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THE  
CANADIAN AGRICULTURIST,

AND JOURNAL OF TRANSACTIONS

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VOL. VI.

TORONTO, FEBRUARY, 1854.

No. 2.

Reports, Discussions, &c.

EAST ZORRA FARMER'S CLUB.

A meeting of the East Zorra Farmer's Club was held at Donaldson's Hotel, 12th line, on Thursday the 5th of January, when the subject of Cultivation of Crops was introduced.

Present: Messrs. Bishop, Cooke, Thwaites, G. Smith, Robinson, Barnes, Shadwicke, Milman, Dale, Turner (Chairman), and many others.

Mr. DALE read as follows:—

In giving my friends a few hints, I propose to remark as follows: I think our attention ought to be to try and raise as much wheat as possible to the acre. First, I prefer the ground intended for summer fallow to be ploughed in the fall, and if not ploughed in the fall, it ought to be ploughed as early in the Spring as possible before seeding commences, and as soon as seeding is over, and the ground perfectly dry, cross plough it, and then drag and cultivate it well, and try to keep it the right colour, that is not to let it grow green with weeds, and before you start to plough for seed search out all the dung from your food-yards and buildings, and circulate it all over the ground. Then plough it up for seed, for if the ground be a low wet heavy sort of soil it ought to be ploughed in ridges from 9 to 12 feet each, and then watch your season; I think the best time is from the 5th to the 12th of September, and as soon as sown take your plough and one horse, and plough every furrow, and then take your spade and search all the low parts where you think any water might stand, and dig two inches below the furrow, so as to allow all the water to run off. Then look to the fences round that field and see that they are all right. Second, let the field intended for oats after pasture, clover or stubble, be ploughed with care nine inches broad and five inches deep, much depends on this work being well executed, for a bad ploughman causes serious loss to his employer. Keep your furrows

all open, and lay your land as dry as possible, and as soon as the ground is sufficiently dry to bear the horses, sow your seed and be sure to drag it well in and then roll it, you will find it greatly benefitted by that, for it keeps the moisture in the ground a great deal better, and makes it smoother for reaping; water furrow also, and look to the low pieces, and use the spade freely; and then look round that field and see if there are not a few rails wanted. Thirdly, for Barley. It ought to be sown on ground where turnips and potatoes were raised the previous year, and ploughed in the spring, and the same preparations as before mentioned for oats. For Peas I prefer them to be sown on ground where wheat was raised the previous year, and the ground ought to be ploughed in the fall and spring too, and sown as soon as the ground is sufficiently dry for the drag to work freely, and roll them the same as the rest. There is one thing I would advise you all to do, that is to prepare two or three acres of ground for tares, and let the ground for these be well manured and near your homestead, and you will find them very profitable to mow for your horses and pigs, for I think it is abominable waste to turn draught horses to feed in a pasture, one acre of red clover and two acres of tares mown and consumed in your stables and yards, will keep more horses for five months than twelve acres of your best pasture. You will also have a benefit in the increase of your farm-yard manure, which will much more than pay for the trouble of mowing and draining. The best time for sowing these is as early in the spring as possible; two bushels to the acre, and increase the quantity of seed as the season advances. For clover; there are several methods of sowing this, but the surest is to sow it and harrow it in at the time you sow your grain; I mean, to give it a light harrowing once over, and I think it always grows the best with wheat or barley, for oats are apt to get too stout and smother them out altogether.

For potatoes, the ground ought to be ploughed three or four times over, and well dragged each time so as to get it as mellow as possible. There are several methods of planting those, but I pre-

fer their being planted in rows: let the rows be 36 inches apart, and the sets 12 inches distant, two inches below the surface is sufficient. Lay the manure over the sets, and cover it completely over by deep ploughing when you are ploughing over the rows; this will afford perfect drainage for the potatoes. It is a mistake to suppose that you can raise a larger quantity of potatoes by close planting, they require much space and constant working of the ground while growing.

For Swede turnips. The period of sowing these must be regulated by the weather, though about the forepart of June may be considered the most favourable time. The best cultivators differ in opinion as to the mode in which manure is the most advantageously applied to the Turnip crop; some preferring its being spread over the whole surface of the land and others placing it exactly under the plant. For my own part, I give the preference to placing it exactly under the plant in rows at a distance of twenty inches, so as to allow the horse-hoe to work freely until the middle of August. One pound of seed ought to be sown to the acre, as the cost is trifling and you single out the plants at a regular distance. It will not do to hoe a great field for a little crop, any more than to mow twenty acres of grass for five loads of hay. Enrich the land, and it will pay you for it, you had better farm 50 acres well than 100 acres by halves. To keep your land as dry as possible is the object of every lowland farmer; and, indeed, of so much importance do I consider this, that I hold the man who neglects it unworthy of the name of a farmer. Remember the adage that it is cheaper to do anything well than to have it to do twice; this is not more true in any case than in fencing. I believe that the man who keeps a farm in the neatest order, is at less cost than he who allows his stock to ramble and goes to stop up the fence. This is as bad as to allow water to stand upon the land, and then begin to grip it; or to allow weeds to seed and then to mow them. By the way of farming I have explained for grain, turnips, and potatoes, I can assure you I have raised some splendid crops, and have seen them raised, both in Canada and in Yorkshire in England.

The CHAIRMAN having then begged all to allow each speaker to proceed without interruption, however eager any person might be called on:

Mr. COOKE, who said that having been born in the land of stumps, and used to see crooked furrows, he might say he had been bred to it all his life; he considered it was more profitable to work and manure land well, than to do it in a slovenly way. He differed from Mr. Dale about manuring a summer fallow, but he liked to plough some dung in for a coming crop, as he thought fallowing ought to be enough for that crop; he thought ridging land up good even on flat land. When he lived in the Niagara District, an Englishman came into it, Jones by name, who ridged up his land, first into two yards then afterwards into four good furrows, and he reaped splendid crops, and did a great deal of good in that section of the country. He himself did the same, and found it better both for sowing

and dragging, and it gave better crops. The best piece of wheat he ever had was by hauling ashes off a new piece of land on to a half-worked out field, about 30 bushels to the acre.

Mr. BARNES wished to know on what course of cropping Mr. Dale farmed, and what quantity of fallow he made. The Rev. Mr. Panquier's system which the Secretary had alluded to as raising such excellent crops, was that of regular manuring. Summer fallowing half the land at a time was no way at all; he [Mr. B.] would fallow 10 acres out of 50 each year, for a five course shift, and manure each fallow. We could not grow green crops like we could in England for we could not feed off the land, so that we take from the land instead of enriching it. Some advocated peas as a fallow crop, but he could not see how we could do without a fallow. When we begin with a farm, we should take hold of the worst piece we have and bring that into order, and so continue with the rest. We ought to sow on dry ridges about 30 feet wide, and strike up furrows so that the land could dry quickly. We ought to plough in the fall as well as in spring, so as to give roots room to run. The more land is worked the better it is, and it is not weakened but strengthened by ploughing, and the more a farmer follows a regular rotation of crops, the more profit he will have.

Mr. HUGGINS said, though he was a stranger here, he had been a farmer in Canada 22 years; he agreed with Mr. Dale in some things, and disagreed in others. In raising wheat he (Mr. Dale) prefers fall ploughing, this year he had happened himself to plough 30 acres, but did not approve of the practice, he thought wheat did best on spring ploughed land. He thought every farmer ought to sow wheat on sod land, for he had raised from 30 to 45 bushels on sod, but never more than 30 on stubble land. He thought we ought to put our dung on green crops, plough land up in ridges about 12 feet wide, and keep dry; we ought not to sow our turnips before the 20th of June, for fear of the fly, if sown before that time, the fly is very apt to destroy them, as he knew by experience, but if after that time, the fly seemed to be gone, and they escaped. As to the rest of Mr. Dale's remarks he agreed with them.

Mr. MILMAN thought with Mr. Huggins that manure ought to be kept for green crops, and then the ground would be good for other crops afterwards, and green crops were as profitable as grain. Some people said, you could not destroy Indian sod without summer fallow, but his farm when he got it was full of Indian grass, and by growing turnips he had got it completely under.

The CHAIRMAN said he thought sod would not want manuring, but he would be afraid of wire-worm. A neighbor had a field that was already so injured by it he thought it would not be worth harvesting.

Mr. BARNES knew a case of wheat failing on old sod, so that the crop was entirely lost; but it was on old Indian grass sod, not on clover.

A discussion then arose about the use of subsoil ploughs, in which their advantages and disadvantages were pointed out. The subject of draining was also introduced.

Mr. BISHOP had raised last year 32 tons of mangrel wurzel on a field of rather more than three quarters of an acre, a strong clayey loam. He was in the habit of ploughing three times for green crops, opened his drills, placed the dung in them, covered it up with the plough, and placed his seed on the top. He disagreed with Mr. Barnes as to their taking anything out of the land, for the tops left on, and the weeds killed out, amply repaid any loss. He made this year, off 4 acres of very fox-taily land 2800 bushels of turnips, all by good hoeing; for one field of about 4 rods he had left unhoed, bore at the rate of only 20 bushels to the acre. It was a low field with a hollow centre, where the last tenant had failed to raise about 5 bushels of wheat to the acre the year before; he had made a drain, which took off the water,—ploughed as soon as it was dry three times, dragged and rolled well for seed, sowed on the 21st of June 2 lbs. of seed on 4 acres, and hoed them three times. He had made his drilling machine out of a couple of 1 lb. powder canisters, tied each in the cleft of a forked stick, with a hole in the bottom, and sowed two drills at a time as fast as he could walk, he then rolled the seed in. He thought men ought to raise more clover and hay instead of wheat. He had raised a good deal of clover-seed, turnips, &c., and mangrel wurzel, he thought, was a surer crop than turnips, for the fly never touched them; he had rolled turnips after the fly was upon them with decided benefit. He put spring wheat on his turnip land, and sowed to clover, fed his clover till June, and then let it go to seed, and it came better from pasture than from mown clover. Slaughter-house manure gives better crops than anything else.

Mr. DONALDSON had a crop of turnips and mangrel wurzel this year, each worked and treated alike, but the mangrel wurzel turns out an excellent crop, and the turnips a bad one.

Mr. BISHOP, in answer to a question, said he piled his turnips all together. He had one heap now of 1600 bushels, about 10 feet high, but kept a square flue of boards, pierced with holes in the centre, for a ventilator, so as to keep them sweet. He had a screen about 10 feet long, which he rolled his turnips down into the pit, so as to clean them.

Mr. MILMAN made long heaps of roots, about a yard wide, and covered an inch-and-a-half with dirt, which was quite sufficient. He had a root-house with a chimney to it, which kept 1200 bushels well.

Mr. GRAFTON SMITH said he had lived chiefly on new ground, and thought that after the first crop of wheat men ought to lay down new land to grass. Breaking up sod amongst stumps was difficult, but the best way was to break it up in the fall, sow peas, and after that summer fallow. He thought he had to fallow stubble land, because green crops required so many hands. He broke up some very bad land one fall,—in the spring the cattle ran on it, he cross ploughed it in June, and it broke up very well. He disapproved of breaking up in spring for fallow, for we could not get at it soon enough, for the peas had to be got in first, and then comes haying; then harvest, the grass keeps on growing all the time, and after a

bad harrowing we have to plough for wheat with all the grass alive. He thought manuring on fallow was of no use on his own new land, he had tried it, but saw no difference in the crops. He had seen clover seeded down on wheat, which would grow from 1½ to 2 tons of hay, after two crops it was manured and sown with peas, then cross ploughed and ridged up, and it would do as well as a fallow.

Mr. ROBINSON had experienced great pleasure in hearing so many excellent remarks on the subject. He had determined to consider the matter, but had been unable to gain time to do so. It was a very important subject. In Mr. Dale's paper was a recommendation of summer fallowing; but he objected to it, as leading to the old system, and thought other things paid better now than fallows. Twenty years ago pork and wheat were the only cash articles; now a man who has other animals can sell them for cash; so one ought to look after everything. He who fallows his farm risks all upon one stroke. He knew of a man last year, in the Queen's Bush, who fallowed almost all his farm, and now had 1000 bushels of wheat in his shanty; but it should be considered the risk he ran. He recollected his father fallowing for wheat, which was partially winter killed, and after that grew exceedingly rank, and rusted, so that the straw was at harvest tied up, not in sheaves, but in large bundles, 48 of which went to one bushel of bad wheat. Considering the money that was laid out in fallowing, in horses, wages, &c., he thought those who wished to raise good crops would act differently. Farms should be seeded down, and well done, not with one or two pounds to the acre, but with four or five, so as to choke the Indian grass, and raise good clover for cattle and hogs, in order to have young animals for the butcher, besides a cow or so for home use, and one's hogs grown cheaply. He had a quantity of young hogs last year half fat on clover and water. A man should have a small part of his farm in wheat, part in oats, a large part in clover, so as to get good grass, hay and pork; with good peas, enough to grow \$100 of pork, and then have a yoke of oxen for sale, young cattle, too, and perhaps a pair of young horses. Ought we to do nothing but plough, and get a crop of wheat to sell—pigs, to sell the most of—oats and peas, to sell altogether,—in such case manure was nothing but digested straw. He had heard of cut straw and bran, but he thought we ought to bruise our oats with straw to make good manure. Ploughing was not the only thing necessary, crops require ammonia, potash, and soda,—and thus require ashes. When soil was poor like that field of Mr. Bishop's,—where did the crops get their nourishment from? On board ship lettuces had been raised on wet rags, and he had heard that from 90 to 95 parts of all crops came from the air. How can manure be made if all the crops are sold off, and it be nothing but digested straw? He had lived in the woods all his life,—he came from Yorkshire when 5 years old,—his nearest neighbor was 3 miles off, next one 5, next 7, and he had been at school but two months after he came out here. The condensing and absorbing power in the earth had been placed

there for wise purposes. Charcoal placed in the way of urine absorbed it, so did plaster. Whoever does this, and keeps his crops on the farm, has more manure in one load of dung than one who neglects it has in six. Cattle ought to be well kept in winter, and men ought to keep stock enough for the farm, and farm enough to keep the stock. When a man depends on straw and browse to keep his cows, the butter is bad in summer, and his animals hardly live, when well kept they keep him well. He who begins following new fields at the second or third crop would find it difficult to work among the stumps. He had seen a neighbor cut bad crops after good fallowing; but peas and oats were better,—and he who ploughs in fall, and manures, and cultivates in his peas in the spring, has a crop instead of his neighbor's fallow; and after cross ploughing in the fall, has his land in good heart. Peas make good clean land, and if fall wheat be not convenient after this, spring crops come in well. A Yorkshirer had told him he had broken up an old pasture (eaten quite bare) in June, whilst waiting for hay, harrowed it well, after that, on the 20th of September, ploughed for wheat, and got an excellent crop, though the field looked very rough indeed. He would question if a dry furrow in old pasture, well harrowed, would not rot before September and give a good wheat crop without much labor.

After a few words from the Chairman, a meeting was called for Thursday, the 9th of February, at Lappin's Hotel,—subject "Fences."

Thanks were then voted to Mr. Turner for his conduct in the chair, and to Mr. Dale for his paper, and the meeting separated.

#### EAST OXFORD FARMER'S ASSOCIATION ON DRAINING.

At a Meeting of this Association recently held at the Town Hall, there was a very interesting and important discussion upon the subject of draining, of which the following is a brief report. It was opened with a practical address from Mr. Alexander, from which we are only enabled to give a very short extract:—

"He observed that the subject which had been appointed for discussion upon this occasion, must soon become one of the most important questions with the Farmers of this Province. Both science and practical experience agree in pronouncing a proper system of draining to be the greatest Agricultural improvement in modern times. It may no doubt be alleged that to carry out any system of draining in a thorough and permanent manner requires considerable outlay, and that in a new country where the price of labor is high, the introduction of all such improvements must be gradual. However our prospects are becoming better every day, and if the present remunerative prices continue, it will pay the farmer to adopt many of those artifices by which the natural productiveness of the land will be increased. The beneficial effects of draining are be-

coming well understood. The removal of all superfluous moisture from the surface and subsoil induces a more healthy growth of the plant.—Where water lodges in the soil, the crops receive little benefit from the genial warmth of the sun, which is expended in the natural process of evaporation, while too great an excess of vegetable matter is generated for the growth of our valuable grains. The farmer uses the very appropriate terms *cold* and *sour* when speaking of such lands, upon which there is a vast amount of labor and seed thrown away every year without any return. Where is the remedy? By *draining the soil*, it is rendered porous for the free admission of atmospheric air, one immediate result of which, will be the rapid decomposition of those vegetable acids which may have been accumulating for ages, thereby producing according to the testimony of our best authorities, an abundant supply of carbonic acid, the principal organic element from which plants derive their nourishment. From the increased porosity consequent upon draining and thorough cultivation, the natural warmth penetrates to a greater depth and the soil must then benefit to the fullest extent from the fertilizing properties of the atmosphere and rains. Mr. Hind illustrates with great clearness their wonderful agency. How their silent but never ceasing work is to build up the organic structure both of the soil and plants, while they also serve to decompose and bring into action the mineral or inorganic elements. It will be observed that what we call fertility is a properly balanced supply of those in the soil, and it is important that the farmer should study the laws which regulate the structure of vegetable life that he may expend his labour to the best advantage.

