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THE

CANADIAN AGRICULTURIST,

AND

JOURNAL OF TRANSACTIONS

OF THE

Board of Agriculture, Agricultural Association, &c.

PUBLISHED MONTHLY,

AND DEVOTED TO

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THE

CANADIAN AGRICULTURIST,

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OF THE

BOARD OF AGRICULTURE, AGRICULTURAL ASSOCIATION, &c.

VOL. VI. TORONTO, JANUARY, 1854. No. 1.

Reports, Discussions, &c.

EAST ZORRA FARMERS' CLUB.

REPORT OF THE FIRST MEETING OF THE EAST ZORRA FARMERS' CLUB, HELD AT LAPPIN'S HOTEL, 12TH LINE, DECEMBER 8TH.

Present—Messrs. Joseph Turner, *Chairman*, Joseph Swaites, Isaac Cook, J. Smith, A. H. Farmer, *Secretary*. *Committee*—Messrs. John B. Wilkison, Griffiths, Dale, G. Smith, H. Shadwicke, Trapett, H. Stewart, Fox, Robinson, Kennedy, and about twenty others.

After some excellent prefatory remarks the chairman pointed out the difference between good and bad farming, and the management of some men, as contrasted with that of others, careless and slovenly. He enumerated the advantages of shelter for cattle, and the strong necessity for providing sheds for them, even if they were only log sheds. How often, said he, do we see cattle starving out in the fields, utterly destitute of shelter, and the very hogs cringing round the door of the house, as if searching for the warmth and shelter so cruelly denied them; any wight might provide something, but somehow or other we always say, "oh, I must get something ready next summer," and so it goes on from year to year. I recollect a story of a farmer's son who was sent to the mill in cold weather, and being observed by a passer by, bitterly crying from the cold, was advised to walk; no, said he, my father always rides, and I will ride, if I should die for it. We are all strongly attached to early associations, and as our fathers did, so we like to do, and unfortunately are too fond of extending our prejudices to our farming. All, however, can afford to house and shelter in some way or other, and it is our duty to do so, for animals were given for us to use, not to abuse. In the beginning of winter many men waste their fodder, and hay and straw stacks are exposed to the weather, with their tops taken off for feeding, allowing rain and snow to penetrate to their very heart, and all for the saving of a dollar for a hay knife, which would cut snugly and well, leaving the top undisturbed. And then we ought to take care of our implements, a thing generally overlooked, a little arranging and putting away, a little cleaning and painting, and they will be ready for another summer's use; even the harness should not be overlooked, but looked over and oiled at intervals, for "a stitch in time saves nine," and never more so than in such cases. I shall now conclude my remarks, but I trust all who are here will aid in the discussion.

A. HAMILTON FARMER, Esq., *Secretary*, then read the following Paper on the Housing and Feeding of Stock:

Having been requested to open the proceedings of this meeting with a paper on the Housing and Feeding of Stock, I agreed to do so to the best of my ability, though I naturally feel great reluctance in placing my views on the subject before so many men, well qualified from length of existence and practical skill, to undertake the

duty. Some one, however, has to break the ice, and I will do my best to do the subject justice, availing myself freely of the experience and discoveries of others where it may seem necessary.

The subject is one of paramount importance to the farmer, and this season of the year is, of all others, the most appropriate for its introduction: the commencement of winter being the time when advice given and remarks made would be of most benefit.

First in order of discussion stands the housing of animals. We all know, or at least ought to know, the great advantage there is in properly housing stock, but perhaps the true reason for h enecessity of so doing is not known to every one; it is this:—The air we breathe is composed of two gases, oxygen and nitrogen, in the proportion of 20 per cent of the former, and 79 per cent of the latter, in bulk. When inhaled, the oxygen enters into combination with the carbon with the blood, and is given off in the form of carbonic acid gas,—a portion of it also combines with hydrogen gas in the system, and is given off in the vaper of water. Now, as the carbon and hydrogen are supplied by the food, it is obvious that increased respiration requires an increase of food to supply the waste, which is the reason a fatting animal should not be allowed to take exercise. The combination of oxygen and carbon is attended by the production of heat, and it is this that produces the heat of the animal frame. Cold weather therefore acts in two ways; it first of all, on account of the increased quantity of respiration, creates a demand for an increased quantity of food, which is consumed and burnt up in the animal furnace, as it were; and it also more rapidly abstracts the heat caused thereby from the frame, calling again in another way for a greater increase of food, to supply the heat. It follows therefore, as a matter of course, that the less waste of food there is produced by increased respiration and cold, the more will be enabled to remain, and add to, the system. Upon this great yet simple fact, rests the necessity, the imperious necessity, of providing suitable accommodation for cattle in winter, with the view of economising food, some instances of the efficacy of which I may perhaps allow myself frequently to quote. As regards the humanity of providing shelter for cattle, and the difference in the feelings produced by the sight of stock under cover, when contrasted with those in the open air, in a snow storm, I do not fear any opponent. We have therefore to consider at present the most economical and perfect way of sheltering cattle from the effects of the weather, so as to ensure their maintaining a healthy and growing condition on the smallest possible portion of food. It is, in the present state of the pocket of farmers in general, difficult to provide shelter perfectly enclosed from the effects of wind and weather for each animal, yet I would submit that the nearer our barnyards approach to this state, the more flourishing and healthy will be our stock, and that the wretched condition of much of our Canadian cattle is owing to the system of starvation and exposure being so ruthlessly pursued as it is in many places. The first thing that suggests itself is a log shed, which is most easily obtained. A little labor in the woods cutting logs, a few neighbors to assist in rolling them up six or seven feet high, a few rails and a little pea or other straw for thatch and to chink the logs with, and you have at all events some shelter for your cattle. Six men with a yoke or two of cattle would build such a shed in a day, and the labor would be most amply repaid. But I hope we would possess more ambition than to be content entirely with such edifices, useful as they may be as temporary substitutes for better things, so we will turn our attention to the more regular and artistical style of building, viz: Frame, for bricks are unfortunately as yet unattainable, however desirable they may be. How often do we see barns standing by themselves, or at least with a shed or two just projecting from one end, as if it were necessary to have it as far from the barn as possible; is it not much better to use the barn as one of the sides of the shed, the double thickness of the walls thus assisting in a great measure in preventing draughts of wind from rushing through the shed, for frame sheds are but draughty places of rest for cattle, unless the joints are carefully battened. A shed built against one side of the barn and divided into three partitions, in the centre one of which would open the large doors of the barn, would hold a great deal of stock. On one side might stand the cows (for cows ought always to be kept separate from the rest of the stock), on the other the oxen and grown up male animals, in the centre young ones. Sheep and hogs should have a separate place provided for them, as their offensive smell might be injurious to cows in calf. Another style of building I would recommend would be a double-storied barn, which would be particularly applicable when a slope of the ground existed, which would serve as gangway to the upper part; but even without it, the principle might be applied. I would proceed after this fashion: having chosen a place at the foot of a declivity, I would proceed to clear out a place for the foundations of the barn, in such a way that when the foundations are built, (it would not do to have them less than 8 feet high, they would be better 9 feet,) the top of them would be in one place on a level with the ground. The foundations should be built of stone, well put together, and should form three sides of the square, the south side being left open; upon which foundations I would place my barns; the frame of which would of course differ in size, &c., according to what was required of it. The floor would be well laid with two inch plank, so as to prevent anything from faling through upon the cattle below, which would of course be fed from above through openings made for that purpose. The lower part would be appropriated to cattle, of course, and very warm they would be with solid stone on three sides of them; indeed, the fourth might be made to close up when required, when they would be comfortable indeed. A corner could be built up as a root-house, to be filled from above, but with a door in the side, for convenience in taking the roots out. The upper floor would be approached from the sloping bank, and be used as barns generally are, viz.:—hay-barn,

granary, thrashing floor, implement room, &c. The advantage of this plan would be that under the same roof you would get double room, merely at the cost of the foundation; which, although it would be an expensive thing, would at the same time make the barn indestructible by rot or old age, which two evils seem to destroy all barns most rapidly. The same plan might be carried out with the pigs and sheep; a double storied house would contain the pigs below and the sheep above; the upper part might be approached by a sloping gangway, which sheep would readily learn to ascend. There would be a necessity however, in that case, for a very carefully laid floor, to prevent the drippings of the sheep falling on the hogs beneath. While writing this I was informed such buildings are in use among the Germans in the North, which is to my mind a great recommendation of their utility.

Of the style of building in the Old Country I need say but little, for, however desirable, it is not likely to be carried into effect as yet on a large scale. Hay barn, straw barn, threshing barn, all separate, with the accompanying steam engine, long rows of stables for tying up cattle, sheep sheds, cowhouses, pigstyes, &c., all of the most approved and substantial quality, are far beyond our reach, though, as the utility of them has been proved there, we may be sure the nearer we approach to them the better it will be for us. One great argument for keeping all stock under cover is the superior quality of the manure made in that way. That made in open yards, exposed to all the vicisitudes of the weather, now burnt with the sun, now drenched with rain, and now covered inches deep with snow, is washed out till it no more resembles the real stuff than some of the whiskey bought at small retail dealers resembles the pure spirit, and much of this must be applied to the land before any benefit can be derived from it. On the other hand, how superior in strength and quality is the manure made under cover, without a drop of extraneous wet touching it. In that case the straw is able to hold the liquid manure made, it not being saturated with rain and snow, and retains its full strength till required for the land. In this country there seems no danger of the manure becoming what is termed "fire fanged," a result which occurs in the Old Country when it is kept too dry, and allowed to heat. The cold here seems to prevent its rising to a temperature sufficient to burn it, and consequently dastroy its valuable qualities.

We will pause for a moment to see if we can ascertain the exact amount (as nearly as possible) of the manure wasted by its being made in the open air. If the straw be loaded with rain or snow, of course it is unable to absorb the liquid manure made by the animals, which runs off either at the time, or on the next shower of rain, bearing with it part of the strength of the solid manure as well; that, however, we will not take into consideration, but merely turn our attention to the amount of fertilizing properties running out of the dungheap from the liquid manure. The cow is supposed to void in the course of the year 13,000lbs. of urine, containing 900lbs. of solid substance, which is more fertilizing than even the farfamed guano, as it contains about 25 per cent. of ammonia, whilst guano contains only from 13 to 15 per cent. Now, supposing she spends four months in the yard, the amount that ought to be collected would be 300lbs., all of which is lost in open yards, as it dribbles out to the lower side of the barn, where the trampling of cattle and its too great strength prevents all grass from growing. Suppose, then, a man keeps four cows, two oxen, and half-a-dozen other animals of the kind, by no means a large stock, he wastes 3,600lbs.—32 cwt.—of the most valuable manure. Now, upon a careful collection and average of all experiments I can discover, 1 cwt. of guano will produce about three tons of turnips, nearly two tons of potatoes, about one ton of hay, eight or nine bushels of oats. On other crops I cannot discover a set of experiments to deduce an average from, but, as a general rule, I think one may may state 3 cwt. of guano upon land otherwise well treated to be equal to 20 loads of farmyard dung, therefore the 32 cwt. of dried urine wasted are equal to 200 loads of dung, worth at least £10, not to mention the difference between hauling out one load of 32 cwt, and 200 loads of dung, which I anticipate would take a fortnight at least, and thereby add some £6 more to the chapter of expenses. Now, a shed to shelter that number of stock can be built for about £20, so that in two years or less the expense of erecting the shed would have been defrayed, and the shed itself would stand ready for a continuation of the system.

We will now, having comfortably (in imagination at least) housed our stock, and seen them protected from snow and rain, proceed to feed them in such a way as to derive the greatest possible benefit from the smallest quantity of food. This is a portion of the subject which most forcibly reminds me of my inability to do justice to it, but I will proceed to handle it, supported by the best authority I can produce. Our working cattle will, of course, be fed upon oat straw, with a handful of oats when they are at hard work, for though oat straw is a most valuable article of food, it requires some assistance to keep up the strength when much called upon; a few roots also, when they can be obtained, are of great service to them, as any one will see who takes the trouble to give them; but roots for working cattle in any quantity are hard to obtain as yet. We may, however, be fearless as to their well-doing if properly supplied with oats, and perhaps a little coarse hay, when at work.

The cows, when a good stock is required, demand the most of our attention and care, particularly as the time for calving approaches, when they have to be carefully fed beforehand, for fear of their getting too fat, and so endangering their lives whilst calving, and well fed afterwards, so as to produce the greatest attainable quantity of milk. It may seem absurd to be careful about over-feeding cows before calving, and with many I have seen I should think it impossible, but all who have bred good cattle will feel that I have said nothing but what is very necessary. Cows can be fed to great advantage upon hay and straw cut up in a chaff-cutter, and mixed together, as-

sisted by a good meal of roots in the course of the day, and a few oats might be added by those who wish to keep them very high. Cut hay and straw mixed have been found to answer as well as hay by itself, and the saving is of course the difference between the price of hay and straw, on one half of the feed. The chaff-cutter should be on a good principle, so that the money saved in the hay be not lost in cutting the chaff, for that would be but a bad way of improving oneself; it would be much better were it fixed to a horse-power, in which case a few hours with one horse would cut enough to last a moderate quantity of cattle for a week. Indeed, all hay and straw should be cut up before being fed to any animal, as well as straw cut into four or six inch lengths for litter, so that green *manure would plough in easily*. But as labor is dear, and food cheap in comparison, it would not do to run hastily into the expense of machinery, when the cost of the food saved might not perhaps counterbalance the expense. It is certain, however, that a horse-power for one or two horses would be of great service on a farm, for not only would it be of use in cutting chaff, but it might turn a small threshing machine, and perhaps a circular saw and many other articles that are of use to a farmer. I intend myself to use my horse-power, (a two horse, fitted for three,) for many purposes besides driving the threshing machine it properly belongs to. It has also been shown that hot salt-water sprinkled over cut straw alone makes it much more palatable to stock, and if to each bucketful of water about half a pound of linseed meal be added the food will be greatly improved at a very slight additional expense, as linseed meal can be purchased at about $5½ a hundred, the object being to make the animal consume enough straw to keep it thriving; it being nutritious to a certain extent, and also assisting to fill the stomach out, which is absolutely necessary for ruminants, a large quantity of poor food being more useful to them than the same in a more concentrated form. I need hardly quote a higher class of mixture for cattle, but one seems so simple in all cases where farmers feel inclined to buy a little to increase the quantity of manure, and consequent fertility of the land, that I cannot help mentioning it.

"Into a copper pour six pails of water, and let it boil, sprinkle into it one pail of linseed meal,—another person meanwhile stirring it. In five minutes the mucilage being formed,—a tub is placed near the copper,—throw into the tub a basket of turnip tops, besides chaff or cut straw, upon which pour three or four quarts of mucilage, stir with a manure fork; other turnip tops, &c., are then added, and mucilage, and well incorporated. It is then pressed down as firmly as possible, and covered with a thick cloth or cover. In three hours the straw will have absorbed the mucilage, and the turnip tops been partially cooked, it is then ready for use."

Such a mixture will keep good for many hours, and of course can be made in quantities to suit. The tops also of turnips, carrots, mangel wurzel, &c., in many countries are put by in brick pits, with a good allowance of salt, for winter and spring feed; they ferment and form a pasty mass, which is devoured with great avidity by cattle. As regards the roots themselves, it has been shown that for fattening beasts, 80lbs. of turnips, cut up and fed with a good allowance of straw, is as good as 200lbs. given otherwise, and in fact beyond a certain amount the principal office they perform seems to be to slake the thirst, which, seeing all roots contain from 80 to 90 per cent. of water, they are eminently calculated to do. Great advantages would be reaped also if the plan of tying up cattle when feeding were pursued, for then every beast would have his own share of food and no more, and the master animals would be confined to one spot, and instead of chasing the weaker ones round the yard in their jealous anxiety to get all the food themselves, and thus *not only preventing others from feeding* but feeding themselves at a great disadvantage, they would be able to take each his own food comfortably and quietly without interference from any other animal. This plan would be of advantrge with the cows in particular, being now all in calf they are less able to bear the driving about, and the weaker ones, which want the more peace and food to help them to bring a good calf, would thus get it. I find a common trace chain, with a long hook put on the link end by the blacksmith, to hook round the neck, and a staple driven into the post or beam to hook the smaller hook into, so that it may be removed, or drawn up shorter, at will;—a most efficient article, at the cost of some 1s. 3d. or 1s. 6d.

When attempts are made to feed cattle, regularity is one of the cardinal virtues; for it is notorious that a little given carefully at stated times, is much better than a great deal given irregularly and wastefully. As a proof of the superiority of tying up cattle when feeding them, it has been shown that oxen fed loose in a yard, eat or spoil enough to keep twelve oxen when tied up.

As regards feeding sheep, it is with us a very simple operation. Pea straw seems quite as agreeable to them as hay, and they get their regular allowance either of one or the other three times a day, with roots in the spring, especially for the purpose of increasing the flow of milk in the ewes. It would be better for them too, were their food cut up and fed to them in troughs, for they are clean feeding animals, and never like to eat what has been trampled under foot, and as they pull their hay about and snatch it one from the other, much of it must be wasted. For fattening sheep in the winter, a pint of oats or grain of some kind is requisite, per day, and half a pound of oil-cake would be of advantage also, particularly in enriching the manure. Keeping them close and warm would also assist, as I will now proceed to show.

A Mr. Childers selected two lots of Leicester yearling wethers, of 20 in each; one was placed under shelter in a yard, the other folded in the field. They all received the same food, viz: 12 lbs. cut turnips, as many as they could eat, half a pound of linseed cake, half a pint of barley, a little hay, and salt per day, for each sheep. At first they each ate about 19 lbs. of turnips a day, but after three weeks, those in the shed eat 2 lbs. a piece less, and in the 9th week, 2 lbs. a

piece less again, and of the linseed cake there was a falling off also, of nearly one-third of the amount given, viz: 13, 3 lbs. a day from the lot. Those in the field consumed the same quantity from first to last. The respective weights of the two lots were as follows:—

	In the shed.		In the field.	
	stones.	lbs.	sts.	lbs.
Jan. 1st.	183	3	184	4
April 1st.	239	9	220	12
Gain	56	6	36	8

The gain of the shed fed sheep over the field fed, was 19 stones 12 lbs., consequently the sheep in the shed, though they consumed nearly one-fifth less food, made above one-third more progress.

