol? Does it enhance the value of Short-horns? In my opinion it *condemns* them in the estimation of every upright, honest person. And what was the weight of this noted, famed Ox, when he was killed, at eleven years' old? According to Mr. Berry and Mr. Allen's quotations in the same Herd Book, he weighed, beef, hide, and tallow, 2620 lbs. I have frequently heard it said in England, that Mr. Day used to give this Ox *many bottles of port wine to make him sleep*. I was present when Mr. Berry was asked whether this was true? and he equivocated the answer, but admitted that he was extravagantly fed and forced to the extreme. I will call the attention of any reasonable, *well-bred*, intelligent, or *unprejudiced* man to the weight of the lightest Steer above named, and then tell me whether he would not have weighed *heavier* than this noted, puffed Ox, if forced under the same treatment? And I ask whether Short-horn advocates generally have not pursued much the same course, forced their breeding animals, to obtain *artificial prices*? I again ask them, whether these are their principles of breeding?

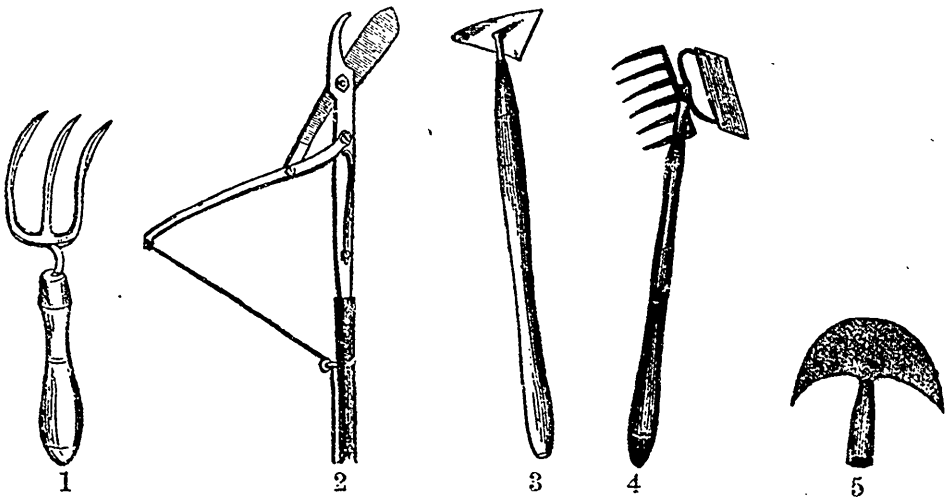
I was very much amused a few weeks since, while visiting Mr. M. McMicking of Stamford, Canada, who has been a breeder, and an advocate for Short-horns, but has now two Hereford Cows and a Bull. Mrs. McMicking thought the Short-horns gave so much more milk than Herefords, and wished to get rid of the latter; but when the Herefords were absent at the Show at Cobourg, Mrs. McMicking then found that their *butter* greatly diminished, which changed her views from Short horns to Herefords. Whoever tries these two breeds fairly together, will find this to be invariably the case. I contend, where you find *first quality of beef* in any animal of any kind, and (which never varies in a well-bred Hereford) you find the first quality of milk, though not the quantity. I am thoroughly convinced that Herefords will make more beef and more *butter*, for the food they consume, than any other breed. They only want to be tried, to be proved and appreciated. My impression is, that they can beat the Short-horns *in every point*. The breeders of the latter have had every opportunity, by *challenges*, to test this, but they have never had courage enough to meet them. Had they confidence in their breed, some of them would have had *pluck* enough for competition to *examine* Mr. Allen's quotations of “Hubback,” the noted Hubback, and it corresponds with the *forced* description of the white Heifer and the Durham Ox. All is mystery. Again, *examine* the three different names of the Short-horns quoted by Mr. Allen, and tell us which is the “name, proper.” I could go on with many other corresponding quotations from Mr. Allen and others; but these are enough.

I shall be happy to see some explanations why such *stuff* should be connected with the register of “first-class Cattle,” only to condemn.

I am, dear Sir, yours truly,

WILLIAM H. SOTHAM.