A very important question arises. What lands are most benefited by draining? The attention of the farmer will naturally be first directed to all those parts which suffer from too much moisture, and seldom bring any crop to maturity. Professor Johnson remarks of clay soils, that when wet they are too close and adhesive, and exclude the air from the roots of the growing plant, but when the water is removed, they crack in every direction, become open, friable and mellow, and are more easily and cheaply worked. But all soils resting upon a hard or clay bottom must be benefited by draining. Many farmers are of opinion that it will benefit even soils of a lighter texture. So far we may coincide with this view that the deeper and more thorough the cultivation, the farther the roots of the plants will descend, and suffer less from the casual droughts; still in a country where labour is so expensive, the draining will doubtless be confined to those lands which more pressingly require it. But it will be necessary that we should at once come to the question of the evening:—Namely, as to the most economical and advantageous system of drainage for this Province.

Mr. Henry Peers (Vice President) remarked that as the construction of either temporary or permanent drains involves considerable outlay, it would be well first to enquire whether the farmer would be sure of a profitable return. Upon this point he was prepared to offer one or two

remarks. He had last summer in one field 13 acres of wheat, which had yielded 40 bushels to the acre, with the exception of 2 acres upon which the wheat was a complete failure from the ground being too wet. To prove the results of draining more clearly he had constructed a short drain through the wettest part of the field and there *the wheat was good*. Now it must be admitted that according to the present price of wheat, he had sustained a clear loss of £20, and as regarding the cost of draining with the horse-shoe tile (Mr. Peers here exhibited a specimen of the tile he had introduced upon his own farm) putting them 15 feet apart and 3½ feet deep, he had made the calculation that had he drained last year the two unproductive acres, the crop would have more than paid the expense. This may appear to be an extreme case, but is the simple result of recent experience.

Mr. Lemon stated that it was proverbial in the north of Scotland, that the crops were 14 days earlier upon the properly drained fields. He had been principally accustomed to stone drains, and had lately made 175 rods upon his own farm which had proved very satisfactory, but great care was required in their construction. Some built a triangular duct at the bottom, laying one stone flat on the ground, setting up two others as a triangle upon it and then wedging in stone to keep them in their position. But he preferred the sides of the duct perpendicular although it might not be so easy to find suitable stone to cap them. He had heard of some farmers using slabs for that purpose, but this he did not consider a wise economy. All draining should be done with permanent material, and there was no work the farmer had to do, which required more judgment and care, for any obstruction from the displacement of any of the material, used would consume so much labor over again; he would warmly recommend that all draining should be done at first in the most solid and permanent manner.

Mr. Alexander remarked that it would be desirable to take the sense of the meeting regarding the depth at which drains should be constructed, the respective advantages of stone and tile drains, and which kind of tile is to be preferred.

Mr. Paulin thought that no uniform depth could be fixed upon. But the question of economy, is one of great importance in this enquiry. In some subsoils it is hard digging when one gets below 30 or 36 inches, while he was doubtful whether in certain soils and subsoils the top-water would go off, if the drain were placed beyond that depth. It is certainly necessary that the soil should be opened up for the proper descent of the roots. But he thought the above depth sufficient from the common surface, which would admit the free use of the subsoil plough. With respect to the materials used, where there was plenty of surface stone, it might come in advantageously for the main drains, but it is probable that the pipe tile either with the collar or without, [if it could be procured in the Province,] would be the cheapest and most practical material for the smaller drains.

Mr. Peers desired to make one observation in reference to what had fallen in the course of

discussion. All that he had heard could not convince him that two and a half was so advantageous a depth as three and a half feet. He felt no doubt that the surface water would find its way to the latter depth, and would quote a fact arrived at by Mr. Mechi, by experiment on his farm in Essex, upon which the drains were five feet deep. He states that after the application of liquid manure on the surface, he found the smell of it quite perceptible filtering out of the drains below.

The Chairman desiring to have the sense of the meeting respecting the best kind of tile, a lengthened discussion took place, principally sustained by Messrs. Allan, Shell, McCallum and Maybee, when it was agreed that the pipe tile carefully laid was the most satisfactory and the cheapest tile, and the Chairman was requested to communicate with Mr. Buckland, whether a machine for making such tiles could be procured so that they might be introduced into the country.

The next meeting was appointed to be held in the Town Hall, on Friday the 13th January, at 5 o'clock, P. M., when officers will be chosen for the current year.

#### SUBJECT FOR DISCUSSION.

The whole management of sheep. What shelter they require in winter. Their most common diseases. How guarded against? Feeding and treatment of the Ewes before and after lambing. How often the flocks should be changed, &c., &c.

### Communications.

#### ON TESTING IMPLEMENTS, DIFFERENT BREEDS OF CATTLE, &c.

To the Editor of the Canadian Agriculturist:

SIR,—I hope I shall not be intruding on your time if I ask why there is no trial of the implements offered for exhibition at the Provincial Shows, at least I heard of no trial, and none of the implements seemed to have been used. In England, short and unsatisfactory as the day allowed for it is, there is a trial, and no implement is allowed an award without having gone through it, and why could not the thing be done here? How can there be a really fair competition between two implement makers when the award is made simply by guesswork, or calculation? The plough, for instance, that gets the first prize may draw 8 or 9 stone heavier than one that is not mentioned, and turn a worse furrow, though it may look much the best implement of the two, and a fair trial, with a dynamometer to record the working draught of every implement, would be of immense value to the really skillful mechanic, not to mention that it would knock off some of those acres of gold leaf, and pounds of flaring paint, that distressed the eye of taste so painfully at Hamilton, and make implements

look not as if they were meant for man to use, but for children to look at. I would venture to make another suggestion, and that is, that all the beasts be tied up in order, according to their class, with a number for each to be recognized by. We would then be able to inspect and contrast at our leisure, instead of having to look in several different places for the same class; there would then be very little trouble for the judges also, as everything would be to their hand at once. None but those who have visited one of the great Exhibitions in England, will appreciate the long rows of cattle tied up side by side, according to classes and numbers, the bulls separated from each other by partitions, the cows tied amicably close together. Besides those two or three little close boxes for a few favoured short horn bulls, proclaiming their supposed value and real tenderness, interrupt the eye very much, and one cannot always get a peep into them. I trust that as regards the cattle at least, that improvement will be made in London, viz.: to tie up every beast in its proper class, and according to a number furnished to its owner at the time of entry. I believe the plan would never be changed again. There might be some difficulty with the calves, but they might be tied too just behind their dams, so as to be ready to suck at any moment. I hope the plan of awarding more prizes to the Durhams than any other breed will have had its day, now that the Devons have come out so well. When there were hardly any other cattle in the Province it might have been very well, but I think now that the awarding more classes, and moreover a fourth prize will be found to be an injustice that breeders will not endure. With all due deference to the columns upon columns that have filled your valuable sheets in the last eighteen months, labouring to assert that the Durhams in every situation and for every purpose are unequalled, I would humbly submit my opinion that that position is untenable, at least it has never been proved in England, where the opportunities for doing so are of the first order, and with respect to the opinions of many gentlemen of science, I would say, that what the united skill and energy of the farmers of Great Britain, forming as they do not an uneducated, but one of the most highly educated classes of society, feel themselves unequal to decide upon, is at least equally beyond the ken of Canadian farmers. Shorthorns have been the most fashionable breed, because they have possessed, from the scarcity it would seem of good ones, the run in the market for high prices, forming as it were a fashionable species of gambling, (though I beg leave to say I do not wish to undervalue that most excellent and valuable breed, but only to claim for others a fair allowance of consideration). The scarcity I say, for why is it that a few herds range at prices from £100 to £500, and the common run at the common price of cattle, £15 to £20 for bulls and cows. We all know there are one or two very bad points Durham's possess that it is very difficult to eradicate. The worst point an animal can have, viz: a lean girth behind the shoulder being one, and I suppose the absence of those faults causes the rise in price. I think it will be

found too that even in that point of view, viz: price, Devons have equalled the Durhams at last, for more money was given I believe, for them than for the Durhams at Hamilton, at least I know that Mr. Locke refused £160 for one of his cows, and refused to sell me a heifer at all, and refused to take less than £75 & £50 respectively for two bull calves. £100 was given for one bull, and £75 refused for the first prize yearling, and calves selling at £30. Though I do not advocate high prices, for they prevent stock from spreading as it ought, and think £150 quite enough to pay for any beast, still when the money they will fetch is supposed to be a criterion of their value, this proves they do not stand so badly in the public estimation as some would seem to think. Two bulls stood side by side, one a yearling Devon, weight about say 500lbs., the other an older Durham, weight stated at 2200 lbs., the Devon found an immediate purchaser at £35, the other was offered in vain at £40, a clear proof of the estimate formed of their respective values by the public. It is a great pity some Short Horn breeder did not accept the truly English and high spirited challenge of Mr. Sotham, for now people will say that Durham breeders are always ready to write and talk, but are afraid to come really to actual proof. At the same time I must protest against the abuse of books and public prints slown in the great Hereford and Durham controversy. You must excuse my being a little late in my remarks, but I had been in England last winter, and consequently only read the conclusion of the argument this summer. Mr. Parsons calls the *Mark Lane Express* a "partisan journal," seemingly because it ventures to speak in favour of Herefords. Mr. Sotham blames Mr. Youatt because in writing a description of British cattle, he does not set himself up to be a judge over them. I think both very unfair attacks upon men whose character stands so high, especially that the editor of a British journal is not to be allowed to mention one breed of cattle, because Mr. P. does not favour it. I see Mr. Sotham mentions the fact of cattle and sheep being exported to Cuba, and only the Herefords surviving, I think it but fair to state that Devons have been exported to Jamaica, farther south than Cuba, and found to do well, and impart their good qualities to the native breed in a remarkable degree.

I see also in your valuable paper a drawing of the so called Norwegian Harrows; perhaps your readers may not be aware they are an English invention, despised of course in their own country, taken abroad, and when brought back under a foreign name, creating an immense sensation, following the same course in fact as the reaping machines.

As some of your readers may wish to know the result of putting one breed of cattle against another, for fattening, I enclose you a list of the prizes taken at the Smithfield club from 1844 to 1851, the last year of which the system of showing them all together prevailed, if you should feel inclined to publish it, or any part of it.

I remain,

Yours faithfully,

A HAMILTON FARMER.





### PLAN OF IMPORTING CATTLE.

To the Editor of the *Agriculturist*.

DEAR SIR,—I observe in your December number a letter from Mr. Kellar bringing forward a scheme for the importation of stock through a joint stock society. The experience of some years convinces me that nothing would conduce more to our advantage, as farmers both individually and collectively, than the most strenuous endeavours for the improvement of our stock. Experience (hard bought) too, has shown me that on it present footing the importation of valuable stock is a serious undertaking for private individuals, and I have been highly gratified by the way in which Mr. K. has too long forwarded this matter. In reflecting on his scheme, however, it appears to me that the selecting of £10,000 or even £5000 worth of stock would be a serious charge on two individuals, whilst the care of it on the passage would be heavier still, and this my own experience has shown me, could not be safely entrusted to subordinates. Another difficulty would arise from the fact that every judicious breeder sets before him his own modes, toward which all his efforts should tend in one uniform direction, his selection of crosses and new blood will ever be made in subserviency to this object in view, knowing exactly the deficiencies and excellencies of his own stock. Under these circumstances I submit that his field for selection among ever a large importation is much too limited, the whole world should be open to him. By this system of importation although the animals should be excellent in themselves, too little range would be afforded to relieve the defects of one animal by the excellencies of another, and a set of animals will be produced whose character will be level mediocrity, rather than individual excellence. It by no means follows that even the best bull abstractedly is the best to apply to any herd.

Satisfied of the importance of Mr. Kellar's suggestion, and thankful to him for bringing it forward, I would merely offer as an amendment in carrying it out, that parties should be encouraged to select and import their own stock by a series of premiums on importation. No one should select for a breeder but himself; if his own judgment is not to be his ultimate standard of reference he will never be successful.

I would suggest the following as a rough sketch of a scheme for encouraging the importation of stock.

Let 10 per cent be deducted from the amount granted annually to all agricultural societies by government, as a general importation fund.

Let all parties wishing to claim a premium on any importation, send to the Agricultural Board a full statement of each importation, with the original cost of the animals, previous to the first yearly Provincial Exhibition following such importation.

Let all animals imported be required to be shown at the first Provincial Exhibition following their importation, to entitle them to claim.

Let three judges be appointed at every annual exhibition, for the purpose of judging if such ani-

mals are of quality worthy of importation, and worth their first cost.

If such animals are approved and their first cost also satisfactory, (if the latter is not so provide for fixing a value) let a premium be allotted the importer amounting to 15 per cent on their first cost, in case they do not take the first prize in their class at the exhibition. In case they take the first prize, let the premium be raised to 25 per cent on their cost in addition to the prize taken, saving a proviso that if the animal be a male, he shall be open to the use of members of the County Society in which he is placed at a stipulated price, on that County Society adding one-half to the amount given by the Board.

I would suggest also that the three judges be empowered, in case of loss either by wreck or death on passage, to examine, on oath if necessary, all information offered in reference to such loss, and allot to the parties concerned, should they think fit, an amount not exceeding two-thirds of the amount of premium the importation would have taken had it come to hand. This amount in prospect would probably be an inducement to parties who had already stretched to the extent of their means to get a superior article; to lay out an additional sum in insurance, which they would otherwise wish it possible to avoid.

Should the 10 per cent not be found to cover the outlay required, I am confident either our Government or Agricultural community, would not be appealed to in vain, in a project so fraught with national advantage. In this matter our American neighbors have already taken the initiative, but I feel assured the plan now followed by them will by the sameness of the importations, conduce only to mediocrity, whereas individual effort would conduce to individual excellence. Canada is not yet, however, behind, and there is no reason why she should look even to the *English herd book* as the standard of perfection. The world is still young and onward, and why should the breeders of the present day confine themselves exactly to that strain of blood created by their grandfathers, who no doubt in their time were very judicious men. It would also be very desirable that the Board should make some arrangement with the Canadian steamers to secure good and cheap accommodation, and to have a responsible officer on board to assist, advise, and even compel proper arrangements as to food, &c., parties in charge of such stock being generally utterly ignorant of the requirements of a sea voyage, and often incapacitated by sickness.

Yours very respectfully,

RALPH WADE, Junr.

Cobourg, 27th Dec., 1853.

### IMPORTED SHORT-HORN BULL "BELLEVILLE"

To the Editor of the *Canadian Agriculturist*:

SIR,—At the sale of imported Short-Horn Cattle belonging to the Northern Kentucky Importing Society, a yearling Bull ("Belleville," the 3rd purchased of a near connexion of mine, Mr. Hopper, for \$1,015, the highest price paid)

realized, at the sale, a comparatively low price. As the amounts sold appeared in all the Agricultural papers, and as such a statement, without some explanation, is calculated seriously to affect Mr. Hopper's interests as a Short-Horn breeder, I shall feel extremely obliged by the insertion in your valuable Journal of a letter received by Mr. Hopper from Mr. Gerrard, one of the gentlemen sent to England to purchase stock.

I remain, Sir,

Your obedient servant,

C. A. JORDISON.

Port Hope, C. W., Dec. 31, 1853.

(Extract from Mr. Gerrard's Letter.)

"Home, near Paris, Ky., Oct. 21, 1853.

"At the time of sending them (the catalogues), I thought that I would write you, as an act of justice, and let you know how 'Belleville' 3rd, came to sell so comparatively low. He met with the misfortune to be crippled in one of his hind legs during a storm at sea, which, together with the long voyage (57 days), reduced him until you would scarcely have known him when he landed, although he had partially recovered before he landed. The long travel by Railroad (some 800 miles), in excessively hot weather in July, caused his leg or hock to swell again, so that when I got him to Kentucky, and on the day of sale, he was quite lame, and looked very badly, which was the reason that he sold for only near his value; for you must understand that most of them sold for exorbitant prices by the competition of wealthy and spirited breeders from different counties, who owned large herds of fine cows, and had formed themselves into companies for the purpose of purchasing. The gentleman who purchased 'Belleville' the 3rd is Mr. David Coleman, near Lexington, Kentucky. I hear that he is much pleased with his bargain, that the Bull is improving finely, and will get well, so that his injury, received at sea, is only temporary.