In another experiment of three lots; one entirely covered in, one under a shed in the yard, and one entirely exposed, all of them having a pint of oats a day a piece; the first consumed on an average between Nov. 18 of one year, and March 9th of the following, 8 lbs. of cut turnips and other roots per day, and increased in live weight 23½ lbs. per sheep; the second consumed 11 lbs. of the same food, and increased in weight 25 lbs.; the third consumed 17 lbs. of cut turnips per day, each, and increased 23 lbs. live weight in that time. The several lots, it thus appears, did not differ so much in their growth as in the case reported by Mr. Childers, but there was a much greater difference in the quantity of food eaten by them. These experiments would tend to an assumption that twice as many sheep can be kept upon the food, under perfect shelter, than when entirely exposed. It is also a favorite plan to feed sheep each tied up in his own little stall (but this of course can be applied only to fatting sheep) with grated floor for the dung to fall through into a receptacle beneath, when 16 or 18 lbs. of cut Swedes, one pint of oats, and half a pound of barley straw cut into chaff and salted, per day, has been known to make upon good sheep, upwards of 3 lbs. live weight a week.—The foregoing experiments, to which, I have no doubt it were easy to add many others, are a strong proof of the necessity for procuring shelter for sheep, to that extent at least that they can live dry.

As to the keep of young horses or horses of any kind when not worked, we have but to provide them a good shed, with plenty of room, both inside and out, for exercise, as it is bad to cramp them. They can be kept well on hay alone, without any additional food. I myself once kept a pair of brood mares a whole winter upon hay and straw, in equal proportions, cut into chaff, and so well did they look, that when I next have horses loose in the winter, I intend to feed them in the same way. The subject does not include the keeping of working horses, so I shall leave that, and do so the more willingly for fear of protracting my paper to too great a length.

I need scarcely mention the subject of pigs, for they nestle any where in the straw, and pick up the leavings of other beasts, with very little help. It is, however, a subject of debate, as to whether pigs would not do better when fattened from their births, and killed at from nine to ten months old, than when allowed to run. So advocates of the system say with much apparent reason, that they do not consume so much food in proportion, when treated in this way, than when allowed to run for a year or so, before being fattened, and though they naturally do not come to such great weights, the money is turned over quicker. I have pursued the plan myself with spring pigs, and find it certainly produces the best and juiciest of bacon. Before I leave the subject however, I will let you into a secret for fattening pigs, namely, feed them on bacon, a pound or a pound and a half of fat bacon is enough, and it is said, produces wonderful effects. Three pigs fattened in this way rose 15, 14, and 19 lbs. respectively in one week.

It is well known that greaves, which is nothing but the refuse of the tallow chandler's carrion has a great effect in fattening animals, but only fancy feeding pigs on their own kind.

I will now conclude my paper by expressing my great regret that some one was not selected for the duty, more qualified to perform it than I am. When 20 years more have passed over my head, and I have tried some 20 different ways of feeding animals, I shall then be able to pronounce, with much more certainty, on the value of certain articles of food, as it is, I am as yet sorely ignorant on the subject. I might have enlarged in many different ways as it was, but I kept steady to the point, that my paper was for practical farmers in Canada, where certain sorts of food, and certain classes of building, are attainable, and, as yet, no other; when, however, the time comes for more extended operations, and we have a greater choice of materials to work upon, I hope the long continuance of this club will give me many opportunities of expressing my views on the subject.

After the reading of the above address the Chairman called upon Mr. Isaac Cooke.

Mr. Cooke considered the first point in wintering cattle was to attend to the land, and grow enough to feed them well in the winter. He recommended bran and shorts as excellent food for young and growing stock, the use of which would greatly assist in raising their condition. He traded last winter 1¼ ton of hay with a miller for bran and shorts, and he found that his wife got half as much butter again from the use of them, and that of much better quality, his cows kept in much better order and his calves in the spring were worth some $10 a-piece, instead of three or four. Money laid out in the fall in this way, was repaid with interest in the spring, and if farmers would act upon this plan, they would soon have some golden sovereigns jingling in their pockets.

Mr. John Smith did not wish to speak, but could not refuse when called upon. He agreed with Mr. Cooke as to the advantage of farming well, and having therefore plenty of food for stock, which ought to enjoy a good belly feed. Strawcutters he thought were good things, and he had seen them much used, but he thought they made a great deal of labour, when fixed

however to a horse power they would naturally be much better.

Comfortable accommodation was required for all cattle, but more especially for cows and ewes, but providing it certainly demanded a great outlay. He endeavoured to provide it as much as possible, but coming on to a new farm, and being very short handed, had hitherto prevented the entire accomplishment of his plans. The proper care and plenty of food, however, he gave them to the best of his power. He always fed his cows on hay, which some denied to theirs. He had seen some men hauling out hay, with oxen he had himself sold to them, and when sold they were in prime condition, but now very poor and thin, had enquired whether the hay was going to be sold, and on being told yes, had said it was very evident they sold their hay, and fed the cattle upon straw, as the oxen plainly show. Young horses he thought wanted a good roomy shed, with plenty of fresh air, and water, and some oats also would be found to be of great service to them.

Mr. ROBINSON considered raising stock a very interesting question, especially with reference to the gold Mr. Cooke had mentioned. Farmers (he said) should learn the best and most profitable method of feeding stock, they being now of great value, though I remember the time when they were of no value at all. The time has now arrived when the knowledge of the art of feeding is of great value, for he who raises them best makes the most money. Since thrashing machines have been introduced into this country, all men thrash their grain out in the fall, and so sustain a great loss both in thrashing their grain and wasting their fodder, being obliged in consequence to purchase straw or other food in the spring. I myself, the day after threshing spend from half to a whole day in raking down and topping up my strawstack, so as to make it impervious to rain, and therefore it keeps dry and sound till the spring. When I first came on to my land, I built a stable about the first thing, and found the beasts in it lived upon two thirds of what those in the open air consumed. I availed myself also of a cheap way of building a stable, on which I put a small straw stack, our timid animals thus got their share of the food, and the rest they required. Men have many different ways of feeding, some prefer hay, others advocate other things, such as oat straw, pea straw, &c. When men raise a field of turnips, they generally estimate the crop by the market value or say 7½d a bushel, but the best way is to calculate the rent of the land, the value of manure and cost of hauling it out, the value of the rest of the labour bestowed on the crop, and the seed, &c., and then we arrive at a fair valuati ... When I used to live at Peterborough, Mr. Walton, who raised crops of from 100 to 1000 bushels per acre, told me they cost him about 2½d a bushel, and he used them largely to feed his cattle; his thorough bred Durhams were fed on hay and turnips, his grade cattle on straw and turnips, and he considered these roots, viz: turnips, mangel-wurtzel, &c., together with a warm house, the cheapest and best method of of feeding in this country. How often do we see steers 4 or 6 years old no larger than a cow. I killed one of that sort myself a short time ago, which only went 500lbs of beef, they ought to weigh that at 2½; on new farms, turnips are easily raised on the new land, on old ones a piece of old grass broken up, and many other places present equal facilities for raising them, so as to force cattle on and turn the money for them twice in the five years, which would certainly tend towards the jingling of sovereigns spoken of. Has an estimate ever been taken of those cattle who live under straw stacks upon straw, as to how much butter they make in summer and of what quality, and how much they are worth themselves, as compared with those well fed; do they not bring inferior stock, defective in bone and muscle, and bad for work. Those who keep a dairy in this way lose both in butter and in their young stock, besides that he who can only bring them to market in 5 years, runs double risk to him who brings them to market in 2½. To improve stock it is necessary to import better animals than we have in general, and to keep them we must improve our system of feeding and housing; he who gives but straw can never improve his stock, and how painful it is to see cattle after a snow storm in the night, standing with their backs all humped up, and their feet close enough together to stand in a half bushel measure, and the loss must be immense to those who act in this manner. He who keeps his cattle well turns his money over in 2½ years, he who keeps them badly has to wait five; and both begins and ends poor, because he follows a bad system. Where I used to live near Peterborough some men began poor, they had not even money to buy cows or oxen, so they bought two or three calves, these they took care of, and so from small beginning they ended by being wealthy men, and all from the care they took of their stock. Some men are thriftless and careless about animals, and such a man may buy a cow and a yoke of cattle, and go into the woods with them, when you next hear of him his cow perhaps is dead, and one of his oxen not expected to live, and so it goes on, and he ends poorer than he began, and while some begin poor, and gradually get wealthy, some keep always poor.

Mr. FOX would rather be excused, for he came to learn and not to speak, but he cordially agreed with the last speaker in the remarks he had made as to the necessity of taking care of animals.

Mr. DALE congratulated the meeting on being so numerously and respectably attended. His principle was to take notice of everything, and if as he passed along, he saw a good field of wheat he always asked how it was grown, and what manure was put upon it. The first thing he thought men should do was to buy good horses and get good ploughmen, then put up good buildings, and purchase the best stock possible. Strawcutters were very good things, and he liked them very much. Cattle ought to be fed upon hay and turnips, cows especially, and if a man could not do that, he must do the best he can. Good sheep seemed scarce, he thought some people did not try to get them somehow or other; he tries to plough as deep as he can, does his best

to raise good crops, and keeps the best stock he can procure. When he was fourteen years old his father set him to work, as he did the rest of his family, though there was no necessity for his doing so, and being set to the plough early, he was not afraid to compete in stock or in work with any one. He thought men ought to work their land regularly, keeping a regular proportion in fallow, so as to be able to manure it all in turn and not let their manure lie just on the road side. There was a great advantage in changing seed, in Yorkshire he had known men send their waggons 15 miles to get a good change of seed, and he believed they got one-third greater crop by so doing. He cautioned the meeting to attend to their seed peas when they purchased them, for there was a quelworm in peas now, which if not looked to would destroy the crop. He learnt to farm on a field left him by his father, out of the proceeds of which he had to pay something to a brother. The steward of the neighbouring estate persuaded him to sell, on the promise of the next farm there was to let, he did not get that one, nor the next, so he was disgusted and came out here.

Mr. GRIFFITHS has been a farmer for some time he had travelled through the country a good deal, and thought the sheep were worse than they need be, perhaps it arose from their having snow and ice frozen on to them. He had had cattle in open sheds, which were pretty tight, but still some of them had their heels frozen. Agreed with the Secretary on the necessity of feeding regularly. He once fed some cattle on a pint of ground peas and some pea straw, and they came out very well in the spring. Could not bear to see cattle laying out in the winter, and had often lain awake all night when his own were not well sheltered during a storm, thinking over it, and thought cattle had feelings as well as men though their necks were harder.

Mr. STEWART could not add to what he had heard. He had heard some very excellent remarks and had learnt much from the secretary's paper, the principles of which however, he had been following up as far as possible. Every place had a barn, and every man could put up a shed against it. Had winter began six weeks ago, he would have been without a place for calves, steers, mare and two colts, tried to get carpenters to put up sheds, but they asked too much, so he set to work with his man, did his best, and in one day will have built comfortable places for 8 calves, 6 steers, mare and two colts, besides which he had 18 animals stalled. He hoped it would be substantial, but he had built it against another shed, only at the cost of timber and nails, not counting his own work. Last winter he had a shed for 10 cattle, and a part of it divided off for sheep, with a loft overhead for hay, &c. Having begun farming here only a year or two ago, had purchased too much stock, and they came in poor in the fall, and the neighbours said he could not winter them ; two of them being very poor got hay and turnips, the others only oat straw till near a month of their calving, when they had hay and turnips regularly, and they brought excellent calves. He brought one calf early in May with its mother, and two other cows which calved in June; his neighbours advised him to kill the two last for he never could winter them, but he said he would try. One he sent off to be wintered elsewhere, for the other two he parted off a corner in his barn, with a little opening to the outside, and fed them on hay and turnips, and they came out in the spring worth each of them half as much again as the oldest, which was worth in the autumn two dollars more than them, and he had no doubt had sufficiency of hay both to eat and spoil, and they are now being brought up for the yoke. His sheep were put up very poor, but he fed them on pea straw cut green, and they gave him a nice flock of lambs in the spring. The straw came off 8 acres of peas, which brought 240 bushels of peas, and 6 acres of peas and oats, which brought 210 bushels of grain, all of which he cut early and got in well. He thought we ought to buy a small flock of good ewes at from nine to ten dollars a piece, instead of a large quantity of poor ones, and then breed to good stock. He was perfectly convinced of the wisdom of that course, for cattle bred from pure-bred bulls were heavier at one year old than common ones at two. We can all afford to buy a lamb, if we cannot get a full grown ram, and nurse him up to his full size. He himself had paid 2s. 6d. each for ten common ewes to the ram, so as to improve his stock and thinks cost no object in raising good stock.

Mr. KENNEDY feeds upon straw, and has but little accommodation for cattle, to show how he fed them, he has one cow six years old, that had never tasted either a turnip or a handful of meal, and though Mr. Cooke praised the appearance of his stock, he thought it rather unnecessary for him to speak. The plan he pursued was this: after mowing he kept one field from being pastured, till about this time, and finds 8 or 10 acres kept this way worth more than the hay taken off it. This year had a rough field by the road side kept this way, and a friend of his riding by remarked he had lost the grass of it, he supposed he had not, and events proved it, for he turned a broken down yoke of cattle, some twelve or fifteen years old into it, and they refused hay, and fattened in spite of the snow and cold, and he got $92 for what cost him $55. He never used turnips even in hard weather, and this very evening they had all ran off there. Had a pair of steers a year old in April and June, that girthed five and a half feet, one he had not fed having hurt his leg, but the other, with a heifer that ran with him, he kept in this way for very little. When indian grass grows long, the under part does not freeze and the cattle do better on that with a little straw, than when kept alone on hay. Sheep might do very well when kept up, for a man like him however, who is lonehanded a plan like his does very well, and animals thrive well on it.

The CHAIRMAN said all the different remarks had been very good ones, and he thought Mr. Dale was right about the advantage of changing the seed, from his own experience, and he agreed with Mr. Robinson as to his remarks on the difference between good and bad feeding, and the able remarks that had fallen from other gentlemen.

He expressed his great satisfaction at this club having been originated, and hoped the next meeting would prove as numerously attended as this one. Begged for the assistance of all who could come, as it needed support, and was attended with no expense to those who attended, all the trifling expenses connected with it being paid by the Agricultural Society.

The next meeting was then named for Thursday the 5th of January, at Donaldson's Hotel, at 6 o'clock, P.M. Subject for discussion—The cultivation of crops.

A vote of thanks was then passed to the Chairman, who returned thanks, and the meeting separated.

Communications.

A CHALLENGE.

WILMOT, Dec. 15, 1853.

To the Editor of the Agriculturist.

DEAR SIR,—I observe from the report of the Guelph Farmers' Club, that Durham cattle and Leicester sheep, are the most profitable stock for the Canadian farmer; and as I am one of the many who demur to this, I challenge any one of the Club, having the animals, to a trial, as under: Two acres of pasture to be fenced off for each party, half way between Wilmot and Guelph, and I will send two Devon cows and two Down ewes, with their lambs; against two Durham cows and two Leicester ewes, with their lambs; from the 15th of May, to the 15th of October.—The Devon cows to produce the most butter, and the Down sheep the greater increase of weight.—The sheep to be weighed at the commencement and termination of the trial. The produce of the cows to be given to the parties in charge of the stock.

An answer to me direct, or through the *Agriculturist*, shall have immediate attention.

Yours respectfully,
DANIEL TYE.

ON THE MANAGEMENT OF SHEEP.

To the Editor of the Argriculturist:

DEAR SIR,—Having read in the December number of the *Agriculturist*, the report of the discussion by the Guelph Farmers' Club, on "Sheep Husbandry," I observe that some remarks were made as to the best remedy for *ticks* on sheep.

Mr. Parkinson recommends immersion in a dilution of Arsenic, but thinks if sheep were bad with ticks in the beginning of winter, it would, perhaps, be better to let them alone. Mr. Harland mentions a strong decoction of tobacco, and also mercurial ointment, as having been used.

I beg to state that I have used the first remedy mentioned by Mr. Harland, viz.: a decoction of tobacco,—frequently, and with complete success, and that I have found it could be used on any fine day in the beginning or early part of winter, without the slightest bad effect upon the sheep. I should prefer this remedy to the use of arsenic, or any other strong poison, as being a much less dangerous application.

My mode of applying the remedy, is to take 1lb. of common coarse tobacco to—as near as I can recollect—about every 10 or 15 sheep in the flock; chop or break up the tobacco in small pieces, and then boil or simmer it well in about one pail of water for each pound of tobacco, till the latter has imparted all its poisonous, or narcotic qualities, to the liquid; then drain the whole through a sieve or cloth to separate the leaves.—When nearly cool apply it to the sheep in this way: Having secured them in a pen or shed, take any small vessel with a spout, about the size of an ordinary quill, and having an assistant to catch and hold the sheep, one at a time,—part the wool lengthways all along the back, and pour in the liquid, from one end to the other of the seam. Repeat the operation in two or three places along each side of the sheep or lamb—so that the whole skin may receive a slight moistening from the liquid. A small quantity of the liquid will be sufficient if properly applied, and as I said before, I have found the remedy completely successful, and not attended with any ill effects, even in winter, if the operation is performed on a bright fine day.

In reference to Mr. Card's remarks in recommending a cross between the Leicesters and Southdowns, as producing heavier lambs at an early age than pure Leicesters, and his statement that two lambs of the former sort, at four and a half months old, averaged 13 lbs. to the quarter; I beg to state that in the autumn of 1851 I killed several lambs about five months old, averaging 16lbs. to the quarter. I thought them exceedingly good lambs, but did not consider the weight anything very extraordinary. The lambs were not exactly pure bred Leicesters, but were bred by improving upon a good stock of common sheep for a good many years, by the use of good Leicester Rams.

