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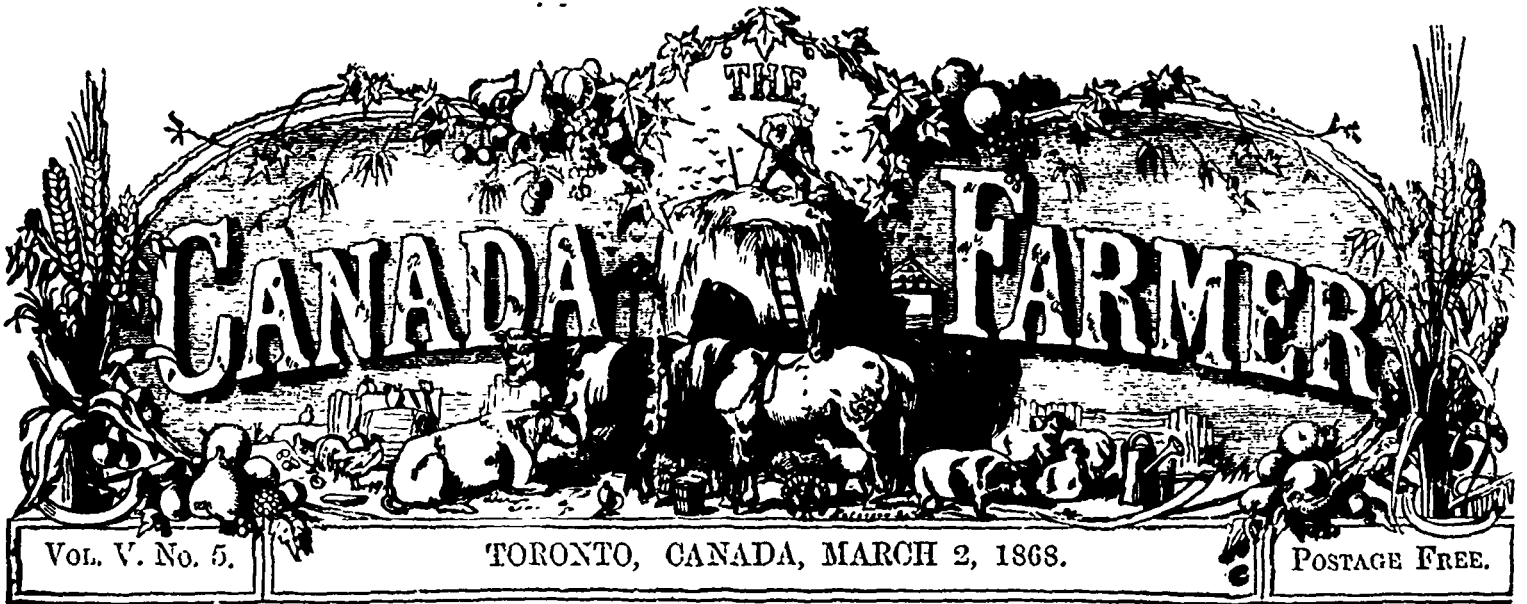
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Vol. V. No. 5.

TORONTO, CANADA, MARCH 2, 1868.

POSTAGE FREE.

The Month.



ARCH, with his lungs full of wind, blows the trumpet of the year as the herald of spring. He is a blustering month, who, though he may sometimes commence his career in disguise, is sure to reveal his true character before we have done with him. Hence the proverb, that if March comes in like a lamb it will go out like a lion. The sprightly writer whom we quoted in our last article on "The Month," as representing January and February in the character of a venerable couple with snow-white hair, speaks of March as "some shrew of a maid, following up the old people with a tremendous clatter of brooms and great clouds of dust."

The rigour of winter sensibly abates during this month, as experience testifies and the meteorological tables demonstrate. We append the mean temperature of March at the points enumerated in our last, with regard to January and February.

Stratford	25°51
Hamilton	29°14
Barrie	33°02
Toronto	27°60
Belleville.....	28°35
Montreal.....	26°16
Quebec	21°00
St. John, N.B.....	26°31
Halifax.....	29°00

Dr. Holmes tells us that the good people living in that extreme "down East" point, the State of Maine, are wont to talk about having six weeks' sleighing in

March, but he says: "we in Massachusetts do not expect more than a month's sleighing in March,—in fact, not so much as that." The Maine style of comment on the month indicates continued plenty of snow, along with a milder temperature and greater length of day. Maine has undoubtedly a less hospitable climate than Western Canada, for we do not have any more sleighing in March here than they do in Massachusetts, judging by the above quotation. Our Yankee neighbours are hard to persuade that Canada is as good a country as New England. They generally look upon it as a very arctic region, a wilderness of ice and snow far inferior to the Eastern States. But we presume that our Province of Quebec is, on the average, quite equal to Maine, while Ontario in its easterly section is the counterpart of New England in general, and in its westerly section very like New York.