"H. GERRARD.

"To John Mason Hopper, Esq., Newham Grange, Middlesbrough-Tees, Yorkshire, England."

## Natural History.

### THE OX—HISTORY, MANAGEMENT, DISEASES, &c.

(Continued from last number.)

[The Devon being one of the principal breeds, and much controversy having taken place among breeders as to the respective merits of the breeds, we have inserted Mr. Youatt's remarks—able and impartial—without abridgement. We advise all cattle owners to study them.]

#### THE MIDDLE HORNS.

##### THE DEVONS.

The north of Devon has been long celebrated or a breed of cattle beautiful in the highest de-

gree, and in activity at work and aptitude to fatten unrivalled. The native country of the Devons, and where they are found in a state of the greatest purity, extends from the river Taw westward, skirting along the Bristol Channel, the breed becoming more mixed, and at length comparatively lost before we arrive at the Parrett. Inland it extends by Barnstable, South Molton, and Chumleigh, as far as Tiverton, and thence to Wellington, where again the breed becomes undiluted, or is mixed before we reach Taunton. More eastward the Somersets and the Welsh mingle with it, or supersede it. To the south there prevails a larger variety, a cross probably of the Devon with the Somerset; and on the west the Cornish cattle are found, or contaminate the breed. The Devonshire man confines them within a narrower district, and will scarcely allow them to be found with purity beyond his native county. From Portlock to Budeford, and a little to the north and the south, is, in his mind, the peculiar and only residence of the true Devon.

From the earliest records the breed has here remained the same; or it not quite as perfect as at the present moment, yet altered in no essential point until within the last thirty years. This is not a little surprising when it is remembered that a considerable portion of this district is not a breeding country, and that even a proportion, and that not a small one, of Devonshire cattle, are bred out of the county. On the borders of Somerset and Dorset, and partly in both, extending southward from Crewkern, the county assumes the form of an extensive valley, and principally supplies the Exeter market with calves. Those that are dropped in February and March, are kept until May, and then sold to the drovers, who convey them to Exeter. They are there purchased by the Devonshire farmers, who keep them for two or three years, when they are sold to the Somersetshire graziers, who fatten them for the London market; so that a portion of the Devons, and of the very finest of the breed, come from Somerset and Dorset.

The truth is, that the Devonshire farmers were, until the last century, not conscious that they possessed anything superior to other breeds; but, like agriculturists every where else, they bought and bred without care or selection. It is only within the last one hundred and fifty or sixty years that any systematic efforts have been made to improve the breeds of cattle of the kingdom; and we must acknowledge, that the Devonshire men, with all their advantages, and with such good ground to work upon, were not the first to stir, and, for a time, were not the most zealous when they were roused to exertion. They are indebted to the nature of their soil and climate for the beautiful specimens which they possess of the native breed of our island, and they have retained this breed almost in spite of themselves. A spirit of emulation was at length kindled, and even the Devons have been materially improved, and brought to such a degree of perfection, that, take them all in all, they would suffer from intermixture with any other breed.

Whatever be the breed, there are certain conformations which are indispensable to the thrive-

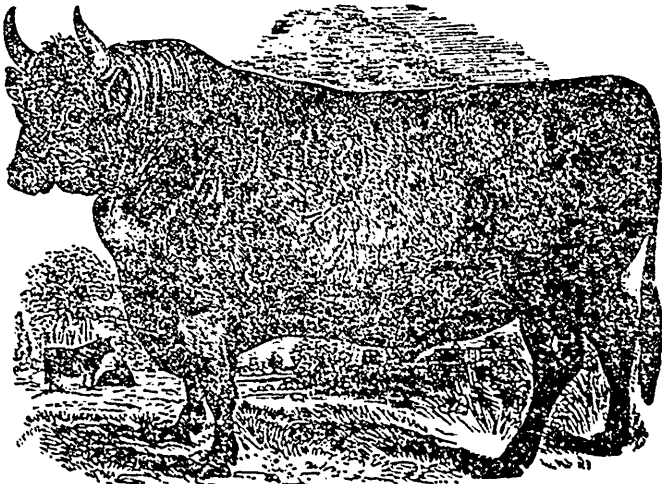
ng and valuable ox or cow. When we have a clear idea of these, we shall be able more easily to form an accurate judgment of the different breeds. If there is one part of the frame, the form of which, more than of any other, renders the animal valuable, it is the chest. There must be room enough for the heart to beat, and the lungs to play, or sufficient blood for the purposes of nutriment and of strength will not be circulated; nor will it thoroughly undergo that vital change which is essential to the proper discharge of every function. We look, therefore, first of all to the wide and deep girth about the heart and lungs. We must have both: the proportion in which the one or the other may preponderate, will depend on the service we require from the animal; we can excuse a slight degree of flatness on the sides, for he will be lighter in the forehead, and more active; but the grazer must have width as well depth. Not only about the heart and lungs, but over the whole of the ribs, must we have both length and roundness; the *hooped* as well as the deep barrel is essential; there must be room for the capacious paunch, room for the materials from which the blood is to be provided. There should be little space between the ribs and the hips. This seems to be indispensable in the ox, as it regards a good healthy constitution, and a propensity to fatten; but a largeness and drooping of the belly is excusable in the cow, or rather, though it diminishes the beauty of the animal, it leaves room for the udder; and if it is also accompanied by swelling milk veins, it generally indicates her value in the dairy.

This roundness and depth of the barrel, is most advantageous in proportion as it is found behind

the point of the elbow, more than between the shoulders and legs, or low down between the legs, rather than upward toward the withers; for it diminishes the heaviness before, and the comparative bulk of the coarser parts of the animal, which is always a very great consideration.

The loins should be wide, for they are the prime parts; they should extend far along the back: and although the belly should not hang down, the flanks should be round and deep. The hips, without being ragged, should be large; round rather than wide, and presenting, when handled, plenty of muscle and fat. The thighs should be full and long, close together when viewed from behind, or have a good twist, and the farther down they continue close the better. The legs short, varying like other parts according to the destination of the animal; but decidedly short, for there is an almost inseparable connection between length of leg and lightness of carcass, and shortness of leg and propensity to fatten. The bones of the legs, and they only, being taken as a sample of the bony structure of the frame, generally, should be small, but not too small—small enough for the well-known accompaniment, a propensity to fatten; but not so small as to indicate delicacy of constitution, and liability to disease.

Last of all, the hide—the most important thing of all—thin, but not so thin as to indicate that the animal can endure no hardship: movable, mellow, but not too loose, and particularly well covered with fine long and soft hair. We shall enter more fully and satisfactorily into this subject in the proper place; but this bird's-eye view may be useful. We return to the Devon cattle.



THE DEVON BULL.

The more perfect specimens of the Devon breed are thus distinguished. The horn of the bull ought to be neither too low nor too high, tapering at the points, not too thick at the root, white below, and of a yellow or waxy colour at the tip. The eye should be clear, bright, and prominent, showing much of the white, and have around it a circle of a dark orange color. The forehead

should be flat, indented, and small, for by the smallness of the forehead the purity of the breed is very much estimated. The cheek should be small, and the muzzle fine: the nose must be of a clear yellow. The nostrils should be high and open: the hair curled about the head. The neck should be thick, and that sometimes almost to a fault.

Excepting in the head and neck, the form of the bull does not materially differ from that of the ox, but he is considerably smaller. There are exceptions, however, to this rule.

The head of the ox is small, very singularly so, relatively to his bulk; yet he has a striking breadth of forehead. It is clean and free from flesh about the jaws. The eye is very prominent, and the animal has a pleasing vivacity of countenance, distinguishing it from the heavy aspect of many other breeds. Its neck is long and thin, admirably adapting it for the collar, or the more common and ruder yoke.

It is accounted one of the characters of good cattle, that the line of the neck from the horns to the withers should scarcely deviate from that of the back. In the Devon ox, however, there is a peculiar rising of the forehead, reminding us of the blood-horse, and essentially connected with the free and quick action by which this breed has ever been distinguished. It has little or no dewlap depending from its throat. The horns are longer than those of the bull, smaller, and fine even to the base, and of a lighter colour, and tipped with yellow. The animal is light in the withers; the shoulders a little oblique; the breast deep, and the bosom open and wide, particularly as contrasted with the fineness of the withers. The fore-legs are wide apart, looking like pillars that have to support a great weight. The point of the shoulder is rarely or never seen. There is no projection of bone, but there is a kind of level line running on to the neck.

These are characteristic and important points. Angular bony projections are never found in a beast that carries much flesh and fat. The fineness of the withers, the slanting direction of the shoulder, and the broad and open breast, imply strength, speed, and aptitude to fatten. A narrow chested animal can never be useful either for working or grazing.

With all the lightness of the Devon ox, there is a point about him, disliked in the blood or riding horse, and not approved in the horse of light draught—the legs are far under the chest, or rather the breast projects far and wide before the legs. We see the advantage of this in the beast of slow draught, who rarely breaks into a trot, except when he is goaded on in *catching times*, and the division of whose foot secures him from stumbling. The lightness of the other parts of his form, however, counterbalances heaviness here.

The legs are straight, at least in the best herds. If they are in-kneed, or crooked in the fore-legs, it argues a deficiency in blood, and comparative incapacity for work; and for grazing, too, for they will be hollow behind the withers, a point for which nothing can compensate, because it takes away so much from the place where good flesh and fat should be thickly laid on, and diminishes the capacity of the chest and the power of creating arterial and nutritious blood.

The fore-arm is particularly large and powerful. It swells out suddenly above the knee, but is soon lost in the substance of the shoulder. Below the knee, the bone is small to a very extraordinary degree, indicating a seeming want of strength;

but this impression immediately ceases, for the smallness is only in front—it is only in the bone; the leg is deep, and the sinews are far removed from the bone, promising both strength and speed. It may perhaps be objected that the leg is a little too long. It would be so in an animal destined only to graze; but this is a working animal, and some length of leg is necessary to get him actively over the ground.

There is a very trifling fall behind the withers, but no *hollowness*, and the line of the back is straight from them to the setting on of the tail. If there is any seeming fault in the beast, it is that the sides are little too flat. It will appear, however, that this does not interfere with feeding, while a deep, although somewhat flat chest is best adapted for speed.

The two last ribs are particularly bold and prominent, leaving room for the stomach and other parts concerned in digestion to be fully developed. The hips, or huckles, are high up, and on a level with the back, whether the beast is fat or lean. The hind quarters, or the space from the hip to the point of the rump, are particularly long, and well filled up—a point of importance both for grazing and working. It leaves room for flesh in the most valuable part, and indicates much power behind, equally connected with strength and speed. This is an improvement quite of modern date. The fullness here, and the swelling out of the thigh below, are of much more consequence than the prominence of fat which is so much admired on the rump of many prize cattle.

The setting on of the tail is high; on a level with the back; rarely much elevated or depressed. This is another great point, as connected with the perfection of the hind quarters. The tail itself is long, and small, and taper, with a round bunch of hair at the bottom.

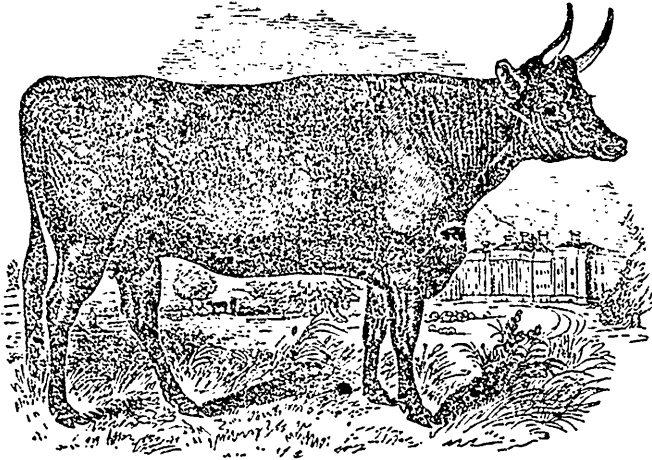
The skin of the Devon, with its curly hair, is exceedingly mellow and elastic. Graziers know that there is not a more important point than this. When the skin can be easily raised from the hips, it shows that there is room to set on fat below.

The skin is thin rather than thick. Its appearance of thickness arises from the curly hair with which it is covered, and curly in proportion to the condition and health of the animal. These curls run like little ripples on water. Some of these cattle have the hair smooth, but then it should be fine and soft. Those with curled hair are more hardy, and fatten more kindly. The favorite colour is a blood red. This is supposed to indicate purity of breed; but there are many good cattle approaching almost to a dark bay. If the eye is clear and good, and the skin mellow, the paler colors will bear hard work, and fatten as well as others; but a beast with pale hair, and hard under the hand, and the eye dark and dead, will be a sluggish worker, and an unprofitable feeder. Those of a yellow color are said to be subject to diarrhoea, or scouring.

These are the principal points of a good Devon ox; but he used to be, perhaps is yet, a little too flat-sided, and the rump narrowed too rapidly behind the hip bones; there was too much space between the hip bones and the last rib; and he

was too light for tenacious and strong soils. A selection from the most perfect animals of the true breed—the bone still small and the neck fine, but the brisket deep and wide, and down to the knees, and not an atom of flatness all over

the side—these have improved the strength and bulk of the Devon ox, without impairing, in the slightest degree, his activity, his beauty, or his propensity to fatten.



THE DEVON COW.

There are few things more remarkable about the Devon cattle than the comparative smallness of the cow. The bull is a great deal less than the ox, and the cow smaller than the bull. This is some disadvantage, and the breeders are aware of it; for, although it may not be necessary to have a large bull, and especially as those of any extraordinary size are seldom handsome in all their points, but somewhere or other present coarseness or deformity, it is almost impossible to procure large and serviceable oxen, except from a somewhat roomy cow. These cows, however, although small, possess that roundness and projection of the two or three last ribs, which make them actually more roomy than a careless examination of them would indicate. The cow is particularly distinguished for her full, round clear eye, the gold-colored circle round the eye, and the same color on the inside skin of the ear. The countenance cheerful, and the muzzle orange or yellow. The jaws free from thickness, and the throat from dewlap. The points of the back and the hind quarters different from those of other breeds, having more of roundness and beauty, and being free from angles.

The qualities of the Devon may be referred to three points:—working, fattening, and milking.

Where the ground is not too heavy, the Devon oxen are unrivalled at the plough. They have a quickness of action which no other breed can equal, and very few horses exceed. They have a docility and goodness of temper, and stoniness and honesty of work, to which many horses cannot pretend. It is a common day's work on fallow land for four Devon steers to plough two acres with a double furrow plough. Four good steers will do as much work in the field, or on the road, as three horses, and in as quick, and often quicker time, although farmers calculate two oxen equal to one horse. The principal objection to Devon oxen is, that they

have not sufficient strength for tenacious, clayey soils: they will, however, exert their strength to the utmost, and stand many a dead pull, which few horses could be induced or forced to attempt. They are uniformly worked in yokes, and not in collars. Four oxen, or six grown steers, are the usual team employed in the plough.

The opponents of ox-husbandry should visit the valleys of north or south Devon, to see what this animal is capable of performing, and how he performs it.

The profit derived from the use of oxen in this district arises from the activity to which they are trained, and which is unknown in any other part of the kingdom. During harvest time, and in catching weather, they are sometimes trotted along with the empty wagons, at the rate of six miles an hour, a degree of speed which no other ox but the Devon has been able to stand. It may appear singular to the traveller, that in some of the districts that are supposed to be the very head-quarters of the Devon cattle, they are seldom used for the plough. The explanation, however, is plain enough. The demand for them among graziers is so great, that the breeders obtain a remunerating price for them at an earlier age than that at which they are generally broken in for the plough.

They are usually taken into work at about two years old, and are worked until they are four, or five, or six; they are then grazed, or kept on hay, and in ten or twelve months, and without any further trouble, are fit for the market. If the grass land is good, no corn, or cake, or turnips, are required for the first winter, but, of course, for a second winter these must be added. The graziers like this breed best at five years old, and they will usually, when taken from the plough, fetch as much money as at six. At eight or nine years, or older, they are rapidly declining in value.

After having been worked lightly on the hills for two years, they are bought at four years old by the tillage-farmer of the vales, and taken into hard work from four to six; and, what deserves consideration, an ox must be thus worked in order for him to attain his fullest size. If he is kept idle until he is five or six, he will invariably be stunted in his growth. At six he reaches his full stature, unless he is naturally disposed to be of more than ordinary size, and then he continues to grow for another half year. The Devon oxen are rarely shod, and very rarely lame.