Leaving the above remarks at your service, I am,
Yours truly,
H. T.

Toronto, Dec. 20th, 1853.

CHEESE, &c.

DEAR SIR,—I have pleasure in acknowledging your's of the 3rd inst. I will endeavor to comply with your request, although my experience has been but limited; still the results you are welcome to. In my communication, I desire to be brief, and you may make such remarks, strictures, &c., as you may see fit.

The process of cheese making, as practised by me, is this: The rennet is applied, it being brought to 90° Fahrenheit. As soon as coagulated, it is dipped into a linen strainer of rather a coarse texture, in a cheese basket, to drain during the night; in the morning the milk is strained into a dairy kettle upon an arched stove, and as soon as coagulated,—by the mixture of rennet as before,—the night's curd is added to it; a *brisk* fire is applied to the kettle, raising the mass to the temperature of 100° Fahrenheit, (being careful to stir it well to prevent burning).

The whey now will separate from the curd very freely, it is then dipped quickly into the strainer and basket,—as before,—to drain off the whey. As soon as may be, having a tub of water ready, place the curd in the strainer, *under* the water, crushing the curd to fineness *under* the water, which chills the curd and washes all whey from it; it is then drained or rather the water is wrung from it, when it is ready for salting, giving about one common teacup full to 20 lbs. of curd; it is then put into a hoop (after thorough mixture) in a fine strainer to prevent sticking, and weight is sufficiently applied to express all the water as soon as possible. You cannot hurt cheese by pressing made in this manner; it is then placed in the cheese room and good attention given to it. I always cover my cheese with cloth, pasting it first as you would a wall for paper; afterwards saturating the cloth thoroughly with flour mixed with colouring material.

With regard to my farm, stock, &c., I may say that, my advantage in respect to situation is favorable for grazing and dairying, as also equally for cropping. My farm is well watered, a living stream passing through it of easy access, land rolling, but also having rich flats which are underdrained, producing grain in rotation, with grass. I seed timothy mixed with red and white clover; the soil in these flats is mostly alluvial with a strong subsoil: otherwheres the soil is a rich, clayey loam, with the usual mould of new land. As some parts are but recently reclaimed from the wilderness, it puts forth its virgin strength under almost any sort of management, whether for grass or grain; nevertheless, my soil being good, I endeavor to keep it so by thorough manuring and cultivating: and my crops, at least, are not on the descending scale, and since I have stocked my farm for my dairy, I have found it ascending. I have been particularly favored this season in this respect, both with spring and fall crops. I have 28 cows, grades mostly, crossed with the Devons, (if any), as some are one-quarter, and two or three one-half. I have not consulted the Herd Books in stocking, but I have consulted economy and home-made breeding, by observing commendable qualities in cattle we have, and enhancing these by every means care and attention can give.

They are all stabled at nights from the time the pastures fail, which, here, is about the 15th Nov., until there is good feed in the spring, which is about 10th May, here. I have managed this year so as to have my cows come in from the 10th April to 1st May, which I believe to be the most profitable in cheese making, as I find the richest cheese from grass. I dry the most of the cows in January; I feed through the winter plenty of straw (brining it) at night, and hay in the morning. I generally raise the Swedish turnips to feed daily, in order to keep them in good heart; slop with bran from the calving till the wild plum trees are in full bloom. I have not had any sick cows as yet. The average produce per cow, from the middle of May, is 2 lbs. cheese per day, until the drought became extreme; about the 15th of July they began to fail. The average since has been nearly 1½ lbs. per day, exclusive of the milk which was set to make butter for a family of twelve. I have now (Dec. 9th) made 8,500 lbs. cheese this year, averaging a little over 300 lbs. each cow, besides what milk was consumed for family purposes.

These directions may serve beginners, and may surprise old dairymen. This is but my fourth year at the business. I took only the second prize at our Township Show, as also at the County Show. I suppose by this our County excels in Cheese.

I would take the liberty of suggesting the propriety of the Provincial Association requiring of those that take any premiums in future in grain and dairy produce, to give a description of their management, as likewise other remarks suited to the case. This, at least, would be entertaining and instructive to many; much may also be learned by comparing modes, results, &c., especially as respects these articles of produce.

Your humble, ob't. servant,

S. T. CASEY.

Prof. Geo. Buckland, Toronto.

Thurlow, Dec. 9, 1853.

POINTS IN BREEDING.

To the Editor of the Agriculturist.

Dear Sir,—I perceive by your last number, that you have published Mr. Rotche's "*points of excellence*" adopted by our society. I refused taking any cattle to our State Fair at Saratoga for no other reason than the Society adopting so childish, and erroneous a production, and was surprised that any part of a breeder's herd should be disgraced so much, as to be shown under so low a standard; but, on arriving on the show ground, and conversing with some of the *best judges*, I found they did not intend to act under them. Some of them thought they were a decided *insult* to good judgment, and set them aside altogether. Others had not sufficiently considered the matter to act upon, or refuse them. In answer to a letter I wrote to John Johnstone, Esq., of Geneva, in whose judgment I have always placed the most implicit confidence, he says, "If I am to be a judge it must be what I consider good points; as soon as I read [or, at least, read a part of Mr. Rotche's, as I had not patience to read them all] I considered them too silly even to give them a thought." And such are the views of *every* "*practical breeder*" to whom I have advanced the subject. I will now show a few ridiculous ones. Mr. Rotche says "the shoulder of the Short Horn should be somewhat *upright*, and good width at points, with the blade bone just sufficiently curved to blend its upper portion smoothly with the crop." Did any one ever read such nonsense, and coming from a "*scientific breeder.*" Are these "*bones*" *to be* "*curved*" with some *scientific instrument* at the time the animal is calved, or how is it to be effected. "*Upright shoulders*" are one of the first and greatest evils an animal can inherit, for they are sure to produce a *very lean crop, generally bare bones*, connected with "*projecting shoulder points.*" These are never failing signs of low breeding. A large extended

paunch with coarse boned legs to support it, always accompanies these miserable points, destroys the whole of the animal's symmetry, and "flabby handling" is sure to be the consequence of such a shape; it very seldom varies, for where you see one of them most of the others follow, and I should despise a beast with so low a character. Mr. Rotche says, "the crops are one of the most difficult points to breed right in a Short Horn." How can it be otherwise, when *he who pretends* to be *at the head of breeders*, instructs them to breed upright shoulders; can anything be more absurd?

Quality.—Mr. R. describes this exactly to correspond with the above shapeless points. The idea of "raising the skin with the thumb and finger to show that it should have a soft, flexible, and substantial feel." If any of your readers can make sense of this, and have tried the experiment, I hope they did it with their white kid gloves on, and then report their experience for publication. Again. "When beneath the outspread hand it should move easily with it, and under it, as though resting on a soft, elastic, cellular substance which however, becomes firmer as the animal ripens." I should like to know whether Mr. Rotch *studied this "soft" kind of quality* in his "soft" snug arm chair, by a "nice warm fire" with his foot resting on a soft Brussels carpet; or, whether he had the animals under his own eye and hand, in his own yard, then fed them, and had them butchered to prove it all. If so, I consider them very "soft," flabby handlers, and that such meat, while hanging on the shambles, never sets except when frozen; it is always "soft" until dried up on the spit, or in the oven, and then is very "hard feed."

My idea of quality is very different. The hide should be moderately thick and mellow in the hand, and the flesh under it should be "elastic." This word sums up the whole of quality, it is so in store condition, and until nearly ripe, when it should handle as firm as a mackarel. The best butchers know all this, and invariably select such kind of cattle in Smithfield or large markets. In such the meat is always interlarded or marbled, the fat and lean are put on together, and they keep together until they come upon the table which the breeder should always be proud to see. Such meat appears larger when cooked than raw. The "handling" that Mr. Rotche describes as "*cellular substance*," can be nothing less than crevices in the flesh, which he says fills up as the animal ripens. Now it is plain to any man of common sense that if these crevices are filled up at all, it is with "soft" oily fat, which runs from the lean when warm; in summer weather always appears greasy, and when brought in contact with the fire is drained of nearly all its nutriment. I will leave it to any family man of intelligence, whether he has not experienced the evil of having to carve numerous pieces of beef similar to the above, and many a good cook has been blamed when the breeder is the only cause. I consider the beef of the one worth one third more to the consumer than that of the other. Once more. The "Udder."—Mr. Rotch says this should be pliable and "thin in its texture, reaching well forward, roomy behind, and teats standing wide apart, and of convenient size." Breeders of Short Horns, look at this, and then tell me if a "*fleshy udder*" could be better described, such an one can never *be thin in its texture*, and is a strong indication of a miserable milker. All the above points of Mr. R. accord with each other, but in my opinion constitute a *worthless specimen of breeding*, and if Agricultural Societies elect such men that can countenance such stuff and *adopt* it as a standard, the best breeders will cease to exhibit.

I am, dear Sir,
Yours sincerely,
WM. HENRY SOTHAM.

Piffard, Livingston Co.,
Dec. 6, 1853.

COAL, GYPSUM, &c. IN UPPER CANADA.

To the Editor of the Canadian Agriculturist:

Sheepwalk, Brantford, Dec. 10, 1853.

SIR,—In fulfilling a promise on returning from an examination of the Ohio Coalfields, I have to communicate some further remarks on the probability of finding bituminous coal in Western Canada. It will be unnecessary to say anything on the importance of the subject, as large sections in Western Canada are now entirely destitute of wood for domestic use. I have prepared a paper intended to be read at the Canadian Institute, but a poor state of health had prevented a personal examination of some of the localities desired, and on my arrival in Toronto last summer the session had terminated.

Before stating certain corresponding geological facts to be found in the European and American Coal fields, I am desirous of showing the fallacy of the theory so confidently advanced by some, "that Canada is geologically too low, by many hundred feet, to warrant the expectation of finding coal bearing strata." Now it happens that there is not much difference in the elevation of the Coal fields of Ohio and Michigan, and the section indicated in Western Canada is about the same altitude; but there exists another geological fact which seems to be forgotten or not practically understood. I allude to the prevailing feature, in most of the great mineral masses, of the recurrence of strata in the same or similar strike and dip. This fact is exemplified in the South Wales Coal field, which is again found twice recurring, in many of its chief features, in the Forest of Dean and other parts of Gloucestershire, the strike and dip here are generally about S.E., with some variations as found from my own inspection and recollection in 1837. I cannot now find my notes. The Coal Works near Boulogne, in France, are about S.E. from the preceeding, and have many similar associate features, and here again the workings dip and extend under the overlaying new formations of Chalk and Oolite: again in the south-east will be found the great coal region near Valenciennes; a further illustration may be stated in the Bituminous Shales accompanying the Mindip, Somersetshire, Coal field, which again recur—and have produced spontaneous combustion—in the south-east on the coast of

Dorsetshire, this was inspected by myself and a large party in 1829 or '30. Ignition appears to originate in the decomposition of Iron Pyrites.* In bringing under notice corresponding illustrations in the great North American Coal fields, spread before you the map of North America, and draw a line from the great Coal field near Richmond, in Virginia, to the Coal field in Michigan; this line will be about N. E. and S.W., and may be supposed to be some miles wide; in tracing its course from Virginia it will be found that it passes through, or near, the great Coal regions of Pennsylvania and Ohio, and also passes through, or near, the Townships of Adelaide and Enniskillen, in Western Canada. From both these Townships invitations have been sent to me to examine various Bituminous indications, and in all the developements examined, the strike and dip are generally about S.E., at different angles, but with some variations. The invitations alluded to were chiefly communicated by a Mr. Robert Johnstone, as exhibited on estates belonging to himself and Mr. Whilley in the said Townships; gentlemen who are entire strangers, but I take this opportunity of thanking Mr. Johnstone for his communication, which shall receive the earliest attention my health will admit. I have indeed no doubt of the existence of seams of Bituminous Coal, but the quality and extent can only be ascertained by boring or sinking, or probably both.†

On a question of so much public interest I had expected some co-operation from the Government and had written to the Hon. F. Hincks respectfully to ask if, under the circumstances, assistance may be expected, to aid in the intended examination, but I regret to say that my letter was not honored even with a notice.

As the object of this communication is intended to refer to matters of general interest, I have to offer a few remarks on our Agricultural organization, &c., the theory indeed appears to be very well chalked out, and by way of encouragement I remind our friends that they have an excellent precedent in the records of the late Board in Sackville Street, although we can scarcely expect, until after a few years experience, that we shall approximate to the attainments of Arthur Young and Sir John Sinclair. The farmers anticipate an intellectual treat from the high attainments of the gentleman now at the head of the Department; but for practical purposes an agriculturist would be desirable: it must indeed be kept in mind that if practical efforts are not judiciously made, irrespective of sectional or party feeling, the people will soon become tired of the thing, and desire its abolition.

In connection with the results of railway communication, and the pressing demands now made on our flock masters, not only for our own domestic use, but also for our superior stock to ornament the farms of our neighbors in the United States; every assistance should be given to facilitate the important branch of sheep farming. It is indeed quite a new and delightful feature in Canada, in which an old farmer from Salisbury Plain may be supposed to participate and know something. Our gypsum, especially the cretaceous variety, will in many cases supply the more expensive agency of guano, particularly in acquiring early green food, such as rye, *the very best thing that can be had for ewes*, to raise a flow of milk for lambs in April and May; these facts suggest the desirableness of an increased supply of this valuable mineral.

Apologising for this intrusion on your valuable time and labors, which are duly appreciated,

I remain with great respect
Your obedient humble servant,
HENRY MOYLE.

Editorial, &c.

G. BUCKLAND, ESQ., EDITOR.
H. THOMSON, ESQ., ASSISTANT EDITOR.

HINTS FOR THE MONTH.

As but few field operations can now be attended to, a few practical suggestions, in regard to the winter economy of the farm, will not be out of place. During several months, the scene of a great portion, and a most important portion, of the farmer's labor will be in the barn, and in the stock yards. We cannot too often, or too strongly, urge the necessity of proper attention to the comfort and feeding of live stock during the winter months. Although we trust that most readers of the *Agriculturist* bestow some thought on this branch of farm business, yet we are well aware that through the country at large it is much neglected.

Care in the selection of good animals to breed from, although most important to the production of good stock, will be fruitless without a due supply of the proper quantity and quality of food, and due protection from the weather. The construction of the farm buildings, is a primary consideration, but if the farm is not already provided with a good establishment in this respect, it will, we fear, be too late to remedy the deficiency for this season. All that we can reasonably look for, will be the repairing of minor dilapid-

* Facts in further illustration may be seen by referring to Dr. Buckland on the London and Dorsetshire Basins the numerous recurrences in the great Chalk and Oolite formation have been traced from its N.W. commencement in England, through Europe, and forming large tracts in Ancient Palestine, and again extensively found in the distant S.E. forming the fine sheep walks in Australia, as described by Sir George Arthur.

† The Geological Report of Mr. David D. Owen on the mineralogy of Iowa, Wisconsin, &c., recently published, describes the recurrence of large Bituminous Coal fields in the north-west and west, as far as explored to the lands of the Hudson Bay Company.

tions, or supplying requisites which have as yet been neglected. Under this class of work will come the putting in good order of the fences, gates, &c., of the yard, nailing up loose boards about the sheds, providing good straw and hay racks, troughs to feed roots, chaff, or meal from, salt trough, &c., if these matters have not already been attended to. Be regular in the hours of feeding stock, and of supplying them with water. Irregularity in this respect, although its ill consequences may not be immediately perceptible, exercises a very injurious influence upon the health of the animals. In feeding cattle kept in the straw yard, take care and distribute the fodder well, so that the weaker animals can get their share without being driven about or oppressed by the strong. A few Swedish turnips, carrots, or mangel wurzel to cattle kept on straw, will assist them greatly in getting through the winter in good condition. A supply of salt should also be afforded, either in a trough under cover, where they can have access to it at all times, and then they will never take too much, or they should have a small portion given them at least once a week. Take care that cattle kept in stables, or houses, be kept sufficiently warm, but at the same time pay due regard to ventilation. Pay particular attention to keeping the stables thoroughly cleaned, and give a good supply of litter, as on this much of the comfort, and consequently condition, of the animal depends. Young calves require particular care, and should be kept in warm quarters, at all hours, except in the mildest weather, and should have plenty of dry litter. Feed them good sweet hay, with fresh oat or pea straw, and once a day, a little meal, or occasionally an allowance of roots. Sheep require good shelter from inclement weather,—but not to be kept too warm,—and a dry situation. Feed with the best hay, and fresh pea straw, cut before ripened too much. They are very fond of the latter article. Give also a few roots occasionally in the early part of winter, and let them have salt regularly. This is quite necessary to their health. Rock salt is preferable, in a trough where they can have access to it at all times.

Providing a stock of firewood for future consumption, is a necessary portion of the farmer's work in winter. In the olden times, when the object was to strip the native forest off the face of the country, as rapidly as possible, this was a matter not requiring much consideration. Now, however, when we look at the rapidly advancing prices of fuel, it becomes a very different matter, and farmers, who, by timely care, might derive a supply of fuel from a comparatively small area of land, in perpetuity, may find themselves reduced to purchasing that indispensable article, much sooner than should be the case. Instead of cutting an acre or two off of the corner or side of the wood, every winter, as many still do, who ought to know better, and thus gradually exterminating our native forests *in toto*, let the farmer who has made a sufficient clearing, go through his remaining timber land, and cut up all the fallen timber, sufficiently sound for use, first; and after it, all the dead standing trees, before broaching upon those that are still growing. The present season, before we have too great a depth of snow, is the best to attend to this operation. By adopting this plan, ten or twenty acres of land will be sufficient to supply an ordinary farm establishment with fuel for many years. When the situation in regard to market, and the facilities in regard to obtaining coal, are such that the rent of the land may be worth more than the cost of buying fuel, then of course it is a different matter. But the farmer should recollect one thing, that it is much easier to cut a tree down than to replace it, and use his judgment accordingly. And for our part, we would much rather, from old associations, see a handsome wood on a small portion of the farm, even if as an arithmetical question, the balance were slightly against it, than to see the country entirely deprived of the ornament and shelter, afforded by an occasional piece of wood. Another point we would recommend in regard to fuel is that of keeping it under cover and dry. Well seasoned wood contains ordinarily at least eight or ten per cent. of water; and green wood or that which is permitted to absorb water from exposure, a quantity varying from twenty to fifty per cent. Consequently when such wood is used, a great part of the heat which is ex-

pended in expelling this water in the shape of steam, is lost for the purpose for which it is immediately intended.