P.S.—It will be remembered that where most of the above prizes were taken, Short-horns numerously contended, and these statements are made by graziers and not by breeders, except in the case of Mr. Edward Price's Heifer.—W. H. S.



GARDEN TOOLS, &c.

In the March number, we gave cuts of several pruning tools, &c. We now add a few more, for use more especially in the garden.

Fig. 1. is a Ladies' Garden Fork. It is made of steel, neatly finished, is light yet strong, and is very useful for working among plants and flowers. They are made with either round or flat prongs.

Fig. 2 is called an "Avarrancator." It is attached to a pole, and operates by means of a lever moved by a cord and pulley. Its use is to enable a person, standing on the ground, to prune trees, some of the branches of which could not, perhaps, be pruned by any other process. Branches of one inch in diameter may be easily cut off with this instrument. Avarrancators of small size are also very useful in cutting off from shade and fruit trees small branches to which insects have attached themselves; they are also used for gathering fine trees, which, when cut, will fall into a basket attached to the instrument when used for this purpose, and for cutting scions and buds, which it is always important to take from the top branches.

Fig. 3 is a Tree Scraper. The cut represents a very convenient form for scraping and smoothing the bark of trees. It is simply a triangular plate of steel, each edge being four inches long, and attached to a socket through the centre, with nut and screw. A wooden handle is fitted in this when used.

Fig. 4 is a Floral Rake. It has six teeth, with a polished steel hoe blade on the opposite side, with handle fifteen inches in length, for weeding beds, &c. It is a neat implement for ladies' use.

Fig. 5 represents a Grass Edging Knife, which is used for paring the edges of grass bordering walks, &c.

All these tools are very useful, and are now sold so cheap that ladies, who are not afraid to work with their own hands in the garden, should insist on being well supplied with them.

WATERPROOF CLOTH.—For waterproof cloth, a saturated solution of water, sugar of lead, and alum, being prepared, the cloth should be immersed in the fluid for a few hours; on withdrawing it, and allowing it to dry, it will be found impervious to rain. The cloth should afterwards be hot-pressed.

APPLES.

SEVERAL KINDS IN ONE TREE.—In grafting large trees, several varieties of scions are frequently employed in forming one new top; there are several objections to this practice.

Every one at all familiar with fruit trees, must have observed that each variety has a mode of growth peculiar to itself, and those who have had much experience can often ascertain the kind, when not in fruit, by this circumstance alone. Some varieties are vigorous and of rapid growth; others are slow and unthrifty, and others of short duration and subject to decay early. A tree combining these discordant elements can possess little of symmetry or beauty, and the most judicious cannot remedy the evil. For instance, a tree may be grafted with the Northern Spy, which is of remarkable upright growth; the Roxbury Russet, which is horizontal, or spreading, and the Spitzenburg, whose branches are drooping or pendant. In a few years the scions clash and entangle, and it will be impossible to give them the proper form or direction, and when the tree comes into bearing the defect will be still more apparent. There is another objection to having more than one variety in a tree; it creates confusion in gathering the fruit, and where the kinds somewhat resemble each other, they are liable to get mixed, causing dissatisfaction among the purchasers. Where a person has but little land, and a few large trees which he is desirous to graft to other varieties for his own use, and who is willing to dispense with a good formed top, it may be justifiable to put several kinds into the same tree, but in extensive orchards it should be avoided.

WATERING CATTLE.