Their next quality is their disposition to fatten, and very few rival them here. Some very satisfactory experiments have been made on this point. They do not, indeed, attain the great weight of some breeds; but, in a given time, they acquire more flesh, and with less consumption of food, and their flesh is beautiful in its kind. It is mottled, or marbled, so pleasing to the eye and to the taste.

For the dairy, the Devons must be acknowledged to be inferior to several other breeds. The milk is good, and yields more than an average proportion of cream and butter; but generally it is deficient in quantity. There are those, however, and no mean judges, who deny this, and select the Devons even for the dairy.

Such is not, however, the common opinion. They are kept principally for their other good qualities, in order to preserve the breed; and because, as nurses, they are indeed excellent, and the calves thrive from their small quantity of milk more rapidly than could possibly be expected.

The original breed of British cattle is a very valuable one, and seems to have arrived at the highest point of perfection. It is heavier than it was thirty years ago, yet fully as active. Its aptitude to fatten is increased, and its property as a milker might be improved, without detriment to its grazing qualities.

Those points in which the Devons were deficient thirty years ago, are now fully supplied, and all that is now wanting, is a judicious selection of the most perfect of the present breed, in order to preserve it in its state of greatest purity. Many of the breeders are as careless as they ever were; but the spirit of emulation is excited in others. Mr. Davy, of North Molton, lately sold a four-year old bull, for which the purchaser had determined to give one hundred guineas had it been asked.

The Devon cattle are now more than usually free from disease. The greater part of the maladies of cattle, and all those of the respiratory system, are owing to injudicious exposure to cold and wet; the height and thickness of the Devonshire fences, as affording a comfortable shelter to the cattle, may have much to do with this exception from disease.

The Devons have been crossed with the Guernsey breed, and the consequence has been, that they have been rendered more valuable for the dairy; but they have been so much injured for the plough, and for the grazier, that the breeders are jealous to preserve the old stock in their native purity.

The treatment of the calf is nearly the same in every district of North Devon. The calves that are dropped at Michaelmas, and sometime afterward, are preferred to those that come in February, notwithstanding the additional trouble and expense during the winter. The calf is permitted to suck three times every day for a week. It is then used to the finger, and warm new milk is given it for three weeks longer. For two months afterward it has plenty of warm scalded milk, mixed with a little finely-powdered linseed cake. Its morning and evening meals are then gradually lessened; and, when it is four months old, it is quite weaned.

Of the other districts of Devonshire little need be said. Toward the south, extending from Harland toward Tiverton, the Devons prevail, and in their greatest state of purity. There are more dairies than in the north, and supplied principally by the Devon cows. Such are the differences of opinion even in the neighboring districts, that the later calves are here uniformly preferred, which are longer suckled, and afterward fed with milk and linseed-meal.

Advancing more to the south, and toward the borders of Cornwall, a different breed presents itself, heavier and coarser. We have arrived now in the neighborhood of Devonport, where larger cattle are required for the service of the navy; but we must go a little more to the south, and enter on the tract of country which extends from Tavistock to Newton Abbott, before we have the South Devons in full perfection. They are a mixture of the Devons with the native breed of the country; and so adapted do they seem to be to the soil, that all attempts to improve them, so far as grazing and fattening go, have utterly failed. They are often 14 cwt. to the four quarters; and steers of 2½ cwt. are got with fair hay and grass to weigh from six to nine cwt. They bear considerable resemblance to the Herefords, and sometimes the color, and the horn, and the white face, are so much alike in both, that it is difficult to distinguish between them, except that they are usually smaller than the Herefords.

There are few parts of the country in which there is such bad management, and utter neglect of the preservation of the breed, as in this and the most eastern part of Devon. It is not properly a grazing district, except in the neighborhood of Tavistock; but young cattle are rather brought forward for after-grass or turnips elsewhere than finished here for the market, and the method in which this is conducted is not to be commended. If a calf look likely to fatten, it is suffered to run with the cow ten or twelve months, and then slaughtered. If others, that had not before shown a disposition to thrive, now start, they are forwarded as quickly as may be, and disposed of; and therefore it is that all those that are retained, and by which the stock is to be kept up, are the very refuse of the farm. Yet the breed is not materially deteriorated. It has found a congenial climate, and it will flourish there in spite of neglect and injury. The grand secret of breeding is to suit the breed to the soil and climate. It is because this has not been studied, that those breeds, which have been invaluable in certain

districts, have proved altogether profitless and unworthy of culture in others. The South Devon, are equally profitable for the grazier, the breeders and the butcher; but their flesh is not so delicate as that of the Devons. They do for the consumption of the navy; they will not suit fastidious appetites.

The farmers in the neighborhood of Dartmoor breed very few cattle. Their calves are usually procured from East Devon, or even from Somerset or Dorset. They are reared at the foot of the moors for the use of the miners. All, however, are not consumed; but the steers are sold to the farmers of the South Hams, who work them as long as they are serviceable; they are then transferred to the graziers from Somersetshire, or East Devon, or Dorset, by whom they are probably driven back to their native county, and prepared for the market of Bristol or London. A very curious peregrination this, which great numbers of the west-country cattle experience.

As we now travel eastward, we begin to lose all distinctness of breed. The vale of Exeter is a dairy district, and, as such, contains all kinds of cattle, according to the fancy of the farmer. There are a few pure Devons, more South Devons, and some Alderneys; but the majority are mongrels of every description: many of them, however, are excellent cows, and such as are found scattered over Cornwall, West Devonshire, Somerset, and part of Dorset.

As we advance along the south and the east, to Teignmouth, Exmouth, Sidmouth, and over the hill to the fruitful vale of Honiton, we do not find oxen so much used in husbandry. The soil is either a cold hard clay, or its flints would speedily destroy the feet of the oxen. The same variety of pure Devons and South Devons, and natives of that particular district, with intermixtures of every breed, prevail, but the South Devons are principally seen. Some of these cows seem to unite the opposite qualities of fattening and milking. A South Devon has been known, soon after calving, to yield more than two pounds of butter a day; and many of the old southern native breed are equal to any short horns in the quantity of their milk, and far superior to them in its quality.

The Devon cattle prevail along that part of the county of Somerset which borders on Devon, until we arrive in the neighborhood of Wincanton and Ilchester, where the pure breed is almost lost sight of. In the north of Somerset, few of the Devons are to be seen; but along the coast, and even extending as far as Bristol and Bath the purest breed of the Devons is preferred. They are valued for their aptitude to fatten, their quickness and honesty at work; and they are said to be better milkers than in their native county. They are of a larger size, for the soil is better, and the pasturage more luxuriant. It is on this account that the oxen bred in some parts, and particularly in the Vale of Taunton, although essentially Devons, are preferred to those from the greater part of Devonshire, and even from the neighborhood of Bainstaple and South Molton. They are better for the grazier and for the dairy; and, if they are not quite so active as their progenitors, they have not lost their docility and free-

ness at work, and they have gained materially in strength.

The farmers in the south and south-west of Somerset are endeavoring to breed that sort of cattle that will answer for the pail, and the plough, and grazing—a very difficult point; for those that are of the *highest proof* (exhibiting those points or conformations of particular parts which usually indicate a propensity to fatten) are generally the worst milkers, both as to quantity and quality. This being, however, a dairy county, as well as a grazing one, or more so, the principal point with them is a good show for milk. They are, for the most part, of the Devon red, and the best suited for all purposes of any in the West of England. All that is necessary to keep them up in size and proof, and of a good growth, is to change the bull every two years. This is a very important, although an overlooked and unappreciated principle of breeding, even where the stock is most select. No bull should be longer used by the same grazier, or some degree of deterioration will ensue.

It must, nevertheless, be confessed, that in the greater part of the county, and where the Devons are liked best for husbandry and for grazing, experience has taught many farmers to select another breed for the dairy.

While our views regard the general breeding of Devons, as seen in the practice of the mass of breeders in Devonshire, it is yet proper to say that there are some few breeders who have carried their cattle forward to a degree of excellence that would seem incapable of further advancement; and which is now so high that we may perhaps call it perfection. In point of working form they are not deteriorated, and yet they have all the maturity of the short horn, and are equal to any breed in the abundance of meat on the prime parts, and in the high quality of that meat, being marbled and sparkling in the highest degree.

The leading breeders are Mr. James Quartly, of Champson Molland, and his brother, Mr. John Quartly, of Molland; Mr. Richard Merson, of Brinsworthing; and Mr. James Davy, of Fluton Barton, all in Devonshire. Mr. James Quartly has been, more than any other breeder, distinguished as a winner of prizes at the shows of the Royal Agricultural Society of England, and the other gentlemen named have been successful often at these shows, though as the breeders of the animals shown, more than as the exhibitors. Indeed Mr. Merson has himself never shown, and yet has bred several animals that have won in the hands of others.

The Messrs. Quartlys the inheritors of an ancient stock, succeeded to the herds of their father, the late Mr. Quartly, and their uncle, the present Mr. Francis Quartly, who, from age, has declined further breeding. From their predecessors they have obtained both reputation and excellence in their cattle, and they are maintaining the high character derived from their father and uncle.\*

\* It may be mentioned that animals bred by Messrs. James and John Quartly, won every prize for Devons save one, at the last show of the English Agricultural Society at Exeter, in Devonshire, July 1850, and this was by far the best and most numerous show of Devons ever made.

Mr. Merson, also, succeeded his father as a breeder, and, like his father, ranks at the top of the profession. His cattle are remarkable for an abundance of fine meat on the choice parts, great evenness, very early maturity, and milking quality unsurpassed by any Devons; and indeed their milking capacity, as a herd, is extraordinary, many of his cows equaling the short horns in quantity, while the milk still preserves the known superior richness of the Devon race.

Mr. Davy likewise inherits both the herd and the reputation of his father, a distinguished breeder, and his aim has been, like Mr. Merson's, to have animals not only of great excellence of carcase, but of superior milking capacity.

Mr. George Turner, of Barton, near Exeter, in Devonshire, has in the last few years entered the field of competition with these ancient breeders, and, deriving his cattle from them, is breeding with distinction.

Of late years, Devon bullocks have appeared in the Smithfield Club shows, and, when the numbers exhibited are considered, have been far more successful than any other breed. At a recent show of the Club, there were only thirteen Devons shown, and three won prizes, and that, too, in a competition with one hundred and seven beasts, which were mainly short horns and Herefords. Two of these were exhibited by the Earl of Leicester, and one was good enough to carry off the Gold Medal, as the best ox in the yard. The Earl of Leicester, and his father before him, and their tenant, Mr. Bloomfield, all of Norfolk, are well known breeders of Devons. They have derived much of their late blood from the Messrs. Quartlys, Mr. Merson, and Mr. Davy.

*To be continued.*

### LECTURE OF PROFESSOR HINCKS,

ON THE

RELATIONS OF NATURAL HISTORY TO AGRICULTURE.

The Professor spoke as follows:—

LADIES AND GENTLEMEN,—On this first occasion of addressing you, I have felt disposed to avail myself of the opportunity for illustrating the real and practical importance of the subject which occupies me as a public teacher, and which is only beginning to take its proper place in systems of education, by asking you to view it in connection with what is acknowledged to be among the most important of human occupations, and which is especially associated with the prosperity of this Province. We will therefore now take into consideration the relations of Natural History with Agriculture. Agriculture in the ordinary and convenient application of the term, includes all the pursuits of husbandry, whether strictly in the culture of the soil or in the breeding or management of stock. It is an acknowledged principle respecting all the arts of life that a mere theoretical study of what is proper for effecting a given purpose would be insufficient and would only lead to failure, whilst the skill which is attained by practice under the guidance of experienced teachers, and which depends much on the force of habit, may in all ordinary cases be trusted for its efficiency

though entirely unaccompanied by theoretical knowledge or mental cultivation. Respecting all the arts of life, however, it is equally certain that the possession of theoretical knowledge increases the interest of the artisan in his pursuit, and greatly increases the probability of his attaining a superior skill so as to be qualified for directing others, or for effecting improvements, whilst it gives him a higher character and a more important social position, and always naturally connects it-elf with the general cultivation of his mind and elevation of his character. It may be regarded as an admitted principle needing no defence before an enlightened audience, that the more those who pursue any art are acquainted with the reasons for the processes they are engaged in performing, and are conversant with the sciences connected with the subjects of their labor, the higher, morally, intellectually, and socially will be the average character of the artisans, and the greater will be the amount of improvement in their particular art so far as it admits of improvement. Receiving this principle as established beyond reasonable question, I need only now concern myself with its application to the subject immediately before us. Natural History, in the limited sense in which the title is now generally employed, includes all knowledge respecting the animal and vegetable kingdoms, whether physiological, descriptive, systematical, geographical, or economical. Everything relating to the modes and conditions of life of all organized bodies, the circumstances which influence their development, the climate limits within which they are circumscribed, the changes through which they pass, and the sources of their health and disease, with the influences they severally exert on each other, all come within the wide range of Natural Science. Here then of course we have the scientific exposition of a large part of what the practical agriculturist aims to accomplish. Here we have the theory which explains and justifies his daily practice—or as it may not unfrequently happen—proves the error of that practice, and suggests the remedy for its imperfections and failures. Much of what a farmer does is founded on vegetable physiology. He understands its principles and applies them, which is best, or he follows, perhaps blindly, rules which are founded upon its principles, and are good and useful for reasons which a knowledge of them would enable him to understand; or else—and this is by no means unfrequent—he follows rules or imitates customary practices where they are altogether wrong, and where the light of science would at once exhibit and expose the error. In this case he—or those who taught him—or with whom the practice originated, have had false notions on some points of vegetable physiology, or have hastily and erroneously generalized some principle which was true within proper limits. All plants must grow according to the laws of vegetable life as modified in the case of each particular species. If our rules and proceedings are founded on a knowledge of these laws, whether attained by scientific study or by experience and tradition, we succeed in our undertakings, but so far as we unconsciously vio-



late these laws, and remain the slaves of prejudices which are opposed to them, we can only bring upon ourselves disappointment. The scientific teacher of agriculture occupies a most important position, bringing into their proper relations theory and practice, and harmonising into one body facts and principles drawn from several distinct sciences all bearing on the business of the farmer; but what he undertakes to expound is not so much a separate science, having principles of its own, as a combination of scientific truths belonging to Natural History, Geology, Chemistry, Meteorology, Mechanics, brought together in their proper places and proportions, compared with the results of experience and applied to the direction of practice. This is not a low view of what is to be accomplished by the agricultural profession—it is the highest—and it does justice to the varied and extensive acquirements demanded from him and the great difficulties which he must have overcome in his noble undertaking, to make science useful in one of the most important of human employments where it is greatly needed, and yet there are many obstacles to its efficient application. It is interesting to observe how large a portion of agricultural science consists in applications of animal and vegetable physiology. Why does the farmer weed his field? Because the space and nutriment it affords are all needed to bring to perfection its valuable products, which must be cooked or starved, if worthless articles are allowed to intrude. Why, if attentive and judicious, does he exert himself to remove the weeds in due season, and from the paths and waysides as well as from the occupied ground? Because he knows the importance of anticipating the scattering of the seed, having some idea of the rate of increase of ordinary herbs, and as he intends to make his land clean so as to lessen his trouble from year to year, he feels the necessity of looking well to prevent sources of a fresh stock of weeds from escaping notice in dry places where they are passed by the thoughtlessness of no consequence. Why does the judicious farmer carefully study the proportion of seed which he employs to a given extent of land for his various crops, weighing the evidence from reason and experience in favor of the different practices? He desires to obtain from his land the greatest amount of produce which it will yield, and he has to judge between a greater number of plants, each of which has full room for development. The practical point is to decide how many plants of the kind required can come to full perfection on a given space, so that all the available nutriment may be employed under this name set in three different ways. Some of them alter the texture of the soil so as better to adapt it to particular crops, or to make it more manageable for the various processes of culture. Others are chiefly useful by acting upon matters already contained in the soil so as to set free a useful supply of nutriment which would not have been immediately available—whilst others again directly furnish the requisite supplies of food to the crops, and of these some immediately produce all the effect of which they are capable, whilst others