We will conclude these few remarks by reminding our readers, especially our young friends, that this is the season, the precious season, in which farm life affords the most time for improving the mind, and which, according as it is taken advantage of, or otherwise, will be followed by good or bad results hereafter. We would advise our young friends therefore, in addition to improving upon such lessons as they may have derived or be deriving from attendance at school, to read during the winter evenings, such useful books as they can obtain, of a sound and instructive class, and especially such as treat of the calling for which they are hereafter designed.—It is unnecessary to repeat that a competent knowledge of every branch of his business, is as necessary to the success in life of the farmer, as to the pursuit of any other profession. While on this topic we may take the liberty of recommending an excellent list of works upon Agricultural and Horticultural subjects, offered by Mr. J. Fleming, of this city. We would remind our friends, the farmers themselves, also, that this is the season to review their past operations, and lay their plans for the next season of active work. And with these remarks we wish all our readers "A Happy New Year."

PREMIUMS FOR COUNTY REPORTS.

The Board of Agriculture will award a premium of the value of £15, for the best report on the agriculture of each of the following Counties, viz: *Carleton*, *Welland*, and *Prince Edward*. If such report be written by the Secretary of the County Society, the premium will be increased to £20, with a view to call out and encourage that important and laborious class of officers.

The Reports must be sent in to the Secretary of the Board of Agriculture, Toronto, accompanied by a sealed note containing the name and address of the writer, on or before 1st June, 1854.

No premium will be awarded to a report although it may be the best sent in, unless it possess sufficient merit.

TO THE OFFICERS OF AGRICULTURAL SOCIETIES.

We again beg to remind the office-bearers and members of Agricultural Societies generally of some of the more important requirements of the Statute under which they are organized. By 16 Vic. Cap. 11, all *Township* Societies are required to hold their annual meetings during the month of *January*, to submit at such meetings a full report of their proceedings and to elect officers, &c., for the ensuing year. Township reports are to be sent in to the Secretary of the *County* Society, previous to the annual meeting thereof, which according to the Statute should take place some time in *February*.—County reports should be full and explicit, both as regards income and expenditure, and the present state of agriculture, with suggestions for further improvement. The Secretary of each County Society is required to send his own report and those of the Townships entrusted to his care to the Board of Agriculture in Toronto, *on or before the 1st day of April*, 1854.

Those whose duty it is to prepare Reports, are particularly requested to write them out in a plain hand, especially the names of persons, places, figures, &c., and to append to each report a clearly drawn out Balance sheet, comprising on one side the principal items of income, and on the other those of expenditure, signed by the auditors and principal officers. All societies are requested to insert in their reports a complete list of the names and residences of their respective officers for the ensuing year, 1854.

Each *County Society* will have to nominate at its annual meeting in February, four fit and proper persons as members of the Board of Agriculture, to supply the places of those who vacate their seats, according to the terms of the Statute, 16 Vic., Cap. 11, Sec. 12. The following gentlemen will retire, unless they are re-elected: E. W. Thomson, Esq., President, York; R. L. Denison, Esq., Treasurer, Toronto; Sheriff Ruttan, Cobourg; and John Harland, Esq., Guelph. A certified copy of the names and address of the persons nominated, must be sent *to the Bureau of Agriculture, Quebec*, immediately after the annual meeting,

and the four persons nominated by the greatest number of Societies will be thereby constituted members of the Board.

It may be convenient to some to append to this notice a list of the members constituting the present Board; and we would strongly recommend the careful perusal of the Agricultural Statute, to all officers of Societies, and indeed to all such as feel an interest in aiding the great work of agricultural improvement and national prosperity:—

BOARD OF AGRICULTURE,

JANUARY, 1854.

E. W. Thomson, Esq., *President*, York.
R. L. Denison, Esq., *Treasurer*, Toronto.
Professor Buckland, *Secretary*, Toronto.
Hon. John Rolph, *Minister of Agriculture*, Quebec.
C. P. Treadwell, Esq., *President of Provincial Agricultural Association*, L'Orignal.
Hon. Adam Fergusson, Woodhill.
David Christie, Esq., M.P.P., Brantford.
Sheriff Ruttan, Cobourg.
J. B. Marks, Esq, Kingston.
John Harland, Esq., Guelph.

SHORT HORNS.

ARE SHORT HORNS CONSTITUTIONALLY DELICATE?

The Hon. A. Fergusson has sent us a notic of his cow *Victoria*, (see Am. herd book) who, it seems, has gone the way of all flesh. From this statement we feel confirmed in our opinion, that under merely ordinary care, short horns will thrive, in Canada West, quite as well as natives, or any other breed. *Victoria* was sixteen years old, and in prime health and vigor.—For two years past, Mr. F. has indulged a hope of obtaining at least one other calf, from this valued cow. This hope, however, was not to be realized, and she was ordered to be slaughtered. Taken directly, on the 7th of December from a rough indifferent pasture, and killed within twenty-four hours thereafter, she proved as under:—

The four quarters.....994 lbs.
Tallow..... 62 "
Hide..... 83 "

The beef was *marbled* and of excellent quality.

Victoria has had nine calves, viz., six bulls and three heifers.

Her last calf (*Kossuth*) carried the 1st prize, of his class, at the late Provincial Show, in Hamilton.

We have reason to know that Mr. F. is in correspondence with certain breeders in the United States, regarding the sale of this fine animal; but indulge a hope that his services may yet be retained within our own Province.

CHEESE MAKING.

We insert with much pleasure a communication from Mr. Casey, of Thurlow, describing his mode of manufacturing the cheese for which he obtained the first prize from the Provincial Agricultural Association, and also the prize offered by the President, for cheese (not stilton cheese) not less than 30 lbs. weight, at the late Exhibition at Hamilton.

Mr. Casey's description would be a little more complete, if he had given his mode of preparing the rennet, and the quantity used. His statement of the quantity of salt used,—a teacup full to 20 lbs. curd,—is a little indefinite. The *taste* is probably the general guide to the experienced dairy-woman in this particular, but a statement of the precise *weight*, and quality, used by successful cheese makers, would no doubt be valauble to many farmers. Mr. Casey's plan of covering each cheese with cloth as soon as out of the press is no doubt an excellent one.—The trifling expense incurred would be more than counterbalanced by the protection thus afforded from flies, by the prevention of loss from that source, and by the saving of labor. The covering might also assist in the proper ripening and mellowing of the cheese. Mr. Casey's remarks as to his management of his stock and farm, are interesting, and his concluding hints as to persons receiving premiums for grain or dairy products, giving a description for publication of their cultivation, or management, are deserving of being generally acted upon.

PUBLIC COMPETITION OF REAPING MACHINES IN SCOTLAND.

We condense from a Scotch paper, (for which we are indebted to Mr. Brown of Cobourg) the following account of the trial of Reapers which took place near Stirling, in September last. An immense concourse of spectators attended, including a number of persons of rank,

and deputies from each of the three National Agricultural Societies of the United Kingdom, and several distinguished agriculturists from the Continent of Europe. The Rev. Patrick Bell, the original inventor of the Reaping Machine was present, as was also Mr. Charles M'Cormick, the American patentee. Our readers will perceive that the result of this trial, as well as some others that were made both previously and subsequently in land and Ireland, places the improved Scottish Reaper in the first rank, M'Cormick's stood number two. Forty-one machines were entered for competition, but from some unexplained cause, only seven appeared for trial.

Lots being drawn, the machines were numbered as follows:

No. 1. Mr. Cochrane's Bell's improved.

No. 2. Mr. Hope's (Stirlingshire) Bell's improved.

No. 3. Mr. M'Cormick's, managed by Mr. M'Kenzie.

No. 4. Mr. M'Laren's Dray's Hussey.

No. 5. Mr. Robertson's (Bowhouse) Bell's Crosskill.

No. 6. Mr. Hussey's own; one horse.

No. 7. Mr. Bell's own Crosskill, managed by Mr. Love.

The first trial came off on a field of oats—the ground a deep alluvial carse soil, and quite level, the crop rather light—slightly laid to the south-west, but otherwise well adapted for machine reaping.

Owing to a defect in the revolving web of No. 1, Mr. Cochrane's Bell's, the machine would not deliver the grain, and, after some ineffectual attempts at cutting, the machine was withdrawn.

No. 2, Mr. Hope's Bell's, made fair work, but appeared to distress the horses, which required to go at a quicker pace than their natural speed. It appeared, however, to please many of the onlookers.

No. 3, M'Cormick's machine, cut the crop in the most perfect manner, the stubble even and regular. Owing to the restiveness of the horses starting, the pole was broken the first round, and required to be replaced. After the changing horses, the machine went on, cutting to the entire satisfaction of those present, the only objection being to the unthrifty way in which the corn was sheaved from the machine.

No. 4, Mr. M'Laren's Dray Hussey, made very indifferent work. To improve the appearance, the stubble in one or two instances was passed twice over.

No. 5, Mr. Robertson's Bell's Crosskill, appeared to advantage, making excellent work, but did not finish so soon as Mr. Hope's.

No. 6, Mr. Hussey's one-horse machine, for a time appeared to astonish many onlookers, but the horse, though a very powerful one, speedily became distressed, stopping frequently. This machine did fair work when cutting to the lie of the corn, but rough work when cutting *with* the lie of the corn. It requires two horses to work it with anything like ease to the animals.

No. 7, Mr. Bell's Croskill, only entered the field two minutes before the time of starting, greatly to the annoyance of the public. At the first public favor was divided betwixt M'Cormick's and this machine. The latter cut and laid in swaithe the oats in the most perfect manner and otherwise made excellent work.

The next trial took place on the same field, each machine making one cut down and up the side of one of the proportions previously prepared. Bell's and M'Cormick's did the work to the satisfaction of most practical men—Hussey's less so.

The third trial took place on a field of wheat, crop mostly standing—apparently after plain fallow winter sown. The work here was with the same results as in the oats, Bell's and M'Cormick's being the decided favourites.

The fourth trial took place in a field of barley, smooth bottom—the crop much laid, but otherwise well adapted for the machines. The work here was more perfect with all the implements on Bell's principle than could have been looked for, and appeared to excite more surprise than the performances in the oats and wheat. M'Cormick's, however, performed indifferently, causing considerable loss by shedding. Hussey's also did indifferently.

The fifth trial was a field of beans and peas, very strong and green, and consequently a very severe test for the machines. Here No. 7, Mr. Bell's Crosskill, made a cut up the field with only one stop, a quantity of pease having retarded the delivery. In coming down, no stoppage took place. No. 5 followed, but made several stops in going up, and did not return. No. 2 next followed, but from being too low set, stopped; and after being readjusted, went up once, not returning. With No. 2 the horses were pushed beyond their proper pace, and soon overtook M'Cormick's. No. 6 followed, cutting a narrow space indifferently. The machines were again ordered back to the barley field, partly to show their working to the public, and also partly to show their cutting powers across the ridges; after which two of the machines were again ordered to be in the field, these being Robertson's and Hope's, the Judges not having made up their minds as to one point.

The arrangements were upon the whole satisfactory, although several complaints were made as to unnecessary delays. The secretary, Mr. Hutton, was assisted in his duties by Mr. Hall Maxwell, the secretary of the Highland Society. The public conducted themselves with the greatest possible propriety, and little or no damage was done to the crops. Of the many practical men present, and the number was very great, one opinion alone appeared to exist—that the machines cut the crops in a style equal, if not superior, to ordinary hand shearing.

The Judges were Mr. John Wilson, Edington Mains; Mr. George Hope, Fenton Barns; Mr. James Stirling, C.E., Edinbugh; Mr. Young jun., Burntisland; Mr. John Lockhart, factor, Dun-

more; Mr. Peter M'Ewen, Blackdub; Mr. William Henderson, farmer, Craigarnhill; and Mr. Alexander Young, factor, Keir. After full consideration, they made the following award:—"The subscribers having dispassionately examined the several reaping machines this day exhibited, are of opinion that the first prize should be awarded to Bell's No. 7, and the second prize to Mr. M'Cormick's." The first prize is fifty sovereigns, and the second fifteen sovereigns.

TURNIP SEED.

To the Editor of the Canadian Agriculturist:

Dear Sir,—I have taken the liberty of forwarding some plants of the spurious turnip, which I mentioned to you last week. I should like to see your remarks thereon, in some early number of the Journal. I obtained the seed from a most intelligent and honorable seedsman in Scotland, whom I entirely acquit of wilful intention to deceive. It has, however, occasioned a serious disappointment to me, and is a matter well deserving a full investigation. When I returned from Toronto, I found my men engaged in taking up some mangel wurtzel, which grew adjoining to the turnips, and the seed of which I also obtained from the seedsman above mentioned. The soil was of like quality, and the manure applied was equal in quantity and quality. The soil was a black peaty loam, the manure, rich, well-rotted stable dung, chiefly horse dung. The mangel wurtzel was a very fair crop, considering the season, and consisted of three varieties, common red, yellow globe, and white. I recollect you hazarded a conjecture, that the climate, manure, or management, might have caused the failure, but you will see from a few Swedish turnip bulbs, which I have likewise sent, that such a theory fails, as these bulbs were found growing among the mangel wurtzel (about half a dozen or so in the field), and must have sprung from a few seeds, *accidentally* mixed with the seed of the mangel wurtzel. If my turnip crop had proved at all equal to the few turnips sent, it would have been indeed a blessing to my young stock.

Ever yours truly,

Adam Fergusson.

Woodhill, Nov., 1853.

REMARKS.

The specimens sent us are a sorry apology indeed for a crop of turnips! The failure is a total one, and is not occasioned by disease, such as the "Ambury," or what is in some parts of England denominated "fingers and toes," but is evidently caused by impure seed. The roots and stem much resemble the same parts in the ordinary cabbage, and show no trace of bulb whatever, although the leaves appeared genuine and luxuriant. Seedsmen who are generally accustomed to exercise much discrimination and caution in the conducting of their business, will be sometimes deceived themselves, which we have no doubt whatever was the case in the present instance. We fear, however, that among not a few dealers in seeds, a very culpable negligence and low moral principle prevails; and in all practicable cases no seeds should be sold, particularly when they have to be sent thousands of miles, without subjecting their vitality and purity to a satisfactory test. Knowing as we do the laudable desire which Mr. Fergusson feels to promote the improvement of stock in this Province, and the great pains and expense he has incurred for several years past in procuring first-rate animals, we can understand the annoyance and loss which he must experience by the total failure of his turnip crop.

We may appropriately observe here, that we sowed last fall some half dozen varieties of wheat, imported from a respectable Seedsman in London, one of them vegetated but indifferently, while another (Golden Drop) scarcely came up at all, and we have good reason for believing, that much of the seed had sprouted in harvesting (the harvest in England of 1852 suffered much from wet) and had been subjected to the fatal process (so far as the power of germination is concerned) of kiln drying. Occurrences of this kind, which unfortunately belong to a somewhat numerous class, variously modified, should certainly lead dealers to exercise greater diligence and caution in selecting their stocks, than, we fear, many of them are in the habit of doing.—[Editor.

COCKSCOMBS.

To the Editor of the Canadian Agriculturist.

Sir,—Upon reading your remarks on the Horticultural Department of the late Provincial Exhibition at Hamilton, in the October number, I observed an error as to some plants exhibited by me, but did not consider the matter of sufficient importance to your readers to warrant correction. *The Horticulturist* of Rochester has recently copied your remarks, and inasmuch as something more is conveyed to the minds of exhibiting Horticulturists than meets the eye of general readers, and as the latter publication has a high character and wide circulation I desire now to put you right.

You stated—"*Judge Campbell of Niagara, had some very good Cockscombs, seemingly the*

same that figured at the Horticultural Show in Toronto, and received so much merited praise."

Not one Cockscomb plant of those exhibited at Toronto was taken to Hamilton, but every oneof the *fifteen* taken to the latter city and exhibited at the Provincial Show were distinct and had not before been exhibited anywhere.

While upon this subject I may notice that your Horticultural critic ommitted to allude to, and perhaps did not notice in my collection of Annuals a fairly grown plant of *Gomphrena Aurea*. It had not a very extensive display of bloom, but sufficient to shew a novelty and acquisition, and probably it is the only plant of the variety in bloom that has been exhibited in Canada West, (or with one exception) that has been raised in this Province.

I am Sir,
Your obedient Servant,
E. C. CAMPBELL.

Niagara, Dec. 9th, 1853.

We regret that any erroneous impression has been formed in consequence of our report. The error was simply this. The Cockscombs shown at Toronto were considered magnificent, and as such drew forth the highest praise. Those at Hamilton, from the same garden and put in by the same gentleman, were so superior to anything of the kind exhibited, that it was no wonder the remark was made,—they are seemingly the ones shown at Toronto, they are so very handsome. In reply to the other point we may state that as in all such cases reports are written out in a hurry, many interesting points which might be noticed are passed over either in obedience to the demands of time or space.

THE OX--HISTORY, MANAGEMENT, DISEASES, &c.

We propose to lay before our readers in the volume of the present year, the most interesting and useful chapters of Youatt and Martin's treatises on cattle. We have lately had frequent enquiries in regard to the best breeds, the mode of treating particular diseases, &c., and we do not believe we can render a more acceptable service to our readers generally, than to present them with the best information on these and similar points, selected from standard authors, such as those we have named. It would be an easy matter to copy from the Agricultural journals of the day articles on the history, management, and diseases of cattle, but these articles are often very hastily prepared and not to be relied on. The works of Youatt and Martin, both eminent English authors, have been incorporated and reprinted in the United States in a convenient form, but still we may safely conclude that not one in ten of our subscribers, is in possession of this valuable work. Now, as we print the *Agriculturist* in a shape for binding, with Index, &c., if the reader will take the trouble to preserve the numbers, and stitch, or bind them at the end of the year, he will have the *substance* of one of the most valuable books on the subject of cattle now before the public, and costing for the American edition 6s. 3d.,—more than *twice* the cost of this journal to club subscribers.