Being under the necessity of going out in this driving storm of snow to see that my stock are watered at the neighbouring brooks, has impressed on my mind the loss I am suffering by not having provided water for them in their stalls, or in the barnyard adjoining. This same brook runs within two hundred feet of the barn, where, at an expense not exceeding \$50, machinery could be placed, that by the power of the water itself, would yield a constant supply of pure water for as many cattle as the barn will accommodate. That this is so I know, because on my neighbors farm, where he keeps constantly fifty or more cows, and as many oxen, horses, and other animals, as are needed on a large farm, for the last *five years*, he has obtained all the water they needed, both winter and summer, from a small pond in his pasture distant 2500 feet, forced through a lead pipe, by a fall of only 13 feet head—the original cost of the preparation did not exceed \$200. Here, then, at an expense not exceeding \$20 a year, is obtained a convenience that is equivalent to the services of one man, and an additional benefit more than double this saving. Think also of the saving made, in the droppings of the animals, one-half of which would be lost by their roaming abroad, and irretrievably lost, when dropped in and floated away with the stream. This is no fancy picture; instances of this kind may be seen in every farming village; aye, more, we have known farmers who have boasted of their convenience of watering their cattle at the brooks, or neighboring ponds, as their fathers for a *hundred years* had done before them. It is perfectly easy to demonstrate, that the loss sustained in fertilizers, by this careless usage, in this period, at a moderate valuation, would exceed the present value of the farm, at a high valuation. So much for heedlessly going on in the steps of those who have been before us, without regard to consequences.

REMARKS.—The above communication is an exceedingly valuable one. It is the notice of such practical every day wants of the farmer, that gives an agricultural paper much of its value. Water arrangements are generally expensive, but that should not deter one from making a beginning. We know a good farmer—one of the best—who pumped water forty for years, forty head of cattle per day. Now this would require at least a minute for each animal twice a day, making eighty minutes, and of very hard work, too. At length, after wearing out some dozen pumps, and pretty nearly wearing out himself, he dug a well in the side of a hill twenty-one hundred feet from his barn, put in a half-inch gutta percha pipe, and for sev

eral years past has had the felicity of seeing the water run down hill by its own gravity, and filling his ample troughs to overflowing, where the cattle may slake their thirst at will. It also serves for many other purposes, and all accomplished at the cost of one hundred and fifty dollars.—*N. E. Farmer.*

Our friend Brown has not footed up the above account, nor furnished us with the aggregate results of forty years pumping. Eighteen minutes of hard labor each day, for that length of time, will amount to no less than four hundred and sixty-four days or eighteen months—the cost of hard labor for that time could not be reckoned at less than \$300 at very cheap wages. The cost of the dozen pumps, and of the wear and tear of the man, we cannot estimate so well, for the want of data.—*Country Gentleman.*

The labor of pumping from a well or cistern, in or near the barn-yard, is no doubt a serious item; but we think the loss of manure from driving cattle to creeks, or ponds at a distance, as well as the insufficient quantity of water they are apt to be supplied with in such cases, are more serious objections. Where the situation is favorable, a water-ram may be employed to deliver water in the barn-yard, at an expense so small that a prudent farmer would be justified in procuring it. But in ordinary cases we would not be deterred by the labor of pumping from resorting to cisterns. An improved chain pump is now much used for cisterns, and wells under 25 feet. They work light and fast, and do not freeze, an indubitable recommendation in this country.

NOTES FROM AN OLD COMMON-PLACE BOOK.

BY HON. ADAM FERGUSON, WOODHILL, C.W.

“O fortunatos, nimium sua si bona norint Agricolas.”

Concluded.

1815.—In the interval between last Workington meeting and its successor, I had removed to Scotland, and now prepared to enter upon my duties of *Scotch Steward*. It was expected of the individual who filled that station, that he should fetch up a *good tail* of friends and neighbours. It was my good fortune to secure a most excellent turn-out. We travelled by various routes, taking care to muster at Workington upon the 30th of July, the day previous to commencement. Mr. Curwen received us with the most polite and hearty welcome, introducing us to a large assembly of agriculturists. Among these was the *Irish Steward* of the year, Christopher Fortesque, Esq., of Glyddfan, Ardee, County of Louth, and P. Ruxton, Esq., of Recthouse, a member of the Irish bar, brother-in-law to Mr. Fortesque, and warmly attached to rural pursuits. Mr. Fortesque was all that can be found in a high-bred Irish gentleman, and I believe no man can require more to be said in his favour.