yield their supplies gradually, their effect enduring for a considerable period. The intelligent cultivator applies nothing to the soil without having a good idea what he wants and in what way the desired effect is likely to be produced. He knows that if the soil be clean and open, it rapidly absorbs nutriment from the atmosphere—he knows that his crops all take away some portion of the nutriment contained in the soil; that each different kind makes to a certain degree a different selection, whence the advantage of a succession of crops—and that, although in fresh soils, these peculiarly abounding in the materials by which vegetable life is supported, successive crops may for a time be taken with apparent success, or scarcely perceptible annual deterioration; yet, as each crop actually withdraws a certain amount of important matter from the soil, the idea of inexhaustible fertility is absurd, and it is only when we find the means of cheaply restoring each year what is taken away, that we have a permanently profitable system of cultivation. This is the plain teaching of the success of vegetable physiology—it is conformable with good sense and experience, and it is not without surprise that we read of a neighbouring country remarkable for its extraordinary natural fertility, in which the annual yield of the wheat crops is rapidly diminishing, in consequence it is to be presumed, of entire neglect in restoring anything to the ground. We have here a fresh and fertile region. It is to be hoped we shall act more wisely than to exhaust its powers whilst we daily waste the means of restoring them, thus driving ourselves to the necessity of the constant occupation of fresh land in order simply to maintain our present productive power, which is our desire and our interest to increase. I might go through in the same way every point of agriculture, horticulture, and arboriculture, showing that every rule is founded on notions supposed to be correct of the structure, mode of life, and nutrition of plants, and that every improvement depends on more correct knowledge in these departments, or a more careful application of what is known. For some of the important facts to be ascertained, we depend on the science of chemistry, the facilities afforded by which are of the utmost value, but in this instance it only brings its resources to the aid of vegetable physiology, which really supplies the whole scientific laws of this grand department of agriculture, and if we turn to that other great department which relates to the keeping of stock of all kinds both for the supply of food and for assistance in labor, it will be found that here also the rational principles which guide the practice of the skillful farmer belong to the science of natural history, and that it is from that study of animal physiology and from diffused knowledge of its established principles that we must chiefly hope for the improvements which are to be expected and derived. The whole theory of feeding and fattening, and of preserving the desirable qualities of individuals in breeding is drawn from animal physiology, and when we review the great improvement made of late years in the management of all kinds of stock, which we know to have directly arisen from theoretical

considerations, it would be unreasonable in us to call in question the practical value of scientific knowledge, as it is manifestly impossible for us to deny the relation of the scientific principles to the practical rules. I have already sufficiently guarded against its being supposed that I deem scientific instruction necessary for practical skill—an extravagant pretension which I altogether disclaim; but in proving the real and intimate connection of natural science with the daily business of every one engaged in agricultural pursuits, I assuredly prove the importance to the country of natural science being studied by many, and being recommended and promoted as a useful pursuit, and especially I prove that it is an appropriate and most desirable study for that large class among us which are immediately concerned in agriculture, and hence, at the same time affords a peculiarly efficient means of exercising the various powers of the mind, and calling forth its best feelings; its neglect as a branch of education would seem to imply a species of infatuation. But what I have said thus far relates to the dependence of the whole science and art of agriculture for its theoretic basis on the more extended science of natural history. I proceed to point out some more immediate special applications of the knowledge of natural history to the business of the farmer. Many of the diseases to which cultivated plants and domestic animals are subject, and which sometimes occasion very extensive mischief, depend on the presence of para-sitical plants or animals often exceedingly minute. The first step towards remedying the evil is to understand its real cause, and it must be evident that the more that is known of the structure, nutrition, and reproduction of the parasites, the more successfully can we attempt to limit their ravages. The ergot, rust, and mould, on the grain producing plants, are minute and very curious fungi whilst serious injuries are caused by aphides or plant lice, a tribe of insects of very remarkable character, which, under the names of black fly, green fly, and American blight, given to different species, are well known by their occurrence on wheat, beans, hops, and apple trees, as well as on roses, and other plants. No one of this tribe, indeed, is altogether injurious; writers have attributed some species to the potato blight, but tho' it is well known that the potato, like many other plants, is occasionally infested by aphides, which are either a cause or a symptom of weakness and bad health; it has been abundantly proved that the aphides are present without causing the disease, and the disease exists without the presence of aphides; the species, too, which has been accused of causing the disease, and has in consequence been extensively distributed under Mr. Sweet's direction as a microscopic object, turns out to be a common species occurring on many plants, and never before suspected of peculiarly malignant influences. Much better founded is the supposition that an internal fungus is the immediate cause of the potato disease, but until we can determine whether it really produces the decay or only arises out of it, and what are the causes, atmospheric or otherwise, of its prevalence in par-

ticular seasons, we cannot acknowledge the resources of science to have been exhausted in vain against this mysterious plague. It deserves consideration, whether all the remedies that have been employed with most appearance of success may not have their efficacy accounted for by their destroying the vitality of the spores of the fungus in the sets, whilst the presence of these spores from other sources would explain their occasional failure. On the whole, I cannot but think the fungoid theory the most rational. We have seen at least that the aphid theory is entirely without foundation; that of the wearing out of the varieties is disproved by the notorious fact, that all varieties, new or old, are about equally liable to the disease, none more so than seedlings, and even seedlings raised from seed brought from the native country of the potato. The theory which attributes the disease to superfluous moisture occurring in particular seasons is disproved by its recurrence with very great variety in the character of the seasons, and in all sorts of situations, whilst the theory of the dependence of the plague on peculiar atmospheric states, electrical or otherwise, is too vague to be listened to in the absence of specific facts, and is only an indirect acknowledgment of entire ignorance on the subject. I need not now refer more particularly to the injuries suffered by domestic animals from the attacks of various insects, but none, I am sure, can possess even a slight acquaintance with the peculiar instincts of certain insect tribes, and the manner in which some of them accomplish such extensive mischief, without perceiving how usefully the knowledge of nature connects itself with the business of the farmer. Then there is the whole subject of our relations with the wild birds and animals of our country. Probably most country people are indiscriminate destroyers of all the wild creatures that fall in their way, whilst a few, influenced by feelings of kindness, or a regard to beauty, are indulgent to all excepting a few of the most obviously and extensively injurious. A little knowledge of Natural History would assist us in judging what creatures are really our enemies, and which we should protect as friends and allies, and would at the same time enable us to carry on the war most successfully where it is necessary from a just regard to our interests. If we recall to mind the silly prejudice to which the harmless and even useful hedgehog is so commonly sacrificed in England, or consider the general disposition to destroy birds without much distinction of kinds, we see how beneficial a little knowledge of natural science would be to the dweller in the country. It would thus be decided that the larger and more powerful birds of prey are enemies, because our domestic animals would be among the chief objects of their attack; but the owl tribe, feeding chiefly on small quondrups, aid us in our necessary warfare against mice and rats without doing us any material damage. The numerous insectivorous birds are all eminently useful, as are those which feed on small seeds, but a few of the frugivorous tribes feeding much on our favorite fruits can only hope for partial indulgence on account of their beauty

or their song. In the case of the omnivorous birds, which live during a large part of the year on grubs, caterpillars, and other insect prey which they hunt with admirable skill, but which also attack at certain seasons grain and roots, we are obliged to strike a balance between the benefit and the injury we receive in which a sense of the happiness of the creatures and admiration for their beauty, and their wonderful instinct, must be allowed some weight in their favor. Such creatures may reasonably have their increase somewhat limited, but if we had the power utterly to destroy them we should soon feel the evil we should thus have brought upon ourselves. We have read of instances in which the extermination of the common European sparrow has been attended with disastrous consequences to the farmer; and although the rook is loudly condemned by some, the sight of numbers of them following the plough, picking up grubs, worms, and insects, should cause the considerate farmer to relent, even though indignant at thefts among his potato set and his ripening grain. Mere illustrations taken from familiar objects in England will show the importance of similar considerations here, and will satisfy every one that the spirit of wanton destruction and persecution often indulged against the inferior animals is as unwise as it is barbarous; that we should destroy only what we evidently perceive to be injurious and unfitted to dwell in any connection with ourselves, and should see with pleasure the various races of animated beings enjoying themselves around us so far as they may be permitted to do so without any serious interference with those pursuits which are essential to our welfare, and which are manifestly designed to exercise our industry and skill. In respect to all the inferior animals we may accept of the decision of the poet:

*If man's convenience,  
Or health or safety interfere, his rights  
Are paramount and must extinguish theirs.  
Else they are all the meanest things that are,  
As free to live and to enjoy that life  
As God was free to form them at the first,  
Who in His sovereign wisdom made them all.*

Let me conclude with one word as to the pleasure to be derived from the study of Natural History in connection with a country life. What pursuit can we name in which the charms of beauty, variety, and the exercise of various mental faculties are so united? What can we imagine so well calculated to enliven our interest in the scenes of nature, to make each changing season only a change in our pleasures, and to connect the ordinary occupations, and even the sports, of rural life with observations and inquiries full of entertainment as well as usefulness.

Ladies and Gentlemen, I ought to apologise to you who dwell in the city for occupying your time with reflections, whose useful bearing is on a different mode of life from your own; but not to plead now that they are concerned with the advancement of our country and the happiness of a large proportion of its inhabitants, you will perhaps admit that here the bounds of city and country are so imperfectly marked, and so many of you are in hope to be the possessors of farms, that it is not an extravagant assumption to sup-

pose you are sufficiently familiar with agricultural affairs to listen with patience to what relates to them; but if my subject is in any degree out of place here, I am the more indebted to you for the kindness with which you have heard me. The naturalist welcomes every flower, finds new subject for admiration in every living creature; and, when he has exhausted what the unaided eye can reach, has boundless treasures in store to reward his minuter investigation, whilst every object, at the same time that it delights his mind, conveys to it serious instruction, impressing upon him a sense of the presence and the perfections of the great Creator, and preparing him to receive with humility and gratitude the revelations respecting his own condition and prospects of a being whom he adores and loves.

The men  
Whom nature's works can charm, with God himself  
*Hold converse, & grow familiar day by day*  
With his conceptions, act upon his plan,  
And form to his the relish of their souls.

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## Editorial, &c.

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G. BUCKLAND, Esq., EDITOR.

H. THOMSON, Esq., ASSISTANT EDITOR.

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### HINTS FOR THE MONTH.

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A number of very interesting original communications will be found in this number of the *Agriculturist*. The growth of Farmers' Clubs in the country, is a most gratifying feature in connection with the progress of the farmers of Canada. By thus meeting and exchanging their views, much information on many interesting points will be received and imparted, and many errors in opinion or practice may be corrected. And the wide publication of such reports, by inviting farmers in all parts of the country to reflect upon many points of their practice, which, perhaps, they have heretofore adhered to without a doubt of the correctness of them, is calculated to produce the same effect on a large scale, as the discussions themselves do on a limited one. We hope these Farmers' Clubs will increase, and that they will all regularly send us some account of their proceedings. The communication of Mr. Wade, on the important subject of "The Importation of Cattle," is deserving of much attention, and we hope the discussion of this matter may lead to some useful practical result. An interesting communication in hand on "The modern system of Drainage, and its applicability to Canada" is alluded to in another place.

The somewhat unusual length of the above mentioned communications, and of the others not especially alluded to, must serve as an apology for curtailing our usual monthly remarks under the heading of this article. This, however, is of the less consequence, as the work to be performed on the farm during this month is, to a great extent merely a continuation of that for the last two months. Cattle, however, will require increased attention and a liberal supply of nourishing fodder, lest they fall off too much in condition as the trying weather of spring approaches. Early lambing ewes also will require to be carefully tended. Let those that show symptoms of yearning be shut up in a warm room in the evening, lest the newly dropped lambs perish during the cold of a February night. It is necessary, also, to see that the ewes have a liberal supply of milk to support their lambs, and if not, that the lambs be assisted by a little cows' milk, either warm from the cow, or warmed artificially at the fire. When large flocks are to be attended to, the shepherd may carry a little milk in a vessel inside the breast of his coat, in order to keep it of the proper temperature. A few turnips or mangel wurzel, along with sweet nourishing hay, will be useful in stimulating the flow of milk from the dam, and in a few days, by careful attention, the lamb will, generally, be able to get about with its mother.

One important branch of work during this month, in portions of the country where timber is still abundant, will be the splitting of rails, and drawing them while the ground is still hard, to the places where they will be required for fencing in the spring. In settlements of older date, where other expedients have to be adopted than the common rail fence, the getting lumber from the saw mill, and cedar or oak posts for fencing, will engage attention. A plan of fence proposed by Mr. John Wade of Cobourg, as given in the Report of the Hamilton Farmers' Club, in a late number of the *Agriculturist*, is deserving of trial, and would, we think, be found strong and economical.

The making of maple sugar, will probably take place to some extent during this month, in portions of the country where the maple tree is

still abundant. Having in former volumes of the *Agriculturist* given full details of the most approved mode of manufacturing this article, we will not allude to it at length now. But it will be worth while to take pains to make a good article, that will either be pleasant to use, or that will command a ready sale. In order to do this, it is necessary to observe perfect cleanliness in all parts of the operation, regularity in gathering the sap, and to take care to avoid burning in the boiling. It is worth the farmer's attention also to take care and not injure his maple trees any more than can be avoided, as the day may arrive when a wanton destruction of the native growth of the forest, will be regretted.

But soon the approach of blustering and active Spring, will call upon the farmer to rouse up all his energies, for the operations of that busy season. Let him not then be caught "napping," and let no arrears of winter work then cause him to loose even a day in getting his seed into the ground, as soon as it is in a proper condition of warmth and dryness to receive it.

#### THE SMITHFIELD FAT CATTLE SHOW.

This world-renowned Club held its Annual Exhibition in the Bazaar in Baker Street, on the 7th, 8th and 9th days of December 1853, and as usual attracted a large degree of public attention. We condense, for the information of our readers, a few of the more prominent features of the Show, from two of the highest Agricultural authorities in England, the *Mark Lane Express* and the *Agricultural Gazette*.

The cattle department was well sustained as a whole, each breed having animals of superior excellence, and the *over feeding* practice, against which numerous and loud objections were formerly made, appears now to be discontinued. Most of the animals were so fed as best to suit the purposes of the butcher, as affording wholesome and agreeable food, and at the same time indicating the characteristic points of their breeding and fattening properties.

Our readers will recollect that for the past few years an increasingly keen competition has been kept up at the Smithfield Show, between

Short-horns and Herefords, and with results that would indicate that the latter breed was making certain, if not rapid, progress towards that high state of excellence for which the former has so long been celebrated. And this, we believe, to some extent, to have been the case, notwithstanding a different result was obtained at the late Show. The improvement of other breeds is, most certainly, no disparagement to Short-horns, which have been the objects for so many years of the most careful and scientific attention and liberal expenditure; so much so, indeed, as to place them in the first class for general purposes.—“The Short-horn cattle (observes the *Mark Lane Express*) of this year carried away the chief prize in the gold medal, as the best beast of any breed, most justly; thus raising that celebrated breed from the very general imputation of having retrograded for some years past.” This animal was bred and fattened by Mr. R. Stratton of Wiltshire, who has attained great celebrity for his Short-horn stock, which seems characterised for general usefulness. The *Express* remarks, “that much more refined Short-horns are found than Mr. Stratton’s;—finer and more glossy in the skin, and more fashionable and attractive in the color; but for general purposes no equal competitor has yet appeared.” • • • “The Short-horn cattle have been exhibited in a more refined manner than in the Show of this year, but never more usefully. The carcasses have been much more fattened, but better frames of beef have not often appeared.” A very superior Short-horn Cow was shown as extra stock, which won the silver medal. Her colour was most fashionable, and her carcass handsome, almost beyond a fair equality.

In Herefords the first prize, for animals not over three years, deservedly went to Lord Radnor, and for animals above that age the prize was awarded to a very superior animal of great width and rotundity of carcass. There were some good cows shown of this breed. “The Hereford cattle (observes the *Express*) have, certainly, been very much better exhibited than in the show of this year, and more especially the oxen of that breed.” The unsuccessful animals are said to have had, as a class, more *relative* merit than the prize beasts.

In Devons the chief prize went to the Earl of Leicester, for an ox under three years old. “The appearance was neat and feminine, almost beyond example, and the carcass was fleshy in a uniform covering. The twist was narrow, as happens with the Devon cattle. The *Holkham* cattle are known by their very compact symmetry and general contour.” Among the cows and heifers of this beautiful and symmetrical breed there were several samples of rare excellence. “The Devon cattle (says the *Express*) were well exhibited, though wanting the curly coat of hair and thick gelatinous skin in the stock of Mr. Quartly, which never failed to attract our attention, and always obtained a superior notice. The *Holkham* animals are too small, too silky in the skin, and too thin in the hairy covering. The symmetry is unquestionable. • • • • One opinion has long maintained, that the Devon cattle being enlarged in the size, widened in the twist, with upright buttocks, and the horn reduced to one-third of the present length, and retaining the symmetry now possessed, would exhibit a *ne plus ultra* specimen of animal organization in the genus of cattle.”