We shall not allow this subject to engross more space than its importance demands, but will endeavor by judicious condensation and selection, to present all that is really essential for the Canadian breeder, in the course of the volume, without destroying the other features of the *Agriculturist*. We may observe further, that all the really useful illustrations in the original work will be copied. This will involve a considerable outlay, but we feel warranted in undertaking it in view of the increasing interest manifested by our farmers in the science and literature of their profession, and the consequent addition that we reasonably expect to our circulation.

In this number we give the principal portion of the introductory chapters. They are historical, but too important to be omitted.

HISTORY OF THE OX.

The Ox belongs to the Class *Mammalia*, animals having mammæ, or teats; the Order *Ruminantia*, ruminating, or chewing their food a second time; the Tribe *Bovidæ*, the ox kind; the Genus *Bos*, the ox, the horns occupying the crest, projecting at first sideways, and being porous or cellular within; and the Sub-genus *Bos Taurus*, or the domestic ox.

Distinguished according to their teeth, they have eight *incisors*, or cutting teeth, in the lower jaw, and none in the upper. They have no tusks but they have six *molars*, or grinding teeth, in each jaw, and on each side. Total number of teeth, 32.

The native country of the ox, reckoning from the time of the flood, was the plains of Ararat, and he was a domesticated animal when he issued from the ark. He was found wherever the sons of Noah migrated, for he was necessary to the existence of man; and even to the present day, wherever man has trodden, he is found in a domesticated or wild state. The earliest record

we have of the ox is in the sacred volume. Even in the antediluvian age, soon after the expulsion from Eden, the sheep had become the servant of man; and it is not improbable that the ox was subjugated at the same time. It is recorded that Jubal, the son of Lamech, who was probably born during the life-time of Adam, was the father of such as have cattle.

The records of profane history confirm this account of the early domestication and acknowledged value of this animal, for it was worshipped by the Egyptians, and venerated among the Indians. The traditions of every Celtic nation enroll the cow among the earliest productions, and represent it as a kind of divinity.

The parent race of the ox is said to have been much larger that any of the present varieties. The Urus, in his wild state at least, was an enormous and fierce animal, and ancient legends have thrown around him an air of mystery. In almost every part of the Continent, and in every district of England, skulls, evidently belonging to cattle, have been found, far exceeding in bulk any now known. There is a fine specimen in the British Museum: the peculiarity of the horns will be observed, resembling smaller ones dug up in the mines of Cornwall, preserved, in some degree, in the wild cattle of Chillingham Park, and not quite lost in our native breeds of Devon and East Sus-ex, and those of the Welsh mountains and the Highlands. We believe that this referred more to individuals than to the breed generally, for there is no doubt that, within the last century, the size of the cattle has progressively increased in England, and kept pace with the improvement of agriculture.

We will not endeavor to follow the migrations of the ox from Western Asia, nor the change in size, and form, and value, which it underwent, according to the difference of climate and of pasture, as it journeyed on towards the west, for there are no records of this on which dependence can be placed; but we will proceed to the subject of the present work, the British Ox.

THE BRITISH OX.

In the earliest and most authentic account that we possess of the British Isles, the Commentaries of Cæsar, we learn that the Britons possessed great numbers of cattle. No satisfactory description of these cattle occurs in any ancient author; but they, with occasional exceptions, possessed no great bulk or beauty.

Cæsar tells us that the Britons neglected tillage and lived on milk and flesh; and other authors corroborate this account of the early inhabitants of the British Islands. It was that occupation and mode of life which suited their state of society. The island was divided into many petty sovereignties; no fixed property was secure; and that alone was valuable which might be hurried away at the threatened approach of an invader. Many centuries after this, when, although one sovereign reigned paramount over the whole of the kingdom, there continued to be endless contests among the feudal barons, and still that property alone was valuable which could be secured within the walls of the castle, or driven beyond the invader's reach; an immense stock of provisions was always stored up in the various fortresses, both for the vassals and the cattle; or it was contrived that the latter should be driven to the demesnes of some friendly baron, or concealed in some inland recess.

When the government became more powerful and settled, and property of every kind was proportionably secured, as well as more equally divided, the plough came into use; and agricultural productions were oftener cultivated, the reaping of which was sure after the labor of sowing. Cattle were now comparatively neglected, and, for some centuries, injuriously so. Their numbers diminished, and their size appears to have diminished, too; and it is only within the last 150 years that any serious and successful efforts have been made materially to improve them.

In the comparatively roving and uncertain life which our earlier and later ancestors led, their cattle would sometimes stray and be lost. The country was then overgrown with forests, and the beasts betook themselves to the recesses of these woods, and became wild, and sometimes ferocious. They, by degrees, grew so numerous as to be dangerous to the inhabitants of the neighboring districts. One of the chronicles informs us, that many of them harbored in the forests in the neighborhood of the metropolis. Strange stories are told of some of them, and doubtless, when irritated they were fierce and dangerous enough. As, however, civilization advanced, and the forests became thin and contracted, these animals were seldomer seen, and at length almost disappeared. A few of them yet remain in Chatelherault Park, belonging to the Duke of Hamilton, in Lancashire; and in the park of Chillingham Castle, in Northumberland, the seat of the Earl of Tankerville.

The wild breed, from being untameable, can only be kept within walls or good fences; consequently, very few of them are now to be met with, except in the parks of some gentlemen, who keep them for ornament, and as a curiosity. Their color is invariably white, muzzle black; the whole of the inside of the ear, and about one-third of the outside, from the tips downward, red; horns, white, with black tips, very fine, and bent upwards; some of the bulls have a thin, upright mane, about an inch and a half or two inches long. The weight of the oxen is from thirty-five to forty-five stone, and the cows from twenty-five to thirty-five stone the four quarters (fourteen pounds to the stone). The beef is finely *marbled*, and of excellent flavor. The six year old oxen are generally very good beef; whence it may be fairly supposed that in proper situations, they would feed well.

At the first appearance of any person, they set off in full gallop, and, at the distance of about two hundred yards, make a wheel round, and come boldly up again in a menacing manner; on a sudden they make a full stop at the distance of forty or fifty yards, looking wildly at the object of their surprise; but upon the least motion they all again turn round, and fly off with equal speed, but not to the same distance, forming a shorter circle,

and again returning with a more threatening aspect than before; they approach probably within thirty yards, when they again make another stand, and then fly off, this they do several times, shortening their distance and advancing nearer and nearer, till they come within such a short distance that most people think it prudent to leave them.

When the cows calve, they hide their calves for a week or ten days in some sequestered situation, and go and suckle them two or three times a day. If any person come near the calves, they clap their heads close to the ground, to hide themselves: this is a proof of their native wildness.

The dams allow no person to touch their calves, without attacking them with impetuous ferocity. When any of the herd happens to be wounded, or is grown weak and feeble through age or sickness the rest of the herd set on it and gore it to death.

The breeds of cattle, as they are now found in Great Britain, are almost as various as the soil of the different districts, or the fancies of the breeders. They have, however, been very conveniently classed according to the comparative size of the horns; the *long horns*, originally from Lancashire, much improved by Mr. Bakewell, of Leicestershire, and established through the greater part of the midland counties; the *short horns*, mostly cultivated in the northern counties; and in Lincolnshire, and many of them found in every part of the kingdom where the farmer attends much to his dairy, or a large supply of milk is wanted; and the *middle horns*, not derived from a mixture of the two preceding, but a distinct and valuable and beautiful breed, inhabiting principally the north of Devon, the east of Sussex, Herefordshire, and Gloucestershire; and, of diminished bulk, and with somewhat different character, the cattle of the Scottish and the Welsh mountains. The Alderney, with her *crumpled horn*, is found on the southern coast, and, in smaller numbers, in gentlemen's parks and pleasure-grounds everywhere; while the polled, or *hornless* cattle, prevail in Suffolk, and Norfolk, and in Galloway, whence they were first derived.

These, however, have been intermingled in every possible way. They are found pure only in their native districts, or on the estates of some opulent and spirited individuals. Each county has its own mongrel breed, often difficult to be described, and not always to be traced—neglected enough, yet suited to the soil and to the climate; and, among little farmers, maintaining their station in spite of attempts at improvements by the intermixture or the substitution of foreign varieties.

The character of each important variety, and the relative value of each for breeding, grazing, the dairy, or the plough, will be considered before we inquire into the structure or general and medical treatment of cattle. Much dispute has arisen as to the original breed of British cattle. The battle has been stoutly fought between the advocates of the middle and the long horns. The short horns and the polls can have no claim; the latter, although it has existed in certain districts from time immemorial, was probably an accidental variety.

We are very much disposed to adjudge the honor to the *middle horns*. The *long horns* are evidently of Irish extraction, as in due place we shall endeavor to show.

Britain has shared the fate of other nations, and oftener than they has been overrun and subjugated by invaders. As the natives retreated, they carried with them some portion of their property, which, in those early times, consisted principally in cattle. They drove along with them as many as they could, when they retired to the fortresses of nort'n Devon and Cornwall, or the mountainous regions of Wales, or when they took refuge in the weald of east Sussex; and there, retaining all their prejudices, customs and manners, were jealous of the preservation of that which reminded them of their native country before it yielded to a foreign yoke.

In this manner was preserved the ancient breed of British cattle. Difference of climate wrought some change, particularly in their bulk. The rich pasture of Sussex fattened the ox into its superior size and weight. The plentiful, but not so luxuriant herbage of the north of Devon, produced a smaller and more active animal, while the privations of Wales lessened the bulk and thickened the hide of the Welsh runt. As for Scotland, it set its invaders at defiance; or its inhabitants retreated for a while, and soon turned again on their pursuers. They were proud of their country, of their cattle, their choicest possessions; and there, too, the cattle were preserved, unmixed and undegenerated.

Thence it resulted, that in Devon, in Sussex, in Wales, and in Scotland, the cattle have been the same from time immemorial; while in all the eastern coast, and through every district of England, the breed of cattle degenerated, or lost its original character; it consisted of animals brought from every neighboring and some remote districts, mingled in every possible variety, yet conforming itself to the soil and the climate.

Observations will convince us that the cattle in Devonshire, Sussex, Wales, and Scotland, are essentially the same. They are middle horned; not extraordinary milkers, and remarkable for the quality rather than the quantity of their milk; active at work; and with an unequalled aptitude to fatten. They have all the characters of the same breed, changed by soil, climate, and time, yet little changed by man. We may almost trace the color, namely, the red of the Devon, the Sussex, and the Hereford; and where the black alone are now found, the memory of the red prevails. Every one who has compared the Devon cattle with the wild breed of Chatelherault Park, or Chillingham Castle, has been struck with the great resemblance in many points, notwithstanding the difference of color, while they bear no likeness at all to the cattle of the neighboring country.

For these reasons we consider the middle horns to be the native breed of Great Britain, and they shall first pass in review before us.

To be continued.

MARKETS &c.

The price of grain in the English market has recovered from the late reaction, and is again looking up. The wheat crop is now ascertained to be under an average throughout Europe, and should the present hostilities in that quarter endure and spread, the prices of breadstuffs must continue to rise. From private accounts recently received from the south of England, we learn that the wheat crop turns out much shorter than was expected at harvest. One correspondent informs us that his wheat is "scarcely worth threshing." Spring grain and hay are generally good, but more or less injured by wet weather. November proved a fine month, and it is said that a very large breadth of wheat has been sown in good condition. The hop crop is moderate, in some places almost a failure, prices rule high, from £10 to £14 per cwt. The *Farmer's Magazine* for December, estimates the wheat crop in the United Kingdom at about *two thirds* of an average. To cover this deficiency some *thirty-two millions of bushels* will be required, which added to the average imports of good seasons, for the consumption of 1854, will probably amount to the enormous quantity of *Seventy millions of bushels!*

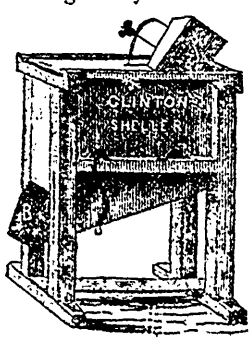
In Canada, although spring crops this year as a general rule have been light, our farmers have every reason to be thankful for the amount of prosperity granted them. The wheat crop has been abundant, and of excellent quality. Prices declined somewhat at the close of navigation, but since recent intelligence from Europe, have again reached nearly as high a figure as at any period during the fall, and every indication leads us to believe that present prices must be maintained, if not improved upon, till summer.

We have no correct data by which to judge of the amount of wheat delivered this season, and of the amount still in the country, as compared with other years, but believe from such information as we obtain from merchants and millers, that while the amount delivered has been greater than usual, the quantity still in the hands of the farmers is as great in proportion to the amount of the whole crop, as is usual at this period of the year. Full deliveries have been made from the front townships, but in the back townships the greater proportion is still on hand, waiting for sleighing or good winter roads. In Toronto market at present there is, comparatively, but little business doing in flour and grain. Spring grain is scarce, and prices, as well as of wheat, rule extremely high.

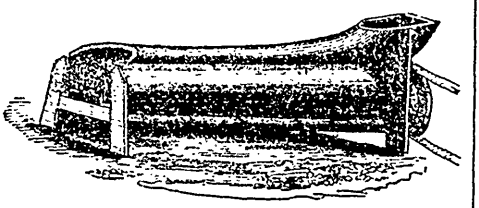
Fair deliveries of slaughtered pork are made at prices 5s. a 10s. lower than at the opening of the killing season. Prices lately, however, have slightly improved, 26s. 3d. per cwt. being paid for the best qualities of heavy weight. The display of Christmas beef and mutton in the butchers' stalls in St.Lawrence market, affords a good indication of the prosperous condition of the country, the entire Arcade from one end to the other and almost from floor to ceiling, being hung in all the available space with meat of the choicest quality, and which is selling at highly remunerating prices, both to the producer and the retailer. The display also affords an indication of the good effects attendant upon the spirit of competition engendered by the general institution of Agricultural Societies throughout the country, and by the liberal prizes offered by them; most of the best fattened beef and mutton, and for which the highest prices have been paid, being the carcases of animals which have obtained prizes at the Provincial, or some of the County Fairs, and produced by farmers who have generally taken an interest in Agricultural Societies.

CORN SHELLERS.

In the implement of Corn Sheller a great improvement has been made in a few years. Yet many have partially failed, and not a few altogether, making a very inferior article.



THE CLINTON CORN SHELLER, with iron hopper, simply and firmly secured with double spring to suit all sized ears, with balance wheel playing inside, and safe from injury, is best adapted to northern corn, and warranted the most perfect article in the market. With it a bushel can easily be shelled in five minutes.



SMITH'S CORN SHELLER AND SEPARATOR consists of a horizontal toothed cylinder six feet long and one foot two inches in diameter. The ears of corn in the operation, are confined to a part of the upper and rising side of this cylinder, by means of a cast iron concave extending the whole length of the machine, and being shoveled or let in the machine, at one end, they are driven through, and the cobs discharged at the opposite end, while the grains fall below, being admitted on either side of the cylinder. The operation is governed by elevating or depressing the discharged end, which causes the machine to discharge the cobs fast or slow, and of course finishing its work. This machine is capable of shelling two hundred bushels of ears per hour. Hundreds of them have already been sold and they may be seen at work in New York, New Orleans, and in other Northern and Southern cities and towns, where they have given great satisfaction. They are very simple and strong in their construction. Price $50.

BROOM CORN.

From the tenth to the twentieth of May, is the right time for planting this crop. Select the piece of ground most free from weeds, and prepare it as for Indian corn; that is, plough it deep and mellow and harrow smooth. The best soil is a true loam; the best manure, a rich compost, ploughed or harrowed in.

Mark off the rows 3½ feet apart with a chain or some other contrivance that will only make a mark on the surface, as the seed should not be buried deep or placed in the bottom of a furrow.

Preparing the Seed.—It is the practice with the best broom corn growers to pound the seed with a club until the hulls are broken off, when the chaff is winnowed out.

Proving the Seed.—By putting a handful in moist earth, kept warm, until it sprouts, is a very good plan. If it all sprouts, be careful in planting not to get too much in the drill.

The stalks should stand about four or five inches apart. Some prefer it in hills, of four or six stalks, twenty inches apart. If too much seed is planted you will have a task to thin it out. As soon as the rows can be seen, run the cultivator between, so as to cut very close to the corn, as it is important to keep down the grass. The great task is the first hoeing.—*Agricultor.*

BALKY HORSES.

Balky, or jibbish horses, are not only a source of great annoyance, but too frequently endanger the property and peril the lives of their owners. An East India gentleman one day took his seat in one of the omnibusses in London, but at the time of starting, all the efforts of the driver proved unavailing, owing to a balky horse attached to the vehicle. The poor animal became more and more restive in proportion to the tortures inflicted upon him by the driver, and several other whipmen who assisted on the occasion. The street became blocked up with spectators, and the interception of other carriages. Great danger was to be apprehended. The East India gentleman, above referred to, suggested to the driver and his assistants, that if they would try the East India method of fastening a cord to the horse's fore-foot, and cause a person to pull forward, the animal would start right away. The suggestion was received with contempt. However, after all other efforts failed, a long cord was attached to the animal's fore-foot, and the moment the man gave a strong pull the horse started off as if nothing had been the matter. The philosophy of the case seems to be that the animal, thrown off the centre of gravity by the propulsion forward, is taken by surprise and obliged to start. Try it.—*Rural New-Yorker.*

TO CURE SHEEP SKIN WITH THE WOOL ON.

Take one spoonful alum and two of saltpetre; pulverize and mix well together, then sprinkle the powder on the flesh side of the skin, and lay the two flesh sides together, leaving the wool outside. Then fold up the skin as tight as you can, and hang them in a dry place. In two or three days, as soon as they are dry, take them down and scrape them with a blunt knife, till clean and supple. This completes the process and makes a most excellent saddle cover. Other skins which you desire to cure with the fur on, may be treated in the same way.