Our arrangements were pretty much akin to last season. The mornings were bestowed upon inspection of farms and various improvements. We found the use of Ashes growing in favour. Those produced by layers of lime, shells, and sods, or, as Mr. Fortesque facetiously denominated, the application of water to produce ignition, *burning without fire*, we found to be making rapid advancement. Turnips, raised with 60 cwts. of Ashes, were at least equal to those manured with 100 cwt. of best farm-yard dung. Potatoes cultivated upon the system which I detailed last year, promised to yield a luxuriant produce. The field under this crop contained 37 acres. Mr. Dickson, of Barigholm, near Leith, and who is a very competent judge, estimated the crop to be 40 Linlithgow bolls per acre. Mr. Dickson, by the way,

pays largely to Heriot's Hospital for his farm. It contains 90 Scotch acres, for which he pays in rent £8 1s. per acre. He disposes of the *whole produce*, purchasing City dung, at 5s. per single horse cart. His clover yields him £22 per acre, and is, for the most part, consumed by carters or teamsters, as horse feed. His rotation is Wheat, Potatoes, and Clover; but to return to other matters. We had several extensive Dairymen from London and its precincts, who gave us much information on their semi-rural occupation. Mr. Faulder, of Elton, in Kent, and several others, agreed that they never reckon, in an average, from 500 to 1000 Cows upon a larger daily produce than 8 or 10 quarts from each Cow. They draw their supplies of cattle from ordinary Short-horns, purchased by agents in the northern counties, at prices sometimes as high as £30 a piece. A few of these occasionally prove deep milkers, giving for a time 20 to 30 quarts per day. When the Cows fall below a certain average, they go to the butcher. When dried, they are soon ready, and make excellent beef. It was mentioned that the *fulness and depth of the milk vein*, and will form a very fair test of a good milker, and, sure enough, the best Cow in Mr. Curwen's byre was eminently well provided in that quarter. I have mentioned Mr. Curwen's high appreciation of *soiling*, and he declares that his views are more and more confirmed. Having an Ayrshire Heifer at this date, 18 months old, and who had *never set hoof upon pasture*, she was ordered to be slaughtered for trial. As the experiment was intended to illustrate two different modes of estimating *live weight*, compared with *dead*, or sinking offal, the Heifer was measured by Ainslie's tables, and gave four feet in a line from shoulder to rump, and five feet eight inches in girth, inside the fore-quarters. This measurement gave about 30 stones as the net weight, 14 lbs per stone.

The other method to be tested was by what Mr. Glover called his magical number, 556. The animal was weighed *alive*, and stood 55 stones. Glover's plan is to multiply his number by the live weight, and knock off the three right hand figures of the product. In this trial it stood thus—

$$556 \times 55 = 30(580, \text{ giving } 30 \text{ stones as the net weight.}$$

Both tests were found nearly alike, and both of them sufficiently near the truth, for ordinary farm dealing. The Heifer was rather over 30 stones, sinking offal, and had, moreover, 2 stones 4 lbs of loose fat. The beef was beautifully marbled.

It would be tedious to dwell upon each day's occupation. The meeting went off quite as well as that of last season, and much in the same manner. On the last day, we dined 425 in the Conservatory.

Our Irish friends having expressed a wish to visit the Lakes of Cumberland, and return to their home by Scotland, we made up a party, and left Workington upon Friday evening for Cockermouth, where we slept. Starting early on Saturday morning, we reached Mr. Kirwen's beautiful island upon Windermere to breakfast, where we found him in waiting to give us a hearty welcome. One leading character in the travelling party was George Rennie, Esq., of Phantassie, East Lothian, probably taking him, all in all, the best farmer of his day, and at all times hearty and communicative. Upon this occasion he was in high glee. We visited, *en route*, several crack farms upon the border. Among others, we looked over the farm where *drilled*

turnips were first introduced by Mr. Dawson. We also visited Bogend, farmed in good style by Mr. Thompson. The farm contains 800 acres, under the plough. Mr. Thompson is particularly noted for his Leicester sheep, and, for the convenient disposal of which, he occupies a large farm in pasture, near Morpeth. To return. We reached Phantassie upon Monday, where a kind and hearty welcome awaited us. Mr. Rennie farms his own estate, upon which he has five miles of thorn hedges, all neat and close, without a gap. It is full employment for one man to attend to them, nor can he do it without occasional assistance.