It would be very interesting in itself, and would help to form a basis of comparison, if parties with a taste for natural science would observe the indications in the vegetable and animal creation of winter changing into spring in our climate. Some observations of this kind have been made by New England naturalists, and there can be little doubt that careful investigation would show considerable similarity, if not identity in some respects, between the two countries. Miss Cooper says: "Towards the close of February or the beginning of March, the skunk cabbage (*symplocarpus*) makes a good guess at the time of the year, and comes up in marshy spots, on the banks of ponds and streams." She considers that this is the first plant to feel the influence of the changing season. The little chickweed has flowered at Rochester on the 21st of March. "Near the end of this month, the alders throw out their tassels of purple and gold, which are soon followed by the crimson corymbs of the soft maple, the small brown flowers of the elms, and the yellow plumes of the willows." President Hill, of Harvard College, says: "The earliest wild flower that I remember is the witch-hazel, blooming at any time from October to March, when the weather is mild; at least I have seen it near Newton Centre, blooming as late as February, sending through me a strange thrill of pleasure, and yet making me doubt whether to consider the mild February day a part of a late autumn, or of an early spring." Dr. Holmes tells us that "as early as the first of March ground squirrels peep out of their holes, and bluebirds have sometimes shown themselves. Robins make their appearance all the way from the first week in March to the first week in April. Some of them linger with us on winter half-pay through the cold season." Thus remarkably does vegetable and animal life feel and manifest the effect of coming spring, even while winter lingers with little short of its full severity.

Go to these humble monitors, farmer; consider their ways, and be wise. Prepare in earnest for the

short but precious term of spring, whose approaching footfalls make echoes that waken plant, animal and bird, and ought thoroughly to arouse thee. Put the tools in perfect order, see that the waggens and other vehicles are well greased, and let the ploughs be ready to start so soon as the frost will let them. Secure everything likely to suffer from high winds. Care well for working oxen and horses as the trying time of hard work comes on. If possible, use them regularly, and toughen them for the approaching ordeal. House breeding ewes that are to drop lambs early, and take especial care of cows that are soon to calve, supplying them with a liberal portion of roots in addition to other hearty food; clean out cellars in good time to prevent decay of vegetation and foul smells. Roll winter grain if the ground be dry enough. Sow clover seed on a light snow some still morning, if the season opens early. Repair fences and sagging gates. Have seed grain in readiness. Clean up grass seed for spring sowing. If you are fortunate enough to own a maple grove, by all means make some sugar, but do it on the most approved modern method, so as to produce a choice article, that you can use with some pleasure, and show to your friends with some pride. Toward the end of this month, those who would have good gardens must begin to think about making hot-beds. Review and finally settle the plans for the season, so as to lose no time in hesitation and suspense when the bustle and rush of spring work shall be upon you.

Turning from the practical to the poetical aspects of the month, we cannot more appropriately close our remarks than by appending the following beautiful lines by William Cullen Bryant:—

The stormy March is come at last,
With wind and cloud and changing skies;
I hear the rustling of the blast
That thrum through the valley flies.

Ah, passing few are they who speak
Wild stormy month, in praise of thee!
Yet, though thy winds are loud and bleak,
Thou art a welcome month to me.

For thou to northern lands again
The glad and glorious sun dost bring,
And thou hast join'd the gentler train,
And wear'st the gentle name of Spring.

And in thy reign of blast and storm
Smiles many a long bright sunny day,
When the changed winds are soft and warm,
And heaven puts on the blue of May.

Then sing aloud the gushing rills,
And the full springs from frost set free,
That, brightly leaping down the hills,
Are first sent out to meet the sea.

The year's departing beauty hides
Of wintry storms the sullen threat;
And in thy sternest power abides
A look of kindly promise yet.

Thou bring'st the hope of those calm skies,
And that soft time of sunny showers,
When the wide bloom on earth that lies
Reveals of a brighter world than ours.

The Field.

Turnips for Manure.

To the Editor of THE CANADA FARMER :