We can speak in favor of the above recipe. It does all it promises. Such skins make excellent mats for indoors.—*Detroit Farmers' Companion.*

CHAPPED TEATS.

The *Prairie Farmer* has the following on the subject of chapped teats in cows:

"I have used various linaments, and many kinds of ointment, but none in my experience came up the mark like *clear cold water.* My practice is to take water to my cattle yard, as much as my milking pail would contain. Every teat, and the lower part of the bag, whether sore or sound, is washed clean. The teats are then soft, the cow stands quietly, and no dirt falls in to your pail.

In Aylesbury the sale of ducks realises £15,000 a year. In Norfolk and Cambridge the small farmers pay their rents with their poultry.

Literary and Miscellaneous.

William McDougall, Esq., Editor.

EDITORIAL ARRANGEMENTS FOR THE YEAR, &c.

In order to make the *Agriculturist* useful and interesting to all classes of readers, we have secured additional editorial aid in the preparation and selection of matter for the present volume. The Agricultural and Horticultural department will be under the supervision of Prof. Buckland, assisted by Mr. Thomson, a young gentleman who has had a good practical acquaintance with Canadian farming, and is now assistant Secretary to the Board of Agriculture. The Literary and Miscellaneous department, comprising about eight pages, will be under the direction of Mr. McDougall, the proprietor, who has always given more or less attention to the selection of matter for the *Agriculturist*. By this division of labor, it is hoped to make the paper, as a whole, more generally acceptable. The number of Correspondents, we have every reason to believe, will be larger than during any previous year; and therefore we look forward with some confidence, for the support and approbation of all true friends of agricultural improvement.

The following story may be read with advantage by many fathers and mothers in Canada. The tendency to a premature separation of families, by the discontent and "going off" of its younger members, is not confined to the poor, but is painfully prevalent even among the well to do. We every day hear of young men (often mere boys, and under age) leaving the parental roof to seek their fortune in Australia, California, or elsewhere—an object they never find, but are themselves lost in the search,—and if the true cause of the separation were enquired into, we believe it would be found, in nine cases out of ten, to be the fault of parents. A want of sympathy, harsh treatment, wounded feelings, neglect of those *little things* that make home pleasant, indifference to the plans and hopes of that future that is opening out to the young and ardent boy,—these, and such as these are the causes that drive so many promising youths away from their *Home*, to be wrecked and swallowed up in the great sea of life, before they have learned to shun its rocks and sand-bars.

We have known so many cases—some of a painful kind, entailing sorrow on a whole family—that instead of lecturing the youth, we offer a lesson, in a form that cannot offend, to the fathers and mothers of youth. Why should the boy be checked when he strives to embellish his home to make it pleasant and happy? Let him plant the trees by all means.

FARMER GOVE AND HIS SON;

OR,

HOW TO MAKE HOME PLEASANT!

When a young man leaves his home in the country for a less desirable one in the city, or elsewhere, the inference, as a general thing, is either that he is "spoiled" by indulgence on the part of the parents, or by certain influences which may have fallen upon him, led him to despise labor on a farm, and induced him to seek a less laborious and more easy mode of life. That these are not the *only* causes which induce boys to leave a good home and farm, the following sketch may perhaps show.

"I am really very glad to see you, Mrs. Gove, this afternoon. Do you know it's nearly a whole year since I have had this pleasure, and you my nearest neighbor?"

"I did not think it was so long, but—but, I have a great deal of care."

"Yes, you certainly must have. Let us take our work and sit on the piazza; it is much cooler there and secluded from the sun."

"Can we see our meadow from there, Mrs. Norton?"

"Let me see—O, yes, very well."

"Mr. Gove, with the men and Willie, have gone down to the lower field fencing, and he wished me to have an eye on the meadow, as that fence is all down and our cattle are in the road. I see you have finished planting, Mrs. Norton. You have everything done in season, and yet you never seem hurried or fretted. You must take comfort."

"Why, as to that, we feel that there is nothing worth doing, but is worth well doing; and feeling thus, we own but little land, a small farm compared with yours, and we find no difficulty in having our work done at the right time."

"Yes—and I can hardly realize, Mrs. Norton, that this is the same place where I played, when a child, 'tis so changed; these handsome trees—why in this spot twenty years ago a sand bank 'twas, in which nothing grew but dock and tansey. I used to get the double tansey for grandmother, to color her cheese with. I am not surprised that my Willie, should say, as he did to-day, that he was never so happy as when he was under the ash tree down by the spring. Really, Mrs. Norton, that is the only one near our house, and that is fast going to decay. You have vines, trees and shrubs, and beautiful flowers; why, it seems to me these things must tend to make home pleasant."

"You are right, Mrs. Gove; we feel that by cultivating a taste for the beautiful in nature, we improve the character and soften the heart."

"I know you are right, and not for my sake, but on Willie's account, I wish I could make Mr. Gove think as we do. But perhaps I do

wrong to speak in this way, for Mr. Gove has more care now than any one man ought to have, and I know that he has no time for anything but barely to take care of what he has, without making any improvements. But I am in hopes when William grows up, that he will get time to set trees and make our home pleasant, for a more ardent lover of nature I surely never saw."

"Mrs. Gove, of course your husband knows his own business, but I've often thought that it would be for your interest all round, if your husband had less land to care for. I mean, if he would sell some, it certainly would lessen his care as well as your own."

"Perhaps so, but really Mr. Gove does'nt think it looks just right for a man to part with property which has been handed down from father to son, until it is now in the fourth generation.—'Tis true I have a good deal of care, and must work hard, but I have no reason to complain, though 'twould be very nice, what little time I have to sew, to sit in such a cool, delightful place as this. Perhaps I am all wrong, and think too much of these things."

Mrs. Gove was returning from the visit to her neighbor, which they had mutually enjoyed, when a pat on the shoulder caused her to exclaim, "Are you tired, Willie?" as she gazed earnestly at that pale face, and sought to read the language of those dark and handsome eyes. "Are you tired my dear?"

"Yes, mother. O, I am very tired; for don't you think after I had helped father as long as he had anything for me to do, I went into that pretty grove where Sis and I played the week before she died, and there right by a little mossy bank, was a little larch tree, and mother, I wanted very much to dig it up and bring it home, and set it out by your bed-room window. I am sure, mother, it would look beautifully there, and then I never could see it without thinking of little Alice."

"Did your father take it up for you?" said Mrs. Gove, as she strove to force back the tears that would come.

"No mother; I took the spade and tried; I dug all round it, but I couldn't start it a bit, when I tried to pull it up, and I asked father if he would let Mike take it up for me. You know, mother, that Mike is a good hand, for he helped take up and set out all Mr. Norton's trees."

"And what did your father say, my dear?"

"He said, 'don't be foolish, child—we've no time to fool away,' or something of that kind. I wish *I* had strength to pull it up; but I don't know as father would let me set it out. Do you think it is foolish, mother?"

"My dear child, your father has a great deal of care and anxiety, and you heard him say this morning, when a man called to tell him his fence all lay flat, and everybody's cattle were in, that his work was driving him continually; so perhaps father thought 'twould be wrong to spend the time that is now so precious to us, in doing what we could get along without doing."

"Well, mother, does father take much comfort? He is always behind hand, and he never finishes all the jobs he begins. Why, don't you know last summer we had so much to do that we did not get time to hoe that piece of corn between the woods, and I heard father say myself, that it did not begin to pay for the plowing. And mother, you know I heard it talked over at the store, how father had to pay for a strip of land he bought of Mr. Chase, twice, because he did not get time to make the deed, and Mr Chase died before 'twas done. When I hear people say to father, 'you are the richest man in town,' or 'you own the most land,' why, I think, well, I don't see as father is any happier than the neighbors, that havn't half as much. Why, I heard father say to-day that he was harrassed to death."

The night after the above conversation, as Willie was quietly sleeping, and Mr. Gove sat with his arms folded, and his eyes resting on the wall, Mrs. Gove asked her husband, in rather a timid tone, if he had noticed how fully Mr. Norton's fruit trees had blown.

"Well, I believe I saw them, or heard some one speak of it. But I am tired."

"Yes, I think you must be, you have worked hard all day."

"I have worked like a dog, and what does it amount to?"

"Do you think," said the wife, "considering we have to work so hard and hire so much help, that it is for your interest to keep all the land?"

"Think—I don't think anything about it. I've got it, and I must take care of it. I should look well spending what has so long been in the family. As long as property is in hand it is safe; but change it into money, or any thing else, and ten to one 'tis soon gone, nobody knows where."

"Perhaps you are right; but it seems to me you could take much better care of less, make it more profitable, and at the same time relieve yourself of this care and anxiety, which I fear is wearing upon you. And then you know William is slender. I don't think he'll ever be able to work as hard as you have done."

"He never will, if he is brought up to think he is too good to work. He has notions in his head now that I fancy will do him no good. You have been over to Norton's this afternoon. I suppose his wife advised you what was best for us to do. Why, Betsey, can't you see through it all? They have been and sold half of their farm, and laid out the money in trees and I don't know what all,—sent the boys to school instead of teaching them to work and so she wants us to do the same. Ha! ha! misery likes company.—The long and short of it is, Betsey, Mrs. Norton wanted to get rid of work. I wish they had sold the whole concern and cleared out, for I plainly see you nor William can go over there but it bewitches you. No—you never will see me covering my land, or surrounding my house with *boughten* trees. If I had time I should like well enough to set out a maple or something near the house. I should like one or two for the horses to stand under; but I haven't the time, neither do I think it best to encourage any such notions in the boy. You know how it is—"if you give an inch they'll take an ell." He begged hard for us to dig up a larch this afternoon, but indulgence will spoil any child. If I had done it for him, why he would only have wanted more, and if he

got too many such notions, why he is so headstrong, and the first we should know he would be off like others we know of. No; the only way to get along with children is to be *strict;* no arguing with them, and no giving way to their foolish wants."

"Do you think it was indulgence that made George White go to New York? I don't know but what it might be, his mother was dreadful careful of him."

"I should like to know what 'tis makes boys leave their fathers' home and farms and go off to the city, and barely get their board, if it is'nt letting them have their will and way."

"I have no doubt that over indulgence begets self-will, and overcomes a child's sense of duty, so that restraint is thrown off, and parental obligation disregarded; but, husband, I do believe one thing, and that is, if we wish Willie to love his home, we must make it happy; if we wish his warmest affections to cluster around this place, we must make it attractive. You think the Norton boys are indulged too much, but this indulgence is nothing more than a desire on the parents' part, judiciously carried out, to make them useful and happy. And I believe they take the right course. No children love their home better than they do. Mrs. N. tells me that it is with the greatest reluctance that they leave home in the vacation, to visit their country cousins."

"Well, well, don't say any more, for I have a much as I can do to get through the day's work> and I for one want to sleep in the night! Mrs> Norton is welcome to her notions and I will have. mine!"

While Mr. G. is wrapped in the "sweet sleep of the laboring man," and Mrs. G. is revolving in her own mind the many different plans which suggest themselves to a mother's ever watchful heart, for the good of her boy, let us take a peep at the character of both parents and child.

Had a stranger inquired of almost any one in N., "what sort of a man is Mr. Gove?" the answer would probably be to this effect:—"Fine man, sir, upright, honest, and firm; *trifles* don't move him, sir." Granted—but let *us* see if there can be, with these good qualities, nothing wanting.

Mr. G. was stern; in this view, the "*smoothing over*" of an affair was never advisable.—Willie, as a child, had much to contend with in the way of passion, pride, and self-will; like almost all children occasional acts of thoughtlessness and hasty impulse led him into error and its painful consequences. Had his father been careful to "do justice to his better qualities, while at the same time he blamed and convinced him of his faults," all might have been well; but Mr. G. never met his errors in "love and conquered them by forgiveness." Unjust harshness actually confirmed him in error. Mr. G. was spoken of as a generous man, but to use the beautiful language of one departed, "There are those who are lavish in attention and presents to friends. but who never imagine that their own home circle has the first and strongest claim to kindness, whether of word or deed. Affections and thoughts lavished on comparative strangers, never radiate on home; but when given to home first, they shed light and kindliness far and near." Mr. G. never won the heart of his child. How was it with the mother? She possessed the rare combination of "gentleness with firmness, submissiveness with dignity." Her anxious desire was to do justice to his better feelings, and while she wished to educate his mind, she was more anxious that his heart should be won and taught.

But little change, outwardly, was visible in the Gove family when William had reached his eighteenth year. The homestead remained the same—save some marks which "Time's effacing fingers" had not failed to make. The "ash tree," by the spring, was gone, and the maple "for the horse to stand under" had never been "set out."

One fine morning in May, William asked his father if he might have the sorrel horse to go to the village adjoining. Permission was given on condition that he would return before dinner.—Dinner came, and with it came William.

"What has our William been doing?" exclaimed Mr. Gove, as he gave a hasty glance at the window. "Cutting a waggon load of withes!"

"I don't know, but I can't see very well without my glasses."

'Twas easy to see, however, that that hasty glance had ruffled the smooth current of his thoughts, for he at once knew that withes needed no roots. William took out the horse, wheeled the wagon into the shed, and entering the long kitchen seated himself at the table. The mother with her quick perception failed not to understand why that shadow rested upon the father's brow. Hardly a word was spoken—Mr. G., upon leaving the table, took up a newspaper, a thing which he rarely had time to do; it was evident to Willie, however, that he was not reading very intently for the paper was upside down, When William left the house he went directly for the spade and hoe, and walking deliberately down the hill side, south of the house, commenced making holes twelve feet apart, where he had helped his father plow the day before. He had thus been engaged half an hour, when rising to wipe the heavy drops of moisture from his forehead, he saw his father looking earnestly at him.

"What are you doing, William?"

"I am fixing places to set out trees."

"What kind of trees?"

"Peach and pear trees, sir."

"Where did you get them?"

"I bought them at a tree auction, to-day."

"You did! Well you can't set them here, sir."

"I can't—what's the reason?"

"There are reasons enough, though I'm under no obligations to tell children; yet I won't be particular this time. In the first place, I wish you to understand once for all, that you take one step too far when you buy trees without leave or license, and more than that, proceed deliberately to put them on my best corn land. And now you can do what you please with the trees. You have taken far too much liberty. You shall never set them on my land."

Without one word, William shouldered his spade and walked to the house. His mother, who stood at the corner window, although she had heard no word spoken, understood the whole affair perfectly. She saw William shoulder the spade, and then her heart beat heavily, but quickly raising the corner of her apron, she wiped the tears which were fast falling, and met her son with a smile.

"Well, mother, I've done," said he as he sunk on the old kitchen chair, "I've done trying to be anything here. *He* won't let me be anybody."

"My child, don't speak so disrespectfully of your father. *He*, Willie, that sounds dreadfully; never say that again my son.,'

"I can't help it, mother, I shan't stay here. You know what I told you last week, mother, and to-day I have had something come across my feelings, harder to bear than all. When I was coming from the village, I met a man with a double waggon, and a beautiful larch tree in it. I was hoping to buy it, so I asked him where he got it, 'Squire Gove gave it to me,' he replied. O, mother, wasn't that too much? I asked him who took it up, and he said his Irishman that he called Mike. I could have torn that tree in splinters, mother. I rode round by the grove, and sure enough 'twas gone and the mossy seat all trampled and torn. Do you think after that I would ask him to *let* me set out the trees? No, mother, if father can do without me I can do without him.—I shall go away as soon as you can get my things ready. Of course the folks will say—'What an ungrateful boy to leave his father alone,' but why can't father try to please me as well as others—as well as strangers? There are the Norton boys—if father had done one-quarter for me that their father has done for them, I should be very, very happy. O, mother don't feel so bad—you must not blame me. I know you are a real Christian, mother, but I ain't like you—you overlook and forgive everything. I'm some like father; I wish I was just like you."

William expected his mother would entreat him to stop at home, but no, not one word did she say in favor of it. She knew these were little things to cause the boy to leave the home of his youth for a home among strangers, but she knew also that the joys and griefs at home are almost all made up of little, very little things.

We will hasten over the particulars of William's leaving home, and only say that his father's parting words were, "I can do without you as long as you can do without me, William." In four weeks from this leave-taking, William was a waiter on board a Mississippi steamboat.

Mr. Gove hired an extra hand;—many people shook their heads meaningly, and said it was a pity, a great pity, but nothing new or strange, for an only child to be spoiled by indulgence; but then he was a pretty, bright boy, and they supposed it came hard to punish him, but "spare the rod and spoil the child," was scripture.

The summer was passed, the golden grain was garnered, and the rich fruits secured, when Mr. Gove, who had grown somewhat moody of late, called Mike to the back door, and giving him some directions, took his hat, and passing out the other door, joined him.

"Let me see, you have the spade and hoe. Well, now, come down with me to the side of the hill where the early corn was planted, and do you remember where the holes were, that William made last spring?

"And sure 'tis not me that's afthur forgetting sich things, for didn't I put a flat stone by every hite of 'um; and didn't I in hoeing and harvest keep them from being shoved a bit? For do you mind, sir, I set a dale by the boy—he wouldn't hurt a baste, sir, and his heart is as big as a whale."

"Well, well, that's enough, Mike. Now you bring all the trees you buried in the swamp, and set them out just as you did Norton's, and do you know which were the trees designed for the holes William had opened?"

"And faith I mind it well, for didn't I tie a string round 'um, jes so."

Mr. G. took the arm-chair, and moving it to the bed-room window, seemed lost in thought. Surely, he must be sick, for he was never known to sit down of a week day except at meal times.

Two hours passed and Mike was passing the window, when he was thus accosted by Mr. G.: "Have you done, Mike?"

"Sure, sir, a plesant job to me, I was lazy to quat it."

"Now take your spade and prepare a place by this window, where you see I've placed the stick, for a larger tree. Now if you have it right go over to Capt. Burns' and ask him if he will sell me that larch tree in the west corner of his birch lot. Tell him the price is no object, and be careful you don't break any of the small roots; be careful, Mike."

"No fear o' that, sir."