In the cross breeds there was nothing deserving very special notice, except a few good specimens of Galloway and Highland steers. The Scotch cattle were badly exhibited, particularly the Argyle breed. Two good specimens were shown of Long-horn Cows, one of which obtained a prize. The length of body of this breed is the chief and almost the only recommendation; the lightness of the forequarters sinks the animal into neglect. A most handsome Durham and Galloway Scott heifer, polled, and beautifully variegated in color, obtained a prize. The *Gazette* remarks that “these breeds ought to be more highly encouraged than they are,—not perhaps by such societies as the English Agricultural Society, which aims at the improvement of *breeds*, but by the Smithfield Club, which aims at improvement in the quality of the beef. There is, at all events, a fair claim on their behalf for equal patronage, but this they do not receive, and the expense of conveying animals such long distances as their exhibitors have to incur, ought to be taken into account.”

The sheep department was more than usually

fine. Mr. Foljambe obtained the gold medal and two first prizes, with the silver medal, as the breeder for Leicester Sheep, which for wool, carcase, and purposes of breeding, were considered highly excellent. In short-wooled sheep the Duke of Richmond carried off the gold medal and the three first prizes in these classes! The Duke labored hard for several years after commencing as a breeder of South Downs unsuccessfully, and we well remember hearing his Grace observe after several years, of unsuccessful competition, "that he would not, in consequence, relax in perseverance and diligence, but strive with greater energy till he triumphed,"—a consummation which his Grace now appears to have fully realised.

Pigs had a large exhibition in every class except in the large breeds, which are declining. Only one large animal was shown, but the small and middle breeds were both numerous and superior. Prince Albert was the chief winner of prizes in young and aged pigs, and also of the gold medal.

The *Express* has the following common-sense observations, "The success of His Highness, Prince Albert in the breeding of pigs, and his complete failure this year of the four oxen exhibited in Devons and Herefords, suggests the expediency or necessity of *breeding*, as well as feeding the cattle, when the same success might attend the performance. There is much more merit in breeding cattle than in feeding them, the latter being altogether mechanical, and the former a very high exertion of intellectual judgment and calculation. There is little merit, comparatively, in refining the organization of swine, as the Hog is very susceptible of variations, and an almost universal cosmopolite. The frequent bearing of young, shows the effects of sexual intercourse much sooner than the yearly productions of cattle and sheep. Prizes for any animals might be continued to the breeders only."

There was no Poultry show held in connection with the Smithfield Club; but one was got up in a distant part of London during the same week, which was considered, taking all disadvantages into the estimate, a very creditable display. It numbered 585 pens, exclusive of

pigeons, comprising most of the common and improved varieties, to which liberal premiums were awarded.

Although the Smithfield Club was established for the sole purpose of encouraging the fattening of animals, and has never awarded premiums to the mechanical department of Agriculture yet, for several years past the number of improved implements and machines has gone on rapidly increasing, inasmuch that the Directors of the Show have experienced great difficulty in making room for them;—the only encouragement the Society gives. Manufacturers are eager to avail themselves of the opportunity for showing off their productions, and a large amount of orders are taken. Although the space allotted to this department has been more than doubled of late, it is still found altogether insufficient, and must be yet further increased. Among the new machines we have only space to mention Lawson & Company's Flax-Scutching Machine, which is spoken of as being one of the most elegant specimens of inventive skill that has ever been witnessed. By this machine flax is both broke and scutched in the most perfect manner by one operation, and in an incredibly short space of time. The American Threshing Machine attracted much attention, and it was thought, with some modifications, that it might be adapted to English wants and use. Clayton's Brick-making and Drain Tile machines were to be seen in operation; they have received some important improvements, and commanded general attention. The one-horse machine will make a thousand bricks per hour of the best description.

The business of the Exhibition was wound up as usual by a public Dinner at which several interesting speeches, containing either fresh information or suggestions of improved modes of operation, were delivered by a number of influential landowners and practical farmers.

#### IMMENSE LOSSES ON THE IMPORTATION OF STOCK.

The year 1853 has proved very unfortunate to a number of individuals on this side of the Atlantic, who have been led by a laudable and enterprising spirit to import the improved breeds of farm stock from Great Britain. A number

of fine animals have perished, from one cause or other during the voyage, and our own Province has largely shared in these disasters.

Mr. W. B. Crew, of this city, has, we regret to say, been a great sufferer. Mr. Crew reached home a short time since, with less than one half of the animals which he purchased at great trouble and cost in England! He lost on the passage a valuable Stallion, a splendid young Durham Bull and Heifer, thirteen out of twenty-one, improved Leicester sheep, several of them among the finest that the flockmasters of England could supply, and out of 120 head of carefully selected Poultry, consisting of no less than thirteen of the most approved sorts, only 36 head reached their destination! Several dogs of different breeds, we understand, likewise shared the same fate. The Pigs alone reached Toronto unimpaired in condition and number. Mr. Crew has one very superior Agricultural Stallion left, (which cannot but prove highly advantageous to the country, however otherwise this very disastrous result may be to himself); a fine Durham Heifer, and a few excellent sheep and poultry. The chief causes of these disasters may be traced to the constant rolling of the ship, and the very boisterous state of the weather. We regret to learn that the stock were not insured.

A short time previously, Messrs. Stone & Iles, of Guelph, lost at sea a fine Durham Bull and seven, in calf, Heifers of the same breed, carefully selected from the herd of Mr. Langton, M.P. for the County of Oxford, and brother-in-law to the late Earl Ducie; also fifteen of the finest Cotswold Sheep, from those celebrated breeders, Mr. Bamer, Gloucestershire, and the Messrs. Gillet, of Oxfordshire. During a frightful gale, the sea swept the entire deck, carrying the cattle at one sweep into the ocean. Messrs. Stone and Iles we are glad to learn were moderately insured.

A few months ago, the Messrs. Wade of Cobourg, who are so favourably known for their enterprise in this direction, lost at sea some very superior Durham cattle, as have also several others, both in the British Provinces and the United States.

We likewise learn from an esteemed corres-

pondent in New Brunswick, that Mr. Cuming, Veterinary Surgeon, was deputed to go to England to procure a number of the best Stallions of different breeds, to be distributed over the Province. Mr. Cuming selected eight animals, which are described as possessing first rate qualities; three of them however perished in a severe hurricane when the vessel had been only eight days out. The average cost of the animals was about £300 each.

These melancholy facts sufficiently indicate the necessity for some great improvements being effected in the modes of transporting live stock across the rough Atlantic. The system as commonly pursued by individuals is fraught with infinite anxiety and risk, and as the above facts indisputably show, is but too frequently attended by heavy pecuniary loss. We trust that something practically beneficial will arise out of a late application of the Board of Agriculture to the Government, urging the great importance of making arrangements with the proprietors of the line of Canadian Steamers, for the carrying of improved Stock at moderate rates, and with better and safer accommodations than are usually obtainable.

In conclusion we have much pleasure in calling the attention of our readers to Mr. Wade's article on the importation of cattle, in another column of this journal. The subject deserves to be fully investigated, and must not be allowed to drop without some practical results.

#### IMPROVED DRAINING MATERIALS.

We have much pleasure in stating that Mr. J. H. Charnock, who recently arrived from England, brings with him the best material and intends making Upper Canada his residence. Mr. Charnock has been for many years very favourably known in England, as a writer on the management and improvement of land, and has had extensive experience in the important art of draining, in all its branches. The public will be gratified to be informed that Mr. Charnock has in the course of manufacture, several of his well known Drain Tile Machines, which will be ready for operation as soon as the opening of the spring admits. The machine will make any

form of tiles or pipes, and full particulars as to price &c., will be subsequently announced. This information will gratify our respected Oxford correspondent, G. Alexander, Esq., and also several others, who have written to us at different times on the subject. We request the attention of our readers to an introductory paper on draining, which is now in type, and will appear in our next number, being unfortunately crowded out of this. It is by Mr. Charnock, and is one of a short series to be contributed by him.

Mr. Charnock's present residence is at Hamilton, and he will we have no doubt, be always ready to give any information, or undertake the superintendence of any work, relating to the before mentioned subjects.

ADDRESS OF C. P. TREADWELL, ESQ.,

PRESIDENT OF THE AGRICULTURAL ASSOCIATION OF UPPER CANADA, ON BEHALF OF THAT INSTITUTION

[The following address from the President of the Agricultural Association of Upper Canada has been addressed in circular form, to the officers of County Agricultural Societies, and we have much pleasure in giving it a wider diffusion.]—EDITOR.

*To the President, Vice Presidents, and Directors of the Agricultural Society of the County of—*

Under the provisions of Act 16 Victoria, Chap. 11, and sections 10 & 13, by which the present Board of Agriculture is regulated, four of its members go out this year.

The ballot for that purpose having taken place Colonel Thomson, R. L. Denison, Esq., Sheriff Rutan, and John Harland, Esq., retire at the end of the year.

Col. Thomson is President of the Board, and I believe its first projector, and has been twice President of the Association; Mr. Denison has been for some years Treasurer of the Board and Association, and the duties of that office have been performed in the most efficient manner possible; Mr. Sheriff Rutan has also been President of the Association, and has distinguished himself for zeal and enterprise in the cause of Canadian Improvement, both as a member of the Board, and as a private citizen, and Mr. Harland has been an active and useful member of the Board.

As these gentlemen are all eligible for re-election, I would recommend them to the notice of all the County Agricultural Societies, to be replaced on the Board. And if this suggestion should meet your views, I beg that you would send forward their names to the Bureau of Agriculture, Quebec, immediately after your Annual Meeting in February, according to the requirements of the Act.

It must have been a source of satisfaction to every well-wisher to the prosperity of the country to have witnessed the operations of the Agricultural Association for several years past, and the great advancement that has been made in agricultural science, and I think that the thanks of every County Society must be given to the gentlemen who founded the Agricultural Board and Association, for their indefatigable exertions in bringing them to their present state, and it is to be hoped that we may continue progressing until we reach the highest point of perfection in that science.

At the same time we must not overlook what the Manufacturer and Mechanic have done for the country. I feel great pride in stating that there were many things at the Exhibition at Hamilton, as well as at that at Montreal, which far exceeded those of the same class exhibited at the Crystal Palace in New York. It is to be hoped that no exertions will be spared to ensure our being well represented at the Sydenham Palace at its opening next Spring.

When I first became connected with the Association, I recommended the purchase of a full set of tents sufficient for all the purposes of our Annual Exhibitions, to be the property of the Society. I think the present a favorable time to press the application for funds for that purpose upon the Government. As our Exhibitions are yearly increasing in extent, a sum of at least Fifteen Hundred Pounds for each section of the Province should be obtained for this object. This would lessen the expenditure every year, and increase the amount of our Premiums. I would also recommend an appropriation to every Agricultural Society of a small sum to be exclusively bestowed in Horticultural Prizes, where no Horticultural Society is already established.

The establishment of Agricultural Libraries having been taken under the protection of the Superintendent of Education for Upper Canada, who is doing greater justice to the subject than had my suggestion, made in 1851, been carried out; and under that gentleman's direction an amount of reading matter of a moral, enlightening, and interesting character will be distributed throughout the Province of Upper Canada, (the rapidity of which distribution has been quite unparalleled,) and which it is hoped will be read with profit during the long winter evenings before us. I would here merely remark that the system followed in the Parochial Schools in Scotland might be adopted with advantage in the Public Schools in this country, where the teachers are invariably the librarians, and where they meet one evening in the week for the purpose of evening schools, but always to do their duty as librarians. It is frequently the case that Agricultural Clubs are formed at these meetings, and dissertations are written on subjects connected with science, and submitted to the teacher for discussion; and I would also recommend that an Agricultural Class Book be immediately prepared under the direction of the Superintendent of Education and the Professor of Agriculture, and introduced into every Common School in Canada West.



It is of much importance that every encouragement should be given by Societies and patriotic individuals to the wide dissemination of our monthly journal, *The Agriculturist*, published in Toronto, on very low terms. That periodical contains Reports of the proceedings of the Board of Agriculture, and of Farmer's Clubs, beside a large amount of original and selected matter of great interest to the farmer, and is a valuable medium of communication between individuals and Societies in different parts of the Province.

Having adverted to the rapid growth and advancement of our country, it may be proper to enquire into the causes which have produced such successful results. Our previous Annual Exhibitions have rendered very great service, and the forwarding of selected articles from the Agricultural and Manufacturing departments, as well as from the products of our forests and our mines to the Crystal Palace in London, in 1851, with the exertions of Mr. Logan, the Provincial Geologist, and other gentlemen from Canada, have been productive of them. I am of opinion that there is no other individual to whom Canada is so much indebted as to Mr. Logan, and I would suggest the propriety of immediately presenting him with a testimonial of the highest order. I would further recommend that the Government should be immediately petitioned to double his staff, that all his reports be compiled in one volume, to be printed and widely circulated, and that a second volume follow as soon as it can be completed.

The funds of the Society are in a prosperous condition, and the Government patronage will no doubt be continued to assist the Society in its operations.

The establishment of a Bureau of Commerce and Manufactures, to be connected with that of Agriculture, placed under the superintendance of some person qualified for the office, and whose whole energies could be directed to their advancement, with practical assistants in each of the several departments, would do much to improve our present condition.

I would fain hope that County Societies, as well as individuals, will do their utmost to render our next exhibition, to be held at London, the greatest that we have yet seen.

From the local position of London, it being the centre of an agricultural population of two hundred thousand, in point of soil and climate or agricultural purposes, the best in Canada, whose people will compare favorably with those of any part of Europe or America—these with the advantages of good roads, for which she is indebted to the Government and to the energy of her own people, and the recent construction of railroads, places her in a favorable position, together with the noble manner in which the counties of Middlesex and Elgin have come forward, and the offer of private subscriptions, amounting in all to £1,500; all these favorable circumstances with the co-operation of County Societies generally, must ensure a measure of success that has never yet been equalled among us.

The Exhibition will be held on the 26th, 27th, 28th and 29th days of September, and it is con-

fidently expected that that by time the railroads in that section will be completed, so as to enable London to be approached with the utmost facility.

From the experience of the past we have great pleasure in anticipating the assistance of the ladies in contributing articles of usefulness and embellishment, at the forthcoming Exhibition.

In conclusion, I feel confident that the assistance of the Bureau of Agriculture, the Board and Association of the Province, with their officers, and the Local Committee, and the liberal offer of the Great Western Railroad, tendered through Wm. Niles, Esq., Vice-President of the Association, and one of its Directors, these, with the blessing of Providence, must ensure the success of the Exhibition.

I have the honor to be, gentlemen,

Your obedient servant,

CHAS. P. TREADWELL,

President of the Agricultural Association of U. Canada.

#### SCOTCH AGRICULTURAL STATISTICS.

The Highland Society, acting under the auspices of the Board of Trade, have now completed the agricultural statistics of the three counties of Roxburgh, Haddington and Sutherland.

In the county of Roxburgh, the estimate of wheat (dropping fractions) was 14,205 quarters on an acreage of 5181; of barley, 64,050 quarters on an acreage of 14,615; of oats, 13,797 quarters, on an acreage of 28,852; of beans and peas, 5458 quarters, on an acreage of 1612; of turnip-seed, 44 quarters, on an acreage of 43; of turnips, 361,319 tons, on an acreage of 23,800; of potatoes, 8287 tons, on an acreage of 1451; of mangold, 1,4 tons, on an acreage of 16; and of carrots, 43 tons, on an acreage of 6.

In the county of Haddington, the estimate of wheat was 50,341 quarters, on an acreage of 15,339; of barley, 67,079 quarters, on an acreage of 12,889; of oats, 94,823 quarters, on an acreage of 16,802; of beans & peas, 16,734 quarters, on an acreage of 4809; of turnip-seed, 206 quarters, on an acreage of 157; of turnips, 203,154 tons, on an acreage of 1620; of potatoes, 23,976 tons, on an acreage of 4246; of mangold, 619 tons, on an acreage of 48; and of carrots, 1378 tons, on an acreage of 107.

In the county of Sutherland, the estimate of wheat was 803 quarters, on an acreage of 217; of barley, 15,797 quarters, on an acreage of 3643; of oats, 24,331 quarters, on an acreage of 6569; of beans and peas, 145 on an acreage of 30; of turnip-seed, 1 quarter and 6 bushels on an acre; of turnips, 32,959 tons, on an acreage of 2090; of potatoes, 17,298 tons, on an acreage of 2506; of mangold, — on an acreage of —; and of carrots, 15 tons on an acreage of 14.

The general abstract shows the aggregate estimates of the three counties as follows:—estimates of wheat, 63,410 quarters, on an acreage of 20,738; of barley, 147,927 quarters, on an acreage of 31,068; of oats, 160,458 quarters, on an acreage of 52,233; of beans and peas, 22,338 quarters, on an acreage of 6342; of turnip-seed, 353 quarters, on an acreage of 202; of turnips, 491,493 tons, on an acreage of 42,150; of potatoes, 49,562 tons, on an acreage of 8208; of mangold, 734 tons, on an acreage, of 64; and of carrots, 1436 tons, on an acreage of 114.