Mr. Rennie's arrangement of crops for this season is as follows:—

Spring Wheat, after Turnips.....	60 acres.
Winter Wheat, after Summer Fallow...	90
Oats.....	60
Barley.....	20
Beans and Pease.....	42
Turnips (60 White, 20 Swedes).....	80
Tares.....	14
Potatoes.....	6
Hay.....	45
Pasture (first year).....	60
Old Pasture.....	45
	522 acres.

His ploughmen go nine hours a day, from 5 to 10 A.M., and from 2 to 6 P.M. They do nothing else upon the farm, devoting their spare hours to the care of their horses and *gear*. Mr. Rennie deems it very bad policy to be *exacting* either upon man or beast. He has a large distillery upon the farm, but finds it a precarious adjunct for cattle feeding. In fact, he lost £1500 upon his distillery cattle last year. In Turnip culture, he allots to Swedish 14 double cart loads, and to White Globe 12 carts of best manure per acre. He feeds them almost entirely to Sheep on the field, or an adjoining pasture, and reckons upon twelve four-year-old Blackfaced Widders to each acre. Upon these he should clear 12s. or 14s. each. In stall feeding on Turnips, he allows two Oxen for each acre of roots, and these, when fat, will be at least 80 Dutch-stones each, and should pay £6 or £8 each for their food. If they run over 60 stones when fat, they will probably give £12 each for feeding. Mr. Rennie estimates a command of sea-ware, for manure, to be worth 30s. per acre.

We spent two most delightful days with Mr. Rennie and our East Lothian friends. From thence we proceeded to Edinburgh, and thus broke up our party, I believe to mutual regret.

CHILBLAINS.—To cure chilblains: Simply bathe the parts effected in the liquor in which potatoes have been boiled, at as high a temperature as can be borne. On the first appearance of the ailment, indicated by inflammation and irritation, this bath affords almost immediate relief. In the more advanced stages, a repetition prevents breaking out, followed by certain cure; and an occasional adoption will operate against a return even during the severest frost.

COOKING THE APPLE.

The Apple is both nutritious and wholesome and deserving a more prominent place in the catalogue of table fruits than is generally assigned to it. Sweet apples contain a large amount of saccharine matter and are probably more nutritious than the sour varieties. The apple, however, like all other fruits should never be eaten in an unripe or unripe state, and the fairest and most perfect fruit should always, if possibly, be selected for use.

APPLE SYRUP.—Take a dozen fine semi-acid ripe apples, pare and cut them into thin slices, and put them into a stone bottle with a gill of water and one and a half pounds of powdered sugar. Cork the bottle and boil it gently (in a kettle of hot water is better) two hours, and then suffer it to cool. When nearly cold, flavor with orange-flower water, or lemon, or any other essence which may be desired, and pour it into wide necked bottles for use.

APPLE CUSTARD.—Take large and fair tart apples, core them, and fill the openings with sugar, and put them into a well tinned pan, scatter sugar on the whole and flavor with lemon peel orange, or cinnamon.—Bake until soft, then put them in a dish, and pour over them a custard made of eggs and milk, in proportion of four of the former to one quart of the latter.

APPLE PORTAGE.—Take ripe apples carefully pared and cored, and put them in layers in a stone or earthen jar alternately with layers of sugar. If the apples are sweet, a little lemon or quince intermingled will give it a better flavor. Cover the whole with wheat paste or dough and place the jar in the oven for baking. Let it remain all night and it will make a delicious dish for breakfast.—*Farmer and Mechanic.*

OIL VARNISHES.

In these varnishes, as in spirit varnishes almost every operator has his own receipts. So that it is only the general outlines of their composition that can be given.

Drying oil, or boiled oil, is one of the most common varnishes, and is used to mix with colors, partly as a vehicle, and partly to cause them to dry quickly. Linseed, or nut oil, is boiled with a very small proportion of dried white lead, litharge, saccharum saturni, or white vitriol, generally an ounce either of each article, or a proportionate quantity of several to the heat of oil. Sometimes the oils are merely left to stand upon litharge for a long time.