"Stop, that is not all. When you come home, call at Smith's, and tell him I have concluded to come over this afternoon and Squire Norton will be here to fix the writings.—Tell all who enquire for me that I am sick."

Before night one-third of Mr. Gove's land was in Mr. Smith's possession, and the deed on record. The larch seemed quite at home by the bed-room window.

And now what strange spell was this upon Mr. Gove.

> "O, there are moments in our life
> When but a thought, a word a look has power,
> To wrest the cup of happiness aside
> And stamp us wretched!"

The evening before, Mr. G. chanced to take up a school-book of William's, and on a blank leaf were written in a neat school-boy hand, these simple lines:

> "'Tis the last blooming summer these eyes shall behold
> Long, long, e'er another, this heart shall be cold;
> For O, its warm feelings on earth have been chilled,
> And I grieve not that shortly its pulse will be stilled."

Mr. G. dropped the book, and wandered he hardly knew wither, till he found himself in the swamp where William's trees were buried. What followed the reader already knows.

Mrs. G. had finished her day's work, and was seating herself in the little rocking chair, when Mr. G. called to her from the bed-room

"Betsy, will you sit in here? I want you to write a letter to William to-night."

"To-night! Why it is after nine o'clock!"

"I know it, but I shall feel better if it is done to-night. I feel sick all over and perhaps I am nervous."

"I will write what you wish me to my dear husband."

"O, don't say so—but tell Willie I wish him to come home without delay; tell him for the love he bears his mother, and for the love *I bear him*, to come now. Say that my hand trembles so I can't write this, but I say it from my inmost heart."

"And now, Betsy, I will try to ask God to watch over that boy, and to soften my own proud heart."

"O! when the heart is full—when bitter thoughts
Come crowding thickly up for utterance,
And the poor common words of courtesy
Are such a very mockery—how much
The bursting heart may pour itself in prayer."

June, beautiful June, the "month of roses," found Mr. G. in that "old arm chair," by the bed-room window, but O, how changed!

"His hair was thin, and on his brow
A record of the cares of many a year,
Cares that were ended and forgotten now"

It was the last day of his earthly existence. The gentle breeze as it swept through the light foliage of that beautiful larch caused him to open those eyes so soon to be closed forever—and as they met for the last time on earth those of his own Willie, upon whose arm his head rested, he whispered, "I die happy now," and the scene of life had closed.

THE POETRY OF AGRICULTURE.

The principles of agriculture are exceedingly simple. That they might be so, God himself was the first great planter. He wrote his laws visibly in the brightest, loveliest, and most intelligible characters, everywhere, upon the broad face of the liberal earth, in the greenest leaves, in delicious fruits, in beguiling and delicate flowers. But he does not content himself with this alone. He bestows the heritage along with the example. He prepares the garden and the home, before he creates the being who is to possess them. He fills them with all the objects of sense and sentiment which are to supply his moral and physical necessities. Birds sing in the boughs above, odors blossom in the air, and fruits and flowers cover the earth with a glory to which that of Solomon, in all its magnificence, was vain and valueless. To his hand were these fine groves, these tall ranks of majestic trees, these deep forests, these broad plains covered with verdure, and those mighty arteries of flood and river, which wind along, beautifying them with the loveliest inequalities, and irrigating them with a seasonable fertilization.

Thus did the Almighty planter dedicate the great plantation to the uses of that various and wondrous family which was to follow. His home prepared—supplied with all resources, adorned with every variety of fruit and flower, and checkered with abundance, man is conducted within its present limits, and ordained its cultivator under the very eye and sanction of heaven. The angels of heaven descend upon its hills. God himself appears within its valleys at noon-day; its groves are instinct with life and purity, and the blessed stars rise at night above the celestial mountains to keep watch over its consecrated interests. Its gorgeous forests, its broad savanahs, its levels of flood and prairie, are surrrendered into the hands of the wondrously favoured; the new created heir of heaven. The fowl summons him at morning to his labours, and the evening chant of the night bird warns him to repose. The ox submits his neck to the yoke; the horse moves at his bidding in the plough; and the toils of all are rendered sacred and successful by the gentle showers and the genial sunshine which descend from heaven, to ripen the grain in its seasons, and to make earth pleasant with its fruits.

GENIUS AND TALENT CONTRASTED.

Genius is the native breath of the most richly endowed, luxuriating in everything beautiful and fair—the inspired vision which makes the future present, and the distant near,—a lingering reminiscence of the infinite ocean from which we all emerged, and a vivid prognostic of an eternity to come. It is a rare possession, the line of demarcation between the highest form of the intellectual and the lowest form of the divine, causing its possessor to be a "maker" of things, most like God; a "declarer," who speaks the highest law in tones like the sound of many waters, and with a splendor as pure and pervading as the light of heaven.

It is the quality of genius to flow, while plodding talent has a constant tendency to freeze. He who is blessed with the first, passes through life as a broad and placid river traverses continents, and, in its calm but irresistible course, reflects every natural charm. Ben Johnson possessed an extraordinary opulence of thought; but it was the produce of the amassing power of talent, not, as in Shakspeare, the creative power of genius. Materials which, in the hands of talent, are but herbs and crude metal—papyrus and bronze—by the magical touch of genius are elevated into stupendous architecture, temples that outlive the Pyramids, around which the deluge of ages roars in vain.

Talent accomplishes results with slow toil, like Caliban; while genius works its spontaneous wonders like the wand of Prospero. The traces of talent are discovered by the searcher after excellence; but genius strikes us like the lightning, without the eye being obliged to look for it. It illumines everything with its own broad, clear flash. Genius is daring, thinks for itself, and pursues its ends out of the beaten track; while talent plods on after the manner and dictum of others, and is applauded only by critics of the same taste and mental calibre.

Talent takes impressions from beautiful objects; genius creates its own originals. Talent collects data, and from them deduces conclusions; genius overleaps the intermediate process,

and reaches the same result by intuition. Newton had genius, and it discovered the law of gravitation; he also had talent, and with this he proved it. The higher attribute is necessary to render one great in his own presence; the other must be employed to render one useful to the world. Without the sun, the universe is a chaos; genius kindles an original flame, and talent walks in the light thereof.

INFLUENCE OF OCCUPATION ON LIFE.

One of the most interesting departments of the Registration Reports published annually by the State, is that which relates to the influence of occupations on the duration of human life. In the last report, which is now before us, there are tables exhibiting the average ages and vocations of persons over 20 years of age, who have died during 1851, and also exhibiting the same for a period of 7 years and months, viz., from May 1, 1843, to December 31, 1851. Taking this last as our guide, we find that the average duration of life in Massachusetts is as follows:

Agriculturists, - - - -	64,02
Laborers, - - - -	45,10
Mechanics, - - - -	46,01
Merchants, - - - -	36,12
Paupers, - - - - -	67,52
Professional Men, - -	48,46
Public Men, - - - -	50,00
Seamen, - - - -	43,07
Average, - -	51,94

The longest livers are distillers, whose average age is over 74. But six men of this profession however, have died within the time embraced by the tables. Pilots stand next, their average ages being nearly 72 years. Weighers and Guagers live 70 years, omitting fractions; Gentlemen 68; Caulkers and Gravers; Judges and Justices, 65; Bank Officers, Sheriffs and Constables, 62; Millers, 60; Coopers, 58; Tobacconists, 57; Lawyers, Sailmakers, Shipwrights, Setvedores and Sextons, 55; Tallow-Chandlers and Hatters, 54; Wood Turners, 53; Millwrights, 51; Carriage-makers and Riggers, 50; Carpenters, Tanners, Brokers and Soldiers, 49; Innkeepers and Grocers, 48: Butchers, Druggists, Masons, Papermakers, Wheelwrights, Cooks and Victuallers, 47; Expressmen, Traders and Cabinetmakers, 46; Leather Dressers and Weavers, 45; Watchmen, Booksellers, Tailors, Harness-makers, Founders, Bakers and Ticket Masters, 44; Brickmakers, Furnacemen, Manufacturers, Shoemakers and Wool Sorters, 43; Silversmiths, Painters, Bookbinders, Cardmakers, Smiths and Jewellers, 45; Artists, Stablers and Teamsters, 41; Musicians and Welldiggers, 40; Cigarmakers, Dyers, Upholsterers and Glass Blowers, 39; Engravers, Whipmakers and Drivers, 38; Drovers, Teachers, Civil Engineers, Pedlers and Printers, 37; Machinists, Tinsmiths and Comedians, 36; Editors, Chimney Sweeps and Confectioners, 35; Shoecutters, Railroad Agents and Conductors 34; Clerks, Dentists, Engineers and Firemen, 33; Operatatives and Reedmakers, 31; Piano Forte makers, 31; Powdermakers, 30; Stove dealers and Baggage Masters, 29; Fencing Masters, News Carriers and Cutlers, 28; Brakemen, 27; Students, 23.

Among females who are engaged in regular occupations, the longest lived are nurses whose average age is 55; next come Housekeepers, 55; Shoebinders, 45; Seamstresses and Domestics, 43; Tailoresses, 41; Strawbraiders, 36; Milliners, 35; Dressmakers, 32; Teachers, 28; Operatives, 26. The average age of the above classes of females is 46,78 years, which is five years and sixteen-hundreths less than the average of the males.

The tables from which we have gathered the foregoing facts extend over a sufficient period of time to enable us to deduce some important conclusions. In the general divisions of occupations, it will be seen that the agriculturist stands first on the list, in length of life, the average age of this class being no less than 64 years. This is fully twelve years above the general average, and nearly nineteen above the average age of those returned as laborers; and eighteen per cent. above that of mechanics. But when it is considered that none are embraced on the table who died prior to their 21st year, the difference is really much more important. Starting, then, at the commencement of the 21st year of life, the farmer has the prospect of 44 years before him, while the shoemaker has only the prospect of 23. Next to agriculture, there are probably more of our citizens engaged in shoemaking than in any other occupation. In 1850 there were 55,082 farmers in the State, and 31,944 shoemakers. The carpenters number only one half as high as the shoemakers. The latter form so important a part of our industrial community, that the question may well be raised whether means cannot be devised to diminish the unhealthy tendencies of their labors. The mortality among shoemakers, we suspect is to be ascribed as much in the small, and overheated and unaventilated rooms in which the trade is generally pursued, as to the sedentary nature of the employment itself. Large workshops, well ventilated, and with temperature regulated by the thermometer, would do wonders for our friends of the lapstone. A little garden-patch in addition, just large enough to scratch round an hour or two each day, would doubtless add much to the value of the prescription.—*Boston Paper.*

CERASUS ILICFOLIA.

The San Diego *Star* thus describes a California tree, supposed to be very suitable for a shade tree: There is a tree in the mountains, not far distant, known in botany by the above title. As its name indicates, it is a species of the cherry. It belongs to the family of evergreens, and flourishes in dry localities, growing to the height of ten and twenty feet. It bears a nut, the kernel of which is pleasant to the taste and resembles almond. The foilage is not dense, but is of a dark living green upon the outside, while the underside has a whitish tint, and as it is moved by the winds, has a tremulous, lively appearance. We believe it could be easily propagated, not only by transplanting but by the seed.

THE INGLEBOROUGH CAVE IN CLAPDALE.

For about eighty yards from the entrance the cave has been known immemorially. At this point Josiah Harrison, a gardener in Mr. Farrer's service, broke through a stalagmitical barrier which the water had formed, and obtained access to a series of expanded cavities and contracted passages, stretching first to the north and then to the north-west, afterwards to the north and then to the north-east, and finally to the east, till, after two years spent in the interesting toil of discovery, at a distance of seven hundred and two yards from the mouth, the explorers rested from their labours in a large and lofty irregular grotto, in which they heard the sound of water falling in a still more advanced subterranean recess. It has been ascertained, at no inconsiderable personal risk, that this water falls into a deep pool at a lower level, beyond which further progress appears to be impracticable. In fact, Mr. James Farrer explored this dark lake by swimming—a candle in his cap, and a rope round his body. In this long and winding gallery, fashioned by nature in the marble heart of the mountain, floor, roof, and sides are everywhere intersected by fissures which were formed in the consolidation of the stone. To these fissures and the water which has passed down them we owe the formation of the cave and its rich furniture of stalactites. The direction of the most marked fissures is almost invariably north-west and south-east, and, when certain of these occur, the roof of the cave is usually more elevated; the sides spread out right and left, and often ribs and pendants of brilliant stalactite, placed at regular distances, convert the rude fissure into a beautiful aisle of primæval architecture. Below most of the smaller fissures hang multitudes of delicate transluscent tubules, each giving passage to drops of water. Splitting the rock above, these fissures admit or formerly admitted dropping water. Continued through the floor, the larger rifts permit or formerly permitted water to enter or flow out of the cave: by this passage of water, continued for ages on ages, the original fissure was in the first instance enlarged by the corrosive action of streams of acidulated water; by the withdrawal of the stream to other fissures, a different process was called into operation. The fissure was bathed by drops instead of by streams of water, and these drops, exposed to air currents and evaporation, yielded up the free carbonic acid to the air and the salt of the lime to the rock. Every line of drip became the axis of a stalactical pipe from the roof; every surface bathed by thin films of liquid became a sheet of sparry deposit. The floor grew up under the droppings into fastastic heaps of stalagmite, which sometimes reaching the pipes, united roof and floor by pillars of exquisite beauty.—[The Rivers, Mountains, and Seacoast of Yorkshire, by John Philips, F.R.S.

WHERE ARE OUR TREASURES?

In judging of the state of the heart—of the moral attitude of its purposes and affections,—we can ask ourselves no more important and searching question than this:—Where are our dearest prized treasures deposited? For the Saviour has declared in one of those brief utterances which command at once the assent of every reflecting mind,—"Where your treasure is, there will your heart be also!"

Where are your treasures? let all ask who read these paragraphs. Are they hidden in earthly coffers, are they placed on earthly wisdom or honors? If so our hearts are fixed on transitory things; they dwell in the strong box where our wealth is hoarded, they are bound up with the honors we have gained, or have become a part of the wisdom of which we pride ourselves. Our hearts have no home but with the earthly and fleeting; they live with their empty, vanishing honors, with their wisdom which proves folly in the light of eternity, or with their wealth which takes wings like a frightened bird, fleeing at once and for ever away. Nor can one of these valued possessions prove of any worth beyond the present existence. Death strips us of all treasures laid up in earthly coffers. If moth and rust corrupt not, and no thieves steal away, yet an hour comes when all must be left behind, and the heart be ushered into the eternal world, naked, poor—with none of those possessions which it has hitherto made its pride and solace—its hope and stronghold in its earthly journey.

Where are our treasures? let us ask again. Some who read are of those who have looked upon the earth and everything it esteems, and found nowhere a worthy home for the heart and the riches most to be valued. The admonition, "Lay up for yourselves treasures in Heaven," we have thought that of wisdom, and through the grace of God gave heed thereto; and our treasures are safe with Him, beyond the reach of moth or rust or prowling thief, and there our hearts are also. We love to contemplate the riches of love Divine, which even now are ours, and the priceless joys we shall soon inherit in the chosen home of our hearts, where is laid up that "pearl of great price"—the hope of eternal life.

Who would not "lay up treasures in Heaven? They are safe there, and though we enjoy them continually, they shall increase thereby. The heart need never fear of becoming bankrupt which has there its treasures in deposit.

HOUSE PLANTS IN WINTER.

"What is the reason that my plants do not grow as well as Mrs. Jones'? I am sure I take a great deal more pains with them, and water, and nurse, and air them, but all will not do; they are weak, slender, sickly, and some of my best plants have died—while Mrs. Jones seems to take very little care of her's, and yet they grow and bloom beautifully!"

This appeal to us for aid and advice, which has just been made, is not the first complaint of this kind of ill-success. The truth is, some plants are actually nursed to death. Care and attention bestowed on plants, *which they do not need*, are worse than no care at all. It is knowing *just what to do*, and doing that, and no more, that gives some persons their success. Or, as a late writer remarked, there are two great points to be

attended to:—1, Not to *let* your plants suffer by neglect; and 2, not to *make* them suffer by interference. We would class the requisites for good treatment as follows:—

1. Plenty of light.
2. A due supply of water.
3. Proper temperature.

Fresh air, cleanliness, and good soil, are obviously of importance, but are less likely to be neglected than the three first named wants, and we shall therefore add a few additional remarks under these heads.

1. *Light.*—Plants cannot by any possibility have too much of this. The stand should therefore face the window, and be placed as near to it as practicable; and the window should be broad, as little obstructed in its light by outside trees as the nature of the case will admit. But rapidly growing plants require most light; hence should be placed more directly in front of the window.

2. *Water.*—This must be given according to circumstances. A plant in nearly a dormant state, needs very little—those in a rapidly growing condition require considerable. Too much water will make the latter grow slender, but they will bear a greater supply if in a strong light. It must be remembered as a standing rule, that dormant plants may remain comparatively in the dark, and with little water; and growing ones should have a good supply of water, and a full supply of light But it must not be forgotten that green-house plants generally are nearly dormant during winter, and the soil must therefore, be kept but moderately moist, as the plants in this condition do not pump any moisture from the soil, and little escapes directly by evaporation.—Drainage, by filling one-fifth of each pot with charcoal, is of importance.

3. *Temperature.*—Many house plants are destroyed by too much heat, which increases the dryness, and both of these causes together are more than they can endure. A cool room, never as low as freezing, is best. From 50 to 53 degrees is much better than 65 to 70, the ordinary temperature of living rooms.

Syringing the foliage with tepid water, to wash off whatever dust accumulates, is of use; and the admission of fresh air, when there is no danger of chilling or freezing the foliage, should not be neglected.—*Alb. Cultivator.*

THE LARGEST TREE IN THE WORLD.