## Literary and Miscellaneous.

WILLIAM McDUGALL, ESQ., EDITOR.

## CLIMATIC INFLUENCES.

What is the cause of those marked changes which take place in the human organization on this Continent? The subject is one of great interest, and has often engaged our attention, but neither from books, nor conversation with scientific men, have we been able to obtain a very satisfactory explanation. That the original form and features of the first settlers in the United States have been entirely lost, and that in the most Eastern of the New England States, where the least mixture has taken place, a distinct American type has been produced, are facts that cannot be disputed. A "lean Yankee," is a common expression even in Canada. The tall frame, long neck, fleshless body, coarse hair, thin features, colorless complexion, and feverish activity of the Eastern Yankee, are characteristics that have appeared within the last two hundred years. They are most strongly marked where there has been the least mixture of race, and almost disappear in the Atlantic cities, where that mixture has been greatest. What is the cause, or causes, of this deterioration, for such it must be considered, of the human animal? And do not all animals deteriorate in the new world? If the cause is not local, but universal, and constant, why has not the aboriginal race been affected by it? Or, does it require more than two hundred years for animals to become acclimatised on this continent?

Various have been the speculations on this subject. Some have attributed the physical changes constituting this American type, to mental activity, restlessness, and indigestion, &c. But is it not obvious that these are rather effects than causes? What causes the nervous energy, and the anxious disposition that distinguish the American from the European? We must look deeper for the true explanation. We have heard tight lacing, want of exercise, and indoor habits of females, and indulgence in sweetmeats, pickles, &c., by children, assigned as causes of this physical degeneracy. But though some of these practices may aid the primary cause, they are themselves, evidently but secondary. We observe in Canada the same tendencies. The second generation exhibits many features of the American type; and in the third, these are still more strongly marked. Even the peculiarities of speech—the drawling, nasal tones of the yankee—seem indigenous in the new world. It is mentioned as a curious fact by Sir Charles Lyell, that the native Anglo-Australians bear a considerable resemblance to the Anglo-Americans "in look, and manner of speak-

ing which," he says, "is a mystery, for there is certainly no analogy between the climates of the two countries."

Climate has great influence upon plants, frequently changing their form, and improving or deteriorating their substance. Why may it not exert an equal power over animals? We believe the cause of changed "looks" in the natives of America, must be sought for in the climate, and it is not improbable that the "manner of speaking" depends on physiological peculiarities produced by the same cause. A distinguished naturalist, M. Desor, in an essay recently read before a meeting of the learned societies of Switzerland, on the climate of America, has developed the theory of a climatic cause for the degeneration of race in this country, at great length. He brings an array of facts to support his views. He tells us that when German and Swiss immigrants arrive in New-York, they generally find that the climate does not differ much from their own, but that after a time they begin to notice little differences, which compel them in spite of themselves, to adopt the American system of living—a system which on their first arrival they invariably condemn. They know, indeed, that the Northern States lie in nearly the same latitude as Central Europe, and the well-informed among them understand that the isothermal circles coincide still more exactly. Add to this that they learn by experience that the winters in the neighbourhood of New York and Boston are about as cold as at Frankfurt, Basle or Zurich, and the summers at least as warm, and yet after all there is a difference which they cannot understand.

The effects of this difference in climate are seen as well in some of the most ordinary operations of every-day life as in its influence on certain trades. German immigrants find to their astonishment on a washing-day, that their things dry full twice as quickly, even in the depth of winter, as in Europe. Accustomed too, to bake bread for family use only once in some two or three weeks they are necessarily surprised when they discover that here on the second or third day it becomes hard, dry and unpalatable. German housekeepers find, that this dryness of atmosphere has its advantages, inasmuch as vegetables and fruits, of all kinds are more easily preserved throughout the winter than in their own Fatherland. The Hamburger, although it is colder here at Christmas than in his native city, seldom sees those frosted windows to which he has been accustomed from childhood, as there is rarely sufficient moisture in our atmosphere to produce them. "Many additional instances of the effect of the American climate, on the ordinary routine of life," observes M. Desor, "might be given, and I could also point out others where it affects the person. For

instance the hair soon loses its natural moisture and becomes dry."

But there are other facts equally remarkable. "No sooner are the walls of a building plastered than the tenant may move in without any fear of rheumatism or those sicknesses which would be the inevitable consequence of so doing in Europe. So too the plasterer himself can lay on the second coat at once; while on the other hand the upholsterer and piano-forte manufacturer must be very careful in selecting their wood, for what would be amply seasoned in Europe would soon crack and split in America."

Our author is evidently speaking of the Eastern and Middle States, for this extreme dryness of the atmosphere does not prevail in Western Canada, nor in those States bordering the great Lakes.

The number of rainy days in America, if we except perhaps England and Norway, is not less than in Europe generally. But here the air never retains the moisture; no sooner does it cease raining than the hygrometer commences at once to sink, and soon shows that the atmosphere is as dry as ever. This dryness of the American climate is very readily explained by our savan. In America, as in Europe, westerly winds chiefly prevail. They proceed, however, to the coasts of Europe, loaded with the moisture which they have collected during their passage across the ocean. Consequently, rain generally accompanies them. The westerly winds reach the middle and Eastern States only after passing over a whole continent, and when they have lost a large portion of their moisture. Therefore they seldom bring rain with them.

In considering the action of our climate on animals and plants, it would seem as Buffon has observed, that while the animals generally that have been introduced here, have on the whole, rather deteriorated from the parent stock, plants on the other hand, have decidedly improved. From this it is argued that America is peculiarly the continent for the vegetable, while Europe is that for the animal kingdom. The history however, of North America is of too recent a date to afford any very just grounds for determining the modifications the animal kingdom may have undergone, and our author prefers rather looking at man himself.

He attributes the peculiar characteristics of the New Englanders to the influence of climate. "That some of these," he says, "depend on climate is seen by the fact that a trip to Europe will give fullness to the cheek, while the Englishman rarely grows stouter, but almost invariably thinner during his sojourn in America." To the dryness of the atmosphere too, M. Desor would attribute the feverish activity which seems to belong to the American. He considers that the want of moisture in the air may act to some extent on the nervous system, and supports his theory by noticing that a long con-

tinuance of a north-east wind—the wind that corresponds in dryness with the westerly one in America—produces the same kind of restlessness and activity among the inhabitants of the Jura. If a dry wind blowing for a short time only among the Alps, can exert any such influence, we can easily imagine that the comparative thorough dryness of the American climate may have something to do with that constitutional activity which is so rapidly advancing us in all the arts of civilized life, while it is at the same time producing a gradual deterioration of the physical man.

M. Desor's views come to us through an imperfect fragmentary translation, and we are, therefore, unaware if he produces any facts to justify the belief that the immigrant races will, in a few centuries, become thoroughly acclimatised. "A careful study," says Lyell, "of the present distribution of animals and plants over the globe, has led nearly all our best naturalists to the opinion that each species had its origin in a single birth place, and spread gradually from its original centre." Now if we adopt this view of "specific centres," and admit the Sacred Record as authority on questions of geography, we must conclude that the aboriginal tribes migrated from Europe at some remote period, and are merely "settlers" of an older date. The well-built frames, and due proportion of muscular and adipose substance displayed by many of these tribes, prove incontestibly that the deteriorating climatic influences of this continent may be overcome in a long course of years. But whether the descendants of the first settlers of New England (more than two centuries having now elapsed) exhibit any evidence that they have reached the lowest point in the descending scale, and have begun to ascend to the original type, is a point of much interest, and one that we should like to see investigated. We have met with no facts to support such a conclusion; the evidence produced rather goes to show that the nadir of physical deterioration cannot be reached in two centuries. Sir Charles Lyell seems to be of this opinion. In his "Second Visit to the United States, &c.," he remarks (Vol. 1, p. 123) that,—

"Many who have been born in America of families settled there for several generations find their health improved by a visit to England, just as if they returned to their native air; and it may require several centuries before a race becomes thoroughly acclimatised."

And after mentioning the fact that the atmosphere is drier, and the annual range of the thermometer much greater in America than in corresponding latitudes on the Eastern side of the Atlantic, he says,—

"Even so cosmopolite a being as man may demand more, than two centuries and a quarter before

he can entirely accommodate his constitution to such altered circumstances and before the successive generations of parents can acquire and transmit to their offspring the new and requisite physiological peculiarities."

#### SURVEY OF THE PHYSICAL SCIENCES.

Man was early led to the study and contemplation of Nature. The day and night-heavens the varied surface of the earth, the deep forests and the beautiful and somewhat mysterious succession of the seasons could not fail to awaken thought. The free winds and the boundless extent that every where met his eye, agitated his soul with strange wonder and awe.

The cradle of the human race favored all this, and by a sweet necessity drew man to the embrace of Nature. That cradle was undoubtedly in Southern Asia. On all sides rose parapedded hills, broad streams hurried to the sea, and a genial climate fostered budlings of thought. The soul of man turned to Nature, as the flower turns to the sun. Admiration cheered the birthplace of the race, and in it appeared the early leafage of the physical sciences.

The Physical Sciences embrace all the facts of Nature, class'fied on the principle of resemblance. These facts have been accumulating through ages, and now form distinct branches of knowledge, such as Mechanics, Astronomy, Optics, Electricity, Magnetism, and Chemistry proper. These, and all their auxiliaries of implements, constitute the Physical Sciences.

The birth of these sciences is undoubtedly found in the Cosmogony of the Orient. Traditions of the creation are sown in all languages, and lie at the basis of all enquiries into the wonderful spectacle of Nature.

The birth of the physical sciences was succeeded by a strange religious observation. The shepherd, as he tended his flock, watched the fires of heaven as "they burned on their quiet way," till thoughts of worship stole into his heart; the caravan and travelling merchant, as they crossed the vast plateaus of Asia, saw and felt more than the wandering pedlar of Wordsworth, "A something that disturbed them with the joy of elevated thought." They observed

the forces and motions of heaven and earth, and laid up the rude materials of the physical sciences,

The religious element soon became predominant. The boundlessness of Nature excited awe. Mystery waited on her inexplicable and infinite diversity, and nursed into gigantic vigor the mystic superstition of the East.

This element was doomed to divide its power, and in some degree become the servant of a degrading selfishness. The love of *power* and *gain*, assisted by a subtle policy, invested the observations of Nature with imaginary awe. Superstition became a pampered thing, and the deformed *out-croppings* of the physical sciences appeared in *astrology* and the arts of *divination*.

From this oppressive thralldom, thought, after the lapse of ages, began to awaken. Minds here and there, stirred by the love of knowledge, brooded over the known facts of Nature, and warmed them into order and life. Travelling merchants brought new facts to view; caravans were induced to carry freights of knowledge as well as wares.

The banks of INDUS, favoured by Nature and Providence, became not only the nursery of the race, but also of the first civilization. W. Von Humboldt is justified in tracing up all the streams of philosophy that irrigate the world to that fountain.

*Chaldea*, we are certain, was the seat of early astronomical observations. As early as 720 B. C., eclipses of the moon were noticed and chronicled. Egypt, we have good reason to believe, made observations on the eclipses of the sun and moon about the time of the Exodus, 1491 B. C. The Chaldeans divided the day into twelve hours. The *sun-dial* of Ahaz is brought to view in the old Testament.

Mechanics were brought into notice at an early period in the history of the world. The forces of Nature were turned into the service of man. The ruins of Southern India and the pyramids of Egypt are indications of gigantic labor. Their construction must have required machines of no ordinary power. The labors of Archimedes in this department of physical science are familiar. The ancients ascribe

to him the invention of *forty* mechanical contrivances; the moderns regard him as the founder of Mechanics. The protracted defense of Syracuse against the Romans, sustained chiefly by his machines, is a wonderful fact in history.

#### MECHANICS.

Mechanics in some form, must have had an existence almost commensurate with the creation of man. Power and motion belong to life. Their application was needed even in the preparation of food and clothing. Implements were required in the erection of the first hut and the formation of the first battle-club.

The growth of mechanics must have been rapid. The love of power is deeply seated in the heart; and every instrument that could multiply its force would be eagerly sought. Mechanical inventions were the earliest indications of inventive skill. What they were in ancient times, history only indicates—indicates in the ruins of India, Babylon, Egypt, Tyre, and Asia Minor.

Archimedes must be regarded as the founder of this branch of physical science. He was born in Syracuse, 287 B.C. He laid down the principles of *statics* and *hydrostatics*, and invented many machines.

Stevinus, an engineer of the Lower Countries, is the first person in modern times who advanced beyond the ancients. He lived in the sixteenth century.

Galileo promoted this branch of knowledge. He was born at Pisa, 1564. To him we are indebted for the first great steps in modern mechanics. Huggins contributed something. He explained the doctrine of the pendulum. Newton completed the superstructure of the principles of mechanics.

Since his day, the application of these principles has been incessant and varied. England and America have attained an eminence among the nations, on account of their machines. In the latter country, the geometrical lathe of Durand and the press of Hoe cannot be passed over. The former adorns our notes with the most beautiful machine-work, and by rendering counterfeiting impossible, gives security to our currency. The latter by its astonishing capacity, throws off 20,000 impressions in an hour.

The advantages arising from *applied mechanics* are of the greatest importance. To these advantages, as much as to anything else, England and America owe their greatness. Two structures may be named here,—the tubular bridge over Menai Straits, and the Crystal Palace. They are good instances of the perfection of applied mechanics, and the estimation in which the subject is held by the public.

#### ASTRONOMY.

The ancients were early drawn to the study of the heavens. The Chaldeans and Egyptians excelled in celestial observations. They named the planets, noticed eclipses, marked the constellations of Orion, Pleiades, Hyades, and Bootes,

and divided the day into twelve hours. Speculation naturally arose. It was fruitless. The stars appeared as so many brilliant points revolving in a moveable sphere. Their explanations were only vague guesses at truth.

Astronomy lay in this state till Europe awoke from the dead lethargy of the middle ages. It was the first science that fixed the awakening mind. Parbech and Regiomanus prepared the way for Copernicus, the herald of the true system. He gave his views to the world in 1543. Kepler, born in 1570, added much to astronomical knowledge. His observations and reasoning were profound. He discovered the *ellipticity* of the orbits of the planets, and laid down what is known as the *three laws of nature*. While Kepler was thus engaged in explaining the motions of the planets, Galileo, the martyr of astronomy, constructed the telescope. The moon was observed, and a resemblance between the heavenly bodies and the earth indicated. The armed eye gazed upon new fixed stars, and the satellites of Jupiter and Saturn.

With Newton, the study of astronomy commenced a new era. The time for establishing the true system on principles had arrived. The motion of the heavenly bodies was compared with the laws of motion as known upon the earth. The great law of attraction was discovered.

During the last fifty years, the progress of astronomy has been rapid. Instruments have been perfected, and their range enlarged. Lord Rosse's telescope has found a record in every daily sheet. Observatories are multiplied. The theory of comets has been explained. A single year's observations at Washington gives us 15,000 stars, most of which are unknown. New planets are added almost monthly to the record of worlds.

#### OPTICS.

The science of optics was long neglected. Its subtle nature of light seems to have eluded the observations of the ancients. Euclid began a study.

In the eleventh century, Alhazen wrote a treatise on optics. He was acquainted with the anatomy of the eye. Bacon, in the seventeenth century made some good remarks on the uses of lenses. Spectacles were invented by Arnato, Florentine, 1313. In the fifteenth century, Marcellus pointed out the crystalline lens of the eye and explained in a good degree the nature of long and short-sighted eyes. Baptista Porta, a Neapolitan, invented the *Camera Obscura*, about the year 1560. It led Kepler to explain the action of the eye in vision. The rainbow was explained in 1610, by Dominis. In 1590, Janssen, Middleburgh, in Zealand, invented the telescope. The news of this was immediately communicated to Galileo, who constructed one and turned it to the heavens. From this time forward, the science of optics rose into notice. Descartes, Gregory, Barrow, Higgins and Newton labored to promote its growth. The theory of light proposed by Newton, for a long time occupied the respect. It was the theory of *emission*. Light is thrown off from all luminous bodies.

theory of Huggins is now ascendant. It is the theory of undulation. Light is a subtle ether, pervading all space, and when thrown into a vibratory state occasions vision.

## ELECTRICITY.

This branch of physical science is wholly based on experiment. It was known to the ancients only in some natural phenomena. The Greeks were acquainted with the attractive and repulsive powers of amber, the mineral from which electricity takes its name.