Oil varnishes for covering pictures are not much used, as they are not easily removed. They are mostly composed of gum mastic, various proportions of copal varnish, Canada balsam, and thinned with oil of turpentine.

The varnish used for bright armor and weapons, by our ancestors, was 3 lbs. of brown rosin, 2 lbs. of turpentine, dissolved in 10 pints of boiled linseed oil.

The engravers' varnish for covering copper plates, and preventing the acid used in etching from corroding the places wished to be left blank, varies much in its composition. The hard varnish used with Callot's aqua fortis is merely mastic dissolved by boiling in an equal weight of drying linseed oil.—Le Boffe's soft varnish, which is that generally used in England, is made by heating 2 oz. of white wax, and adding to it, by degrees, first, 1 oz. of mastic in fine powder, and then 1 oz. of asphaltum, keeping it on the fire until all is completely dissolved.—Mr. Lowry used 4 oz. of asphaltum, 2 oz. of Burgundy pitch, and 2 oz. of white wax, melted together. The varnish called the soft ground is prepared by adding some veal suet to the soft varnish already described.

The French artists use gum benzoin instead of asphaltum, making their soft varnish of eight ounces of linseed oil, in which is dissolved one ounce of gum benzoin and white wax, and keep it on the fire till one-third is boiled away. For their hard varnish they add more white wax, so as to enable it to be made into a solid ball.

The superior clearness of copal to either shell lac or amber, gives it an advantage in varnishes and japan work; but the difficulty of dissolving it, either in oils or spirits, is very great. By grinding it with camphor, or by first melting it and letting it drop into water, it becomes more soluble.

The jappanners' copal varnish is made by melting 4 lbs. of copal in a glass matrass, until the vapor condensed upon any cold substance, drops quietly to the bottom; then adding first a pint of boiling linseed oil, and afterwards about its own weight of oil of turpentine.—*Scientific American.*

TORONTO MARKETS.

April 29th, 1855.

The supply of farm produce on the market during the past month has been very light, and but for the importation of many articles from the other side of the Lake, exorbitant prices would have been paid. As it is, the market is rather depressed, and prices tend downward. In wheat there have been about twelve loads per day changed hands at 7s to 7s 8d per bushel. The price has varied but little throughout the month.—Flour is drooping, and wholesale dealers are very cautious about investing. Sales have taken place at \$6 for Superfine, \$6½ for Fancy, and \$6¾ for Extra.

- Barley, in demand, 5s 2d per bushel.
- Pease, 3s 4d to 4s per do.
- Oats, scarce, 2s 6d to 2s 8d per do.
- Timothy Seed, 45s per do.
- Rye Seed, 18s 6d per do.
- Onions, 3s 9d per do.
- Potatoes, 3s 9d to 4s 2d per do.
- Carrots, 3s per do.
- Furnips, 2s per do. Pork, 40s per 100 lbs.
- Beef, 37s 6d per 100 lbs.
- Sheep, 27s 6d each.
- Lambs, 15s to 16s 3d each.
- Calves, 25s to 41s 3d each.
- Butcher's Meat, 4½d to 9d per lb.
- Hay, 85s to 110s per ton.

TRIAL OF PLOUGHS.

The Trial of Ploughs spoken of in this Journal, came off on the 29th April, near York Mills. There was a good attendance of farmers, as well as several distinguished persons from a distance. Five Ploughs were tested with the dynamometer, viz., Modeland's, Bingham's, Howard's (English), No. 2 Lap Furrow (American), and the Iron Scotch Plough. The following gentlemen were named a Committee to report on the trial: D. Christie M.P.P.; John Wade, Esq.; Col. Thompson; and J. C. Aikens, M.P.P.

We have not space in this Number for the Report of the Committee, but we give below the result of the trial as indicated by the instrument:—

	DRAUGHT.		FURROW SLICE.	
	cwt.	lbs.	depth. in.	width. in.
Modeland... 3	108		6	8¾
Bingham... 3	96		6	9
Scotch..... 4	32		5½	8¼
Howard 4	32		5	8½
Lap Furrow 4	28		5	10

The soil was a tough clay-loam sward, but in good condition for ploughing. A more detailed notice will appear in our next.