There is a cedar tree growing in the mountains of Calaveras county, about 20 miles north-east of Murphy's, which is said to be the largest tree in the world. A correspondent of the *Sonora Herald*, who recently made an excursion to see it, thus describes it:—"At the ground its circumference was 92 feet; four feet above that it was 88; and ten feet above that it was 61 feet in circumference; and after that the tapering of the shaft was very gradual. Its height, as measured by Capt. H—, is 300 feet, but we made it but 285. This tree is by no means a deformity, as most trees with large trunks are. It is throughout one of perfect symmetry, while its enormous proportions inspire the beholder with emotions of awe and sublimity. Elegance and beauty are inseparable concomitants of its grandeur. I have said this is the largest tree yet discovered in the world. It is so. The celebrated tree of Fremont would have to grow many centuries before it could pretend to be called anything but a younger brother. It is said that a tree was once found in Senegal, in Africa, whose trunk measured 90 feet in circumference. But no one has ever been able to find it since its first discovery. It is called by the natives 'baobab;' by botanists, 'Adansonia digitata.' But it is admitted that none can now be found with a circumference greater than 81 feet. There is a tree in Mexico, called the 'taxodium,' which is said to be 117 feet in circumference, but some have said that it is formed by the union of several trees. The height of all these foreign trees is not more, in any case, than 70 feet; and none of the trunks are more than 10 feet. The age of the mammoth cedar of California, if each zone may be reckoned one year, is about 2,520 years. A section of the wood which I brought home with me, exclusive of the sap, which is but little more than one inch thick, numbers about 14 zones or grains to the inch. At that rate, if it were permitted to grow, it would increase its diameter one-seventh of an inch every year. In 84 years its diameter would be increased one foot; in 840 years 10 feet—so that it would then be 40 feet in diameter, and 120 feet in circumference. This giant of the woods and of the world is to be flayed, literally. The patriotic process has already commenced. We understand that the bark, which is at the base 14 inches thick, is to to be taken off in sections to the height of 20 feet, and sent to the World's Fair in the city of New York."—*New York Tribune.*

CLIMATE AND SOIL OF OREGON.

The following extract from a letter written by a lieutenant in the 4th Infantry, United States Army, stationed at Columbia barracks, Oregon Territory, dated on the 4th of March last, cannot but interest our readers:—

"This is certainly the most delightful climate in the world; never cold in winter, and the heat of summer never oppressive, with very few exceptions, perhaps one year in six. The cattle of all kinds find plenty of grass to keep fat upon the entire year; the last thing a farmer thinks of is making provisions for feeding his cattle in winter. The soil is remarkably rich and yields enormously—fifty bushels of wheat, or four hundred bushels of potatoes, per acre; for the former they get $6, and for the latter $2 per bushel; so you see farming is a lucrative business. The country is remarkably adapted to grazing, from the fact stock seldom requires to be fed. Sheep do not thrive so well in the immediate vicinity of this place; but nearly all that section of the country washed by the waters of Puget Sound and its tributaries is represented as being a very fine sheep growing part of Oregon. The emigrants are turning their attention to that portion of the country; many that came over last fall and have not yet located themselves, are waiting an opportunity to go there and settle."

SAW MILLS.

The old method of making boards and plank was to split up the logs with wedges, and then shape and smooth them with the axe. A great improvement upon this method was to saw the logs with a hand saw driven by two men,—the same method now in use in some ship-yards, to saw particular boards and planks. The log to be sawed is placed upon "ways," or stagings, erected over "pits," or trenches in the ground. The saw used is about the length of the cross-cut saw, the plate straight on either edge, wider at one end than at the other, and a stationary handle at the wide end composed of a round piece of wood some foot and a half or two feet in length, an inch and a half in diameter, and placed at right angles to the plate. The narrow end of the saw has a handle to be "shipped or unshipped," at will, so that the saw can be drawn, or thrust through the saw-kerf, at pleasure. In using this saw, one man stands upon the log with the stationary handle in his hands, while his assistant stands in the "pit," or trench,—and in this position they ply the saw up and down, making slow progress through the log.

In this manner, boards and plank were sawed almost universally in Europe, as late as 1500, and few were known in France even, for half a century after that date. As late as 1555, an intelligent Englishman travelling in France, saw a saw-mill for the first time in his life, and described it as a very great curiosity. More than a hundred years subsequently, in 1663, a venturous Dutchman introduced the first saw-mill into England, but an infuriated mob of "sawyers," and their friends, broke up the mill, and forced the Dutchman to flee the country.

Saw-mills were introduced into the English colonies, however, at an earlier date. As early as 1633 one was set up at Newichewannock, now Berwick in Maine, by Ambrose Gibbin, the Agent of Mason & Gorges. This was the first mill erected in Maine, now boasting more saw-mills, and of nicer make, than any other country. But in England, they still *see-sawed* on in the old way, and in 1753, twenty years after a saw-mill had been built up here in the wilderness in what is now old Derryfield, there was not a saw-mill in England. In that year an extensive timber-merchant erected one in England, but the infuriated populace tore it in pieces. In fact, such is the prejudice in England against the introduction of labor-saving machinery, that saw mills were not generally introduced into that country, until about the commencement of the present century. And even now, in many of the lumber yards in England, their deals from American and Northern lumber are sawed by hand.—*Farmer's Monthly Visitor N. H.*

PERSEVERANCE AND GENIUS.

Perseverance is the distinguishing characteristic of great men. Do you ask for instances? The page of history abounds with them. Read the life of Demosthenes, and ask yourself what it was that made the poor, stuttering son of a cutler, become the most famous orator of ancient times. Read the life of Virgil, and then say what it was that made him—the son of a baker—the most celebrated of Latin poets. Read the life of Æsop, and consider how it was that he, who was the son of a slave, and also a slave himself, managed to acquire so imperishable a fame. Read the life of Thomas Wolsey—son of a butcher—Cardinal of the church of Rome, and, next to the King, in his day the most powerful person in the English dominions. Read the life of William Shakspeare, also the son of a butcher, and one of the most famous poets the world has everbeheld. Read the life of Oliver Cromwell, a man who rose from a comparatively humble station to be the Protector of the English Commonwealth, and who was assuredly the greatest man that ever ruled the destinies of this empire. Read the life of Benjamin Franklin, who, in his early days, was a journeyman printer, but afterwards one of the most celebrated of American philosophers and statesmen. Read the life of William Gifford, the editor of the *Quarterly Review* in after times, but in his youth an humble shoemaker's apprentice, and for want of paper was obliged to work his algebraic problems on leather with an awl. Read the life of Robert Burns, a ploughman of Ayrshire, in Scotland, but perhaps the greatest of Scotch poets. Read the lives of Allan Ramsay and James Hogg, both of whom were sons of agricultural laborers, but who, as poets, were bright ornaments of the land of Robert Burns. Read the life of James Cook, who for a long time was nothing but a common sailor, but who afterwards, on voyages of discovery, sailed three times round the world. Read the life of Jeremy Taylor, who was a barber's boy, and afterwards a D.D. Read the life of Thomas Talford, the great civil engineer, who was once a shepherd's boy. Read the life of Inigo Jones, who was first a journeyman carpenter, and then the chief architect of his age. Read the life of Halley the astronomer, and son of a poor soapboiler. Read the life of Huay the chemist, the son of a poor weaver. Read the lives of Smeaton and Rennie, both eminent engineers, and both of them at one time merely makers of mathematical instruments. And when you have read all these, ask yourself whether perseverance had not as much to do in making those great men as any other quality which they possessed.—*Working Man's Friend.*

WINTER THE TIME TO THINK.

Winter is the time for farmers to *think*—spring, summer, and fall, to work; and the three latter season's labour will be to little profit, if the time of the first shall have been misspent. All the plans of the next season's operations should be laid and well considered during winter. All improvements, all designs for new operations; all the work to be done, should then be considered and prepared for; so that, when the time for work arrives, he will have nothing to do but to "go ahead." Then he has no time to think; but if he has been wise during winter, he will have no need of it. It is a pitiful sight to look at in the spring, when all nature is in an ecstacy of delight, to see a farmer flying about "like a hen with her head cut off," trying to do a thousand things at

once, not knowing which to do first, running here and running there in search of his rusty implements, some of which require repairs, some can't be found, the plowing season passing away, the planting season rapidly advancing, and he not prepared for anything.

HONEST LABOR.

Labor, honest labor, is mighty and beautiful. Activity is the ruling element of life, and its highest relish. Luxuries and conquests are the result of labor, we can imagine nothing without it. The noblest man of eart. is he who puts his hands cheerfully and proudly to honest labor. Labor is a business and ordinance of God. Suspend labor and where is the glory and pomp of earth—the fruit fields and palaces and fashionings of matter for which men strive and war! Let the labor scoffer look around him, look at himself, and learn what are the trophies of toil. From the crown of his head to the sole of his foot, unless he is a Carib, made as the beast, he is the debtor and slave of toil. The labor which he scorns has tracked him into the stature and appearance of man. Where gets he his garmenting and equippage? Let labor answer. Labor which makes music in the mine, and the furrow, and at the forge. O, scorn labor, do you—man who never yet earned a morsel of bread. Labor pities you, proud fool, and laughs you to scorn. You shall pass to dust forgotten, and labor will live on forever glorious in its conquest and monuments. * *

GEOLOGICAL CHANGES.

An English periodical states that Sir Charles Lyell is engaged on a new edition of his Principles, which, among other matters, is to contain the sum of all we know concerning great geological changes. In connection with this subject an interesting point is raised by Alfred Taylor, who contends that the sea level, which is usually taken as the datum in geological and other scientific calculations, is by no means to be considered as permanent. He shows that the solid matters discharged into the sea by rivers would form a deposit three inches in thickness over the bottom in the course of 10,000 years, and consequently raise the level of the water by that amount. The Ganges drains 400,000 square miles, and in 1,751 years would reduce the level of that vast region by one foot. The Mississippi, which drains 1,100,000 miles, carries one foot from the surface of the soil into the sea in 9,000 years. Thus the level of the land will be lowered, while that of the sea is raised; the latter cannot, therefore, be regarded as fixed and permanent in geological calculations.

It is as cheap to raise one ton of hay or clover, as a ton of burdock or pig-weeds.

A cow bought for ten dollars, whose milk just pays her keeping, affords less profit than one at fifty dollars, giving double the value of milk.

It costs no more to raise a hundred bushels of Baldwins than a hundred bushels of cider apples; or ten barrels of Virgalieus or Bartletts than the same quantity of choke pears.

HYBERNATION OF INSECTS.

Towards the close of autumn the whole insect world, particularly the tribes of beetles, is in motion. A general migration takes place; the various species quit their usual haunts and betake themselves in search of secure hybernacula.* Different species, however, do not select precisely the same time for making this change of abode. Thus many lady bugs, field bugs and flies, are found out of their winter quarters even after the commencement of frost; while others make good their retreat long before any severe cold has been felt. The days which they select for retiring to their hybernacula are some of the warmest days of autumn, when they may be seen in great numbers, alighting on the walls, rails, pathways, &c., and running into crevices and cracks, evidently in search of some object very different from those which ordinarily guide their movements.

The site chosen by different perfect insects for their hybernacular is very various. Some are content with insinuating themselves under any large stone, a collection of dead leaves or the moss of the sheltered side of an old wall or bank. Others prefer for a retreat the birchen or ivy-covered interstices of the bark of old trees—the decayed bark itself, especially that near the roots—or bury themselves deep in the rotten trunk; and a very great number penetrate into the earth to the depth of several inches. The aquatic tribes burrow into the mud of their pools. In every instance the selected dormitory is admirably adapted to the constitution, mode of life, and wants of the occupant.

* Winter quarters.

WONDERFUL OX.

The Finest Ox in the World.—An ox, acknowledged by all who have seen him to be the most extraordinary one they have ever heard of, is about to be forwarded to the Smithfield Cattle Show, from Sir H. Verney's of Claydon House. He was bred and fed by the hon. baronet, and is a pure shorthorn. He is rather over five years old, and is supposed to be much heavier than the famous Durham ox, about which so much noise was made at the beginning of the present century, or than the American ox, which some few years since attracted so much notice. He stands nearly 18 hands high, and measures 6ft. 6in. from hip to shoulder, 3ft. across the hips, 9ft. 11in. in girth behind the shoulder, and 12ft. in length from the tip of the nose to the rump, while his depth from chin to brisket exceeds 4ft. 6in. He is exceedingly well made up, particularly along the whole length of his back; and, notwithstanding his great size, presents none of those monstrous fatty excrescences which so generally disfigured the higly-fed beasts, and were so generally condemned a few years since. He has been fed upon grass, cake, and corn; and is supposed by various judges, who have courteously been permitted by Mr. Fraser, Sir H. Verney's steward, to visit him, to weigh upwards of 300 stone. Notwithstanding his great weight, he is exceedingly active, is very tractable, and is a capital feeder; indeed, Mr. Fraser does not hesitate to express his belief that the animal could stand feeding for another year. In color he is a light roan, with white predominating, and is altogether a very handsome quiet beast, with a kind head and docile eye.—*Bucks Chronicle.*

POETRY.

'TIS NOT FINE FEATHERS THAT MAKE FINE BIRDS.

A peacock came, with his plumage gay,
Strutting in regal pride one day,
Where a small bird hung in a gilded cage,
Whose song might a seraph's ear engage;
The bird sung on while the peacock stood,
Vaunting his plumes in the neighborhood;
And the radiant sun seemed not more bright
Than the birds that basked in his golden light;
But the small bird sung in his own sweet words
"'Tis not fine feathers that make fine birds!"

The peacock strutted; a bird so fair
Never before had ventured there.
While the small bird sung at the cottage door,
And what could a people wish for more;
Alas! the bird of the rainbow wing,
He wasn't contented for he tried to sing,
And they who gazed on his beauty bright,
Scared by his screaming took to flight;
While the small bird sung in his own sweet words,
"'Tis not fine feathers that make fine birds!"

Then prithee take warning, maiden fair,
And still of the peacock's fate beware;
Beauty and wealth won't win your way,
Though they're attired in plumage gay,
Something to charm you all must know,
Apart from fine feathers and outward show;
A talent, a grace, a gift of mind
Or else poor beauty is left behind!
While the small birds sing in their own sweet words,
"'Tis not fine feathers that make fine birds!"

SOCIETY.—In the beginning of the world, the common Creator of all vouchsafed to the brute herd only the principle of vitality; to us he gave souls also, that an instinct of affection, reciprocally shared, might urge us to seek for, and to give, assistance; to unite in one people, those before widely scattered; to emerge from the ancient wood, and abandon the forests where our fathers dwelt; to build houses, to join another's dwelling to our own homes; that the confidence mutually engendered by a neighbour's threshold might add security to our slumbers; to cover with our arms a fellowcitizen when fallen or staggering from a ghastly wound; to sound the battle signal from a common clarion; to be defended by the same ramparts, and closed in by the key of a common portal.

THINGS WONDERFUL AND TRUE.—With a very near approach to truth, the human family inhabiting the earth is estimated at 700,000,000, the annual loss by death 18,000,000. Now, the weight of animal matter of this immense body cast into the grave is no less than 635,000 tons, and by its decomposition produces 3,000 000 000 000 cubic feet of gaseous matter. The vegetable productions of the earth clear away from the atmosphere the gases thus generated, decomposing and assimilating them for their own increase. This cycle of change has been going on ever since man became an occupier of the earth. He feeds on the lower animals and the seed of plants, which, in due time, become a part of himself. The lower animals feed upon the herbs and grasses, which, in their turn, become the animal; then, by its death, again passes into the atmosphere, and is ready once more to be assimilated by plants the earth or bony substance alone remaining sufficiently deep in soil to be out of the absorbent reach of the roots of plants and herbs. It is not at all difficult to prove that the elements of which the living bodies of the present generation are composed, have passed through millions of mutations, and formed parts of all kinds of animals and vegetable bodies, and consequently it may be said that fractions of the elements of our ancestors form portions of ourselves.—*Working Man's Friend.*

Will you have the gold, or the man? Why, have the man. What boots the gold?

TO CORRESPONDENTS.

A. H. F., Woodstock.—Communication received too late for insertion this number; will appear in our next.

TORONTO RETAIL MARKETS.

January 2, 1854.

Flour—Millers' extra superfine, per barrel	0	0	a	32	6
do Superfine do	0	0	a	31	3
Farmers', per 196 lbs	27	6	a	28	9
Wheat—Fall per bushel, 60 lbs	6	0	a	6	3
Spring, per bushel, 60 lbs	0	0	a	0	0
Oatmeal, per barrel	0	0	a	35	0
Rye, per bushel, 56 lbs	4	0	a	4	3
Barley, per bushel, 48 lbs	2	9	a	3	6
Oats, per bushel 34 lbs	2	6	a	3	0
Peas, per bushel	2	6	a	4	0
Potatoes, per bushel	2	9	a	3	4
Apples, per bushel	1	6	a	2	6
Grass Seed, per bushel, 48 lbs	7	5	a	0	0
Clover Seed, per bushel	27	6	a	28	6
Hay, per ton	60	0	a	75	0
Straw, per ton	50	0	a	60	0
Onions, per bushel	5	0	a	7	6
Butter—Tub, per lb	0	8	a	0	9
Fresh, per lb	0	10	a	1	0
Lard, per lb	0	6	a	0	7½
Turkies, each	2	6	a	3	6
Geese, each	2	9	a	3	3
Ducks, per couple	1	6	a	1	9
Fowls, per pair	1	0	a	1	6
Cheese, per lb	0	5	a	0	6
Pork, per 100 lbs	22	6	a	25	0
Fresh, per lb	0	0	a	0	5
Beef, per 100 lbs	22	6	a	27	6
Beef, per lb	0	3	a	0	9
Hams, per 100 lbs	45	0	a	50	0
Bacon, per 100 lbs	35	0	a	40	0
Wool, per lb	1	2	a	1	7
Sheepskins, fresh slaughtered	5	0	a	5	8
Calf-skins, fresh, per lb	0	0	a	0	6
Hides, per 100 lbs	22	6	a	25	0
Eggs, per dozen	1	0	a	1	3
Veal, per lb. by the quarter	0	3	a	0	4½
Mutton per lb, by the quarter	0	3	a	0	5
Coal, per ton	37	6	a	40	0
Firewood, per Cord	20	0	a	22	6

The quotations for flour are retail prices. The outside quotations for beef, are for choice Christmas pieces.

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