In 1720, Stephen Gray made some discoveries. They respected conductors, non-conductors, and insulated bodies. Du Fay, in 1773, added to these discoveries. He regarded electricity as consisting of two kinds, and distinguished these by the names *vitreous* and *resinous*.

The first successful attempt to explain the facts of electricity was made by Dr. Franklin. With him, it took the form of a science, and since his day, has risen to a proud rank through the labours of Coulomb, Volta and Faraday. The *telegraph* is the noblest instance of its application—the invention of Sydney Morse.

## MAGNETISM.

Magnetism had its beginning in a knowledge of the loadstone. The Chinese were first acquainted with it. There is no room to doubt that the *compass* was brought from the East.

Gilbert, in the time of Elizabeth, is the first one who attempted to collect the phenomena of magnetism, and classify them. From that time observation has been adding valuable discoveries.

Columbus observed the declination of the needle in his great voyage of discovery. The dip was first noticed by Norma in 1576. Halley attempted to explain the declination. The earth was regarded by him as a magnet. The *diurnal variation* of the needle was discovered in 1772 by Graham. Oersted of Copenhagen, discovered the effect of electric currents on the needle, and led the way to electro-magnetism. Faraday has done much for electricity. His discoveries are of the highest order. As a consequence of these inquiries, we now look upon *light*, *electricity*, and *magnetism* as different functions of the same principle. The magnetic poles of the earth and the sublime phenomena of the aurora borealis and australis are owing to electric currents.

## CHEMISTRY.

Chemistry proper now claims our notice. Unlike most of the sciences, it sprung directly from delusion and superstition. Its parentage is found in magic.

Freed from this connection, it proffered its aid to medicine, and was accepted. Shortly after this alliance, it began to speculate on the nature of the medicines it assisted in compounding.—These speculations gave it new life. It came forth into public notice, and did good service for miners and artists. The Arabians studied it in the form of Alchemy.

Chemistry, as a science, was unknown to the ancients. It is based strictly on experiments, and has taken its true rank within the last century. Its progress has been a brilliant one, and

is owing to the labours of such men as Davy, Beecher, Black, Cavendish, Dalton, Faraday.

Already it has reached to a high degree of perfection and utility. The four elements of the ancients have been extended to sixty-one, the laws of chemical attraction explained, the nature of substances brought to view by analysis, and the results applied to manufactures, agriculture, and the arts.—*Condensed from Popular Educator.*

## FARM ARCHITECTURE.

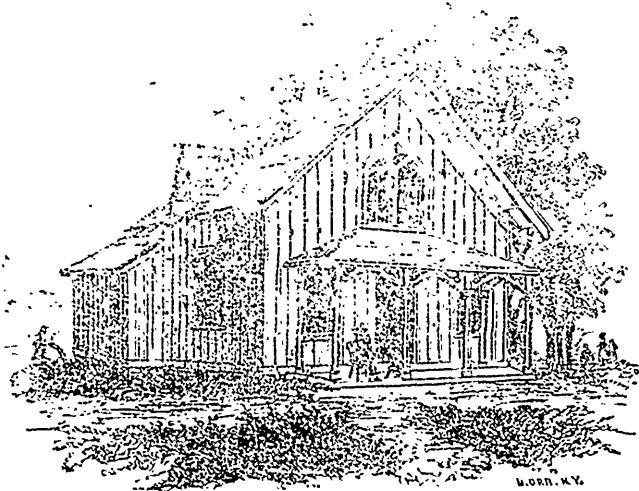
There can be no greater folly than that exhibited by the farmer in this country, who expends a large sum of money in the erection of a family mansion. In England, and in those countries on the Continent of Europe where the laws of entail, and the accumulation of immense tracts of land in the hands of individuals, ensure the transmission of estates to the remote descendants of the present owner, there may be some excuse for building "Seats," and "Halls," and "Castles" at an immense cost. But in the United States and Canada, there should be no castles, except "castles in the air." We know an instance in the neighbouring State, which proves in a striking manner the folly of attempting to ape, on this side of the Atlantic, where all classes are equal, the extravagance and splendour of the *privileged* classes in Europe. A hereditary landholder, whose estate in broad acres, was very large, took it into his head to build a Mansion. It cost \$100,000! The expense of this structure, and other extravagancies, involved him in difficulty; his rent roll fell off, and getting into law with his tenantry, he was obliged to sell the greater portion of his estate. The "Mansion" that cost \$100,000, did not bring \$50,000, and the purchaser even at that price, was in our opinion, *half* as big a fool as the original owner. The man who sinks an ordinary fortune in a house, throws it away. He may be rich enough to afford the luxury while he lives, but when he comes to divide his property among his children, he discovers the loss. It is not worth half its cost to any of them, and it cannot be sold in all probability for more than a third of its cost to a stranger. Therefore, we conclude that it is folly for the farmer, folly for the merchant, folly for the richest man amongst us to build a *costly* mansion, or miniature castle. The conditions of society, the institutions and

laws of the country, the genius and habits of the people,—all pronounce it to be *folly*.

But all this being admitted, we see no reason why the farmer, as well as the merchant or the professional man who is about to build a residence, should not adopt a pleasing style, and provide every comfort for himself and his family that can be secured at a *reasonable* cost. An ill-constructed, uncouth, miserable tenement, with which those who inhabit it are satisfied, indicates a spiritless, apathetic state of mind; and gives no hope of elevation of character, or improvement in condition, either physical or moral. While deprecating extravagance and gingerbread display, we would recommend utility, neatness, and a proper regard for effect. The difference in cost between an awkward structure that violates all the rules of propriety and good taste, and a building executed in an agreeable style of architecture, at once pleasant to the eye and convenient in arrangement, is much too small to make a man of sense and refinement of feeling choose the former. We have been glad to notice a very general improvement in the new farm houses erected in Canada within the last few

years. The ambitious and flashy style so much in vogue on the other side of the line, has not gained much foothold in this country, and is giving place to a more correct taste even among our neighbors.

In former volumes, we have occasionally given designs for buildings suited to the wants and circumstances of this country, some of which have been copied. Subscribers have thanked us for the information thus furnished, and some have expressed a wish for a greater number of designs, from which they could make a selection. They do not consider the great expense which these illustrations involve;—but believing that they are as interesting and useful as any we could present, we shall from time to time give our readers the benefit of such new designs as may appear adapted to their wants. In many cases, a cottage, rather than a farm house, is wanted; sometimes by small farmers, mechanics, &c., sometimes by large farmers for members of the family, old or young. We give below the design of a neat cottage, which we find in a recent work on rural architecture.



FARM COTTAGE.

The above cottage is suitable for the small farmer, or cottager, who requires room, and ample conveniences. It is a first class dwelling, of its kind, and, in its details and finish, may be adapted to a variety of occupations, while it will afford a sufficient amount of expenditure to

gratify a liberal outlay, to him who chooses to indulge his taste in a moderate extent of decoration and embellishment.

The ground plan of this cottage is 30 x 22 feet in light rural-Gothic style, one and a half stories high, the posts 14 feet in elevation. It has 14

chimneys, passing out through the roof on each side of the ridge, uniformly, each with the other. The roof has a pitch of 45° on a horizontal line, giving it a bold and rather dashing appearance, and deeply sheltering the walls. The side gables give variety to the roof, and light to the chambers, and add to the finish of its appearance; while the sharp arched double window in the front gable adds character to the design.

The deep veranda in front covers three-quarters of its surface in length, and in the symmetry of its roof, and airiness of its columns, with their light braces, give it a style of completeness; and if creeping vines or climbing shrubs be trained upon them, will produce an effect altogether rural and beautiful.

Or, if a rustic style of finish be adopted, to render it cheaper in construction, the effect may still be imposing, and in harmony with the purposes to which it is designed. In fact, this model will admit of a variety of choice in finish, from the plainest to a high degree of embellishment, as the ability or fancy of the builder may suggest.

#### INTERIOR ARRANGEMENT.

From the veranda in the center of the front, a door opens into a hall,  $17 \times 7$  feet, with a flight of stairs leading in three different angles, to the chambers above. Opposite the front door is the passage into the living room, or parlor,  $17 \times 15$  feet, lighted by three windows, two of which present an agreeable view of an adjacent stream and its opposite shores. At the line of partition from the hall, stands a chimney, with a fireplace, desirable, or for a stove, to accommodate both this room and the hall with a like convenience; and under the flight of stairs adjoining opens a china closet, with spacious shelves, for the safe-keeping of household comforts. From this room, a door leads into a bedroom,  $10 \times 13$  feet, lighted by a window opening into the veranda, also accommodated by a stove, which leads into a chimney at its inner partition. Next to this bedroom is the kitchen,  $12 \times 13$  feet, accommodated with a chimney, where may be inserted an open fireplace, or a stove, as required. In this is a flight of back chamber and cellar stairs. This room is lighted by two windows—one in the side, another in the rear. A door leads from its rear into a large, roomy pantry, 8 feet square, situated in the wing, and lighted by a window. Next to this is a passage, 3 feet in width, leading to the wood-house, (in which the pantry just named is included.)  $16 \times 12$  feet, with nine-foot posts, and roof pitched like the house, in the extreme corner of which is a water-closet,  $5 \times 3$  feet. Cornering upon the wood-house beyond, is a small building,  $15 \times 12$  feet, with ten-foot posts, and a roof in same style as the others—with convenience for a cow and a pig, with each a separate entrance. A flight of stairs leads to the hay-loft above the stables, in the gable of which is the hay-door; and under the stairs is the granary; and to these may be added, inside, a small accommodation for choice stock of poultry.

The chamber plan is the same as the lower floor, mainly, giving three good sleeping-rooms;

that over the kitchen, being a back chamber, need not have a separate passage into the upper hall, but may have a door passage into the principal chamber. The door to the front bedroom leads direct from the upper hall. Thus, accommodation is given to quite a numerous family. Closets may be placed in each of these chambers, if wanted; and the entire establishment made a most snug and compact, as well as commodious arrangement.

#### WINTER.

(For the Agriculturist.)

Winter, stern Winter has come, and all the associations connected therewith rush at once upon the mind; the dull, dreary day is ushered in with a snow-storm, and the monotony is only relieved by the "sound of the merry sleigh-bells," as the farmer with his sturdy team ploughs his way through unbroken snow drifts to the market. The forest trees, which but a few weeks ago were covered with leaves, affording at once shade and shelter to man and beast, are now stripped of their foliage, and through their naked branches the storm sweeps with a melancholy sound. The feathered songsters which sported among their branches, and enlivened us with their melodies, have gone to a more congenial clime; even the little squirrel, that was all activity a short time ago, betakes itself to some hollow log or trees where he has laid up his winter's stock of nuts, and waits in patience the return of spring. Yes! gray-haired Winter has come again; no doubt the farmer has been mindful of his approach, and is prepared to give him a "warm reception;" his cellars are made tight, his wood-houses well filled, his farming implements carefully laid up; plenty of wheat in the granary, oats for his horses, hay and straw for his stock. The wintering of stock is a very important matter to the farmer; and more especially now, that from them he derives much of his wealth. Wheat as an article of produce had not been for the last few years at all remunerative; and the intelligent farmer seeing this, had turned his attention to another object, viz., raising stock; such being the case, how necessary is it that all kinds of stock should be cared for now, when no longer able to provide for themselves; their stables should be tight and warm, humanity as well as economy points this out as absolutely necessary; when thus protected they keep their flesh on a less quantity of food. Cattle, especially, are often cruelly treated by exposure, when a simple shed could be made with a few boards, that would answer every purpose. They should not only receive hay or straw, but water, regularly. There should be a pump in every farm-yard.

Hogs should also have a warm sty, though cold does not affect them in the same way that wet does; however, a close sty is preferable,—it is a cruel practice to let hogs shift for themselves in winter. Sheep, being more tender and less able to protect themselves, have a peculiar claim on the farmer,—he should see that they are carefully penned, to protect them from marauding dogs or wolves, and regularly fed and salted. They will repay him well for his care.

R. S.



POETRY.

[BRYANT stands in the front rank of American poets. His spirit, like the "Voice of Autumn," roams through fields and uplands, by brooks and sandy streams. He is now getting old, but the following lines, in Graham's Magazine, for January, speak the language of "other days."]

THE VOICE OF AUTUMN.

BY WILLIAM CULLEN BRYANT.

There comes from yonder height,  
A soft repeating sound,  
Where forest-leaves are bright  
And fall, like flakes of light,  
To the ground.

It is the autumn breeze,  
That, lightly floating on,  
Just skims the weedy leas,  
Just suns the glowing trees,  
And is gone.

He moans by sedgey brook,  
And wails, with a sigh,  
The last pale flowers that look,  
From out their sunny nook,  
At the sky.

O'er-shouting children flies  
The light October wind,  
And, kissing cheeks and eyes,  
He leaves their merry cries  
Far behind.

And wanders on to make  
In a soft woe-sounding  
By distant wood and lake,  
Where distant fountains break  
From the ground.

No tower where maidens dwell  
Can wail a moment's stay;  
Nor can it trowd'n dell;  
He sweeps the upland swell,  
And away!

Mourne'st thou thy homeless state?  
Oh soft repeating wind!  
That can'st seek'st and late  
The rest it is thy fate  
Not to find.

Not on the mountain's breast,  
Not on the ocean's shore,  
In air the East and West:  
The wind that stops to rest  
Is no more.

By valleys woods, and springs,  
No wonder thou should'st grieve  
For all the glorious things  
Thou touchest with thy wings  
And must leave.

MISCELLANEOUS.

There is more fatigue in laziness than in labour.

Since the generality of persons act from impulses, much more than from principles, men are neither so good nor so bad as we are apt to think them.—Hare.

Satire is a composition of salt and mercury; it depends upon the different mixture and preparation of these ingredients that it comes out of a noxious medicine or a rank poison.—Jeffrey.

There is no use of money equal to that of beneficence; health enjoyment grows on reflection, and our money is most fruitful when it ceases to be in our possession.—Mackenzie.

To-morrow.—"It shall be done to-morrow."—"To-morrow the case will be just the same." "What, do you get me one day as so great a matter?" "But when that other day has dawned, we have already spent yesterday's to-morrow. For see, another to-morrow wears away our years, and will always be a little beyond you."

"I would reprove thee," said a wise beath "if I were not angry." Should not Christ follow the example?

Some read to think—these are rare; some write—these are common; and some read to t—these form the great majority.

TO CORRESPONDENTS.

W. P. Sparta, Yarmouth; Communication received too late for insertion this month, will be given in next.

TORONTO RETAIL MARKETS.

	January 31, 185
Flour—Millers' extra superfine, per barrel....	0 0 a 33
do Superfine do .....	0 0 a 31
Farmers', per 196 lbs.....	27 6 a 28
Wheat—Fall, per bushel, 60 lbs.....	6 3 a 7
Spring, per bushel, 60 lbs.....	0 0 a 0
Oatmeal, per barrel.....	0 0 a 35
Rye, per bushel, 56 lbs.....	4 0 a 4
Barley, per bushel, 48 lbs.....	2 9 a 3
Oats, per bushel 34 lbs.....	2 6 a 3
Peas, per bushel.....	2 6 a 4
Potatoes, per bushel.....	2 9 a 3
Apples, per bushel.....	2 6 a 3
Grass Seed, per bushel, 45 lbs.....	7 5 a 0
Clover Seed, per bushel.....	27 6 a 28
Hay, per ton.....	60 0 a 75
Straw, per ton.....	50 0 a 60
Onions, per bushel.....	5 0 a 7
Butter—Fab, per lb.....	0 10 a 0
Fresh, per lb.....	0 10 a 0
Lard, per lb.....	0 6 a 0
Porkies, each.....	2 6 a 3
Grease, each.....	2 9 a 3
Ducks, per couple.....	1 6 a 1
Fowls, per pair.....	1 0 a 1
Cheese, per lb.....	0 5 a 0
Pork, per 100 lbs.....	22 6 a 26
Fresh, per lb.....	0 0 a 0
Beef, per 100 lbs.....	22 6 a 27
Beef, per lb.....	0 3 a 0
Hams, per 100 lbs.....	45 0 a 50
Bacon, per 100 lbs.....	35 0 a 40
Wool, per lb.....	1 2 a 1
Sheep-kms, fresh slaughtered.....	5 0 a 5
Calf-kms, fresh, per lb.....	0 0 a 0
Hides, per 100 lbs.....	22 6 a 25
Eggs, per dozen.....	1 0 a 1
Veal, per lb, by the quarter.....	0 3 a 0
Mutton, per lb, by the quarter.....	0 3 a 0
Coal, per ton.....	37 6 a 46
Firewood, per Cord.....	20 0 a 22

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