OUR PREMIUMS.—In our last Number we neglected to mention that the following premiums had been offered to our Agents:—To the regularly-appointed Agent who shall, within three months of his appointment, send
 The largest number of Subscribers ...\$25
 Second largest 20
 Third do... 15
 Fourth do..... 10

Fifth do. A copy of the Farmers' Guide (\$6).

We thought that these Premiums would incite our agents to greater exertion, but must say that, with the exception of one or two cases, we have been disappointed. We believe that many are labouring under the idea that they have no chance of gaining one of the prizes, and do not exert themselves as if they thought otherwise. We would desire to state to such that they have yet a chance. Another month is yet allowed to most of them, and with very little exertion we are assured that those who are far behind will carry off the first prizes. No competing agent has yet got more than 12¢, and we are much mistaken if some of our backward agents could not obtain that number, counting what they have already got. We say to all, "try again."

The names of the successful competitors cannot be announced until the 1st of July.

GOOD AND CHEAP LANDS.—We direct the attention of our readers to the advertisement of the "Illinois Central Railroad Company's Lands." Parties desiring to move westward, or to settle their sons, will find this an excellent opportunity to buy cheap and excellent lands. Read the advertisement.

ERRATUM.—Typographical errors can hardly be avoided in a publication like the *Agriculturist*, as the Editor can seldom see the proofs more than once before the form goes to press. The proof-reader sometimes mistakes words that are technical, and sometimes printers attempt to make corrections, which thereby become errors.

In the April number, a correction of this kind was made. In the last paragraph on the first page, beginning—"That it would be impossible to do without fences," &c., the word *possible* should have been used. The sense is the opposite of what the speaker intended. Often the context sufficiently points out the error, and to many it will be evident in the present case.

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March 28th, 1856.

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Interesting to the farmer, and also portraits of some of the most distinguished agriculturists.

The work will be conducted as usual by Wm. McDougall, Esq., who has resumed the practice of Agriculture near this city. The active promoter of the various improvements made in our Agricultural Legislation since 1847, and having also been connected with this Journal from its commencement, he requires no recommendation from us.

PROFESSOR BUCKLAND, of the Toronto University, whose labors and writings in behalf of Canadian Agriculture are known and appreciated throughout the Province, will contribute to its pages as usual.

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Applications for loans will be received by the Secretary, from whom the Rules, &c., of the Society, and any further information may be obtained. All letters to be prepaid.

PATTERSON'S CANADIAN REAPER.

WE are now manufacturing at Richmond Hill, O. W., a limited number of Reapers for the next harvest. To those unacquainted with us and the reputation of our Machines, we would say, that we are among the oldest manufacturers of Reapers in the province. Intending from the commencement to make it a permanent business, and knowing our success depended wholly upon the reputation of our Machines, we were determined that every one manufactured and sold by us should give entire satisfaction. We have been at great pains and expense in procuring the best quality of thoroughly seasoned timber and other materials. Our workmen are the most skillful mechanics that can be obtained, some of them having had much experience in this business, they having worked for several years in the most celebrated establishments in the States. We personally superintend the entire business ourselves, and intend every Machine made shall be perfect in all respects before it is offered for sale. We warrant them to be equal if not superior to any either of Canadian or American manufacture, and among all those sold by us last season, there was not a single Machine that did not give satisfaction.

Without wishing to prejudice any one against those commencing the manufacture of Reapers, we would intimate the necessity for caution in purchasing on mere recommendation a machine that has not been thoroughly tried, and found fully successful in its operations.

Farmers wishing to purchase one of our machines should forward their orders soon, as nearly three-fourths of the number we intend to manufacture are already engaged. To those acquainted with our Reapers, we would say, that we have made some very important improvements since last year, although the price remains the same, and we intend to furnish a better Reaper for the money than can be obtained elsewhere.

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