SIR,—Having read with a great deal of interest the two articles by "Vectis" in your issues of November 1st and December 2nd, headed respectively "Cultivation of Turnips and other Roots," and "A new use for a Turnip crop," and as both yourself and the writer invite comment and criticism, I will venture to say a little on the subject. On a farm of eighty acres of cleared land, "Vectis" would have one-fourth, or twenty acres, in each of the following crops, viz.: turnips, barley, clover and wheat. Now, in the first place, such a farm would require two teams to work it on this principle. Well, I presume the twenty acres of clover he would cut for hay; if so, where is the pasture to come from? Or, perhaps, he does not calculate to keep any stock, not even a milk cow; or perhaps he would pasture ten acres of clover, which would keep four cows, in addition to the teams. Well, then, he would plough down twenty acres of turnips to enrich the land, and these, after all the expense and trouble in raising them, would be very dear manure. I think if the farmers find a difficulty in raising six acres and drawing them home and feeding them, and then drawing the manure from the barnyard to the land, they would find it still worse to pull and cut up on the ground twenty acres. Moreover, with his four cows and two teams, he would have the straw from twenty acres of wheat and twenty of barley, and twenty tons of clover hay (for if anything of a crop it will average two tons to the acre in Canada) to be worked up into manure for the next turnip crop. Any practical farmer will say that rotten straw, without roots or grain feeding, is miserable stuff, and will not be likely to hurt his eyesight with the ammonia from it in turning it over. Granting it was practicable to grow twenty acres of turnips on a farm of eighty acres of wild land: if sown early, and yielding a good average crop, they would fatten from 200 to 240 sheep, to commence folding by the middle of September, and with no more trouble than pulling and cutting them up according to the plan of "Vectis." They would surely net one dollar per head profit, towards paying rent for land, wages for labour, &c. and I believe leave the land in as good condition for the next crop as ploughing the turnips under. Some people think it is scarcely practicable to fold off the turnips in this country; but it only wants the proper appliances, such as sheep nets, &c., to fold off both roots and other crops, from May to December, and even later through a good part of the winter, as I will proceed to explain. Suppose we take ten acres, for example, and when pulling them up in the fall, commence at one corner of the field, and put twenty bushels in a pit on every four square rods of land throughout the field, and draw the remainder to the homestead, to be used there. Then, make tight hurdles of lumber, each hurdle one rod long and five feet high. Sixteen of these would enclose four rods, and would form a pen sufficient to hold 100 sheep one day and night. Then form a second pen of the same materials and dimensions, so that the pen that was used to-day could be moved to-morrow, one half of each pen to be covered with oil cloth or tarpaulin, to protect the sheep from storms. Twenty bushels of turnips would be in each enclosure, and with hay and straw to be drawn from the barn would be sufficient for each day's feed, and in 100 days with 100 sheep would manure the land for the barley. Some may think this a wild idea, but I venture to say that it is better feed and treatment than the bulk of Canadian sheep get, besides returning to the land what the turnips have taken from it. In my experience of growing turnips, with the exception of cleaning the land, I find they leave it in very poor condition for the next grain crop; and with regard to

keeping sheep, they are not to be compared to cattle for manure-makers in the barnyard; and unless we either adopt the folding system, or also use some artificial manure, such as bones, &c., for the barley crop, we could not follow the four course system in this country with profit. I cannot agree with "Vectis" that raising wheat or other corresponding cereals must be the special aim of Canadian farming. If he will examine our list of exports he will find such articles as wool, mutton, beef, pork, butter, cheese, &c.; and when wheat comes down below sixty shillings per quarter in England, there are very poor prices in Canada. I would likewise remind him of the old country farmers' adage, that it is better for the produce of a farm to walk off on four legs than to be drawn off on four wheels. For several years past I have followed the four course system above mentioned, on one hundred acres, eighty of which are cleared. In each year I have had ten acres of wheat, ten of barley, ten of turnips, ten of clover, and the remaining forty in pasture, on which I have kept one hundred ewes, one pair of working horses, and from twelve to twenty head of cattle, and have found little difficulty in providing for them all the year round. I have never folded my sheep on the turnips, from want of sheep nets. And here let me call the attention of our flax and hemp manufacturers to the want of such articles as sheep nets and oil cloth or tarpaulin, which ought to be found on every farm, especially oil cloths, to be used in haying and harvest for covering stacks, &c.

I have sometimes left a lot of turnips on the field for the sheep to eat, and next year's crop would show, generally on the highest and poorest knoll in the field, the good effects of it. My barley generally averages thirty bushels to the acre, and the wheat from fifteen to twenty-five, according to whether I mow the clover, once or twice in the season, or whether it is spring or fall wheat, and it is seldom that the clover is less than two tons to the acre. In the years 1865 and 1866, I sold wool to the value of \$245, and sheep, lambs and beef, to the value of \$200 more, in each year, and I would like "Vectis" to consider how much wheat would have to be raised, and the extra toil and labour entailed in marketing alone, to obtain the same amount of money. One hundred acres of land, if properly managed, will keep one hundred sheep, or twenty milk cows for dairy purposes, and one pair of horses, (and the same amount of feed that keeps an extra pair of horses will winter ten calves), which with wool, mutton, beef, butter, and cheese, at the present prices, will more than equal wheat-raising on the plan of "Vectis," which after all is nothing more than a manured summer fallow—a plan which, if it be the best for raising grain, would, if strictly followed, soon place us in the pitiful condition of importing everything we wear, down to the soles of our boots. With regard to rotten turnips, I have very little faith in them. Once or twice I have had the misfortune to lose a pit of one hundred to one hundred and fifty bushels, from over heating. The rotten refuse, in these instances, was spread around, and the effect on the following crop was scarcely perceptible; whereas I have driven the sheep to the pits, and fed them with turnips on the field, and next year's crop would show the effects of it. Again, if ploughing in one or two crops of buckwheat will, on such land as Long Point, or Lake Erie shore, make such a difference in the yield of wheat, we should be very foolish to spend time and money in raising turnips for the same purpose. It is a wonder that Lord Townsend or Mr. Coke, of Norfolk, never entertained the brilliant idea of ploughing in turnips instead of eating them off with sheep on the blowing sands of Norfolk. These gentlemen, however, were content to raise wool and mutton, and have been the means of raising that county to the highest state of agricultural eminence. A friend of mine ploughs the worst piece of land he has in the fall, then early next spring sows with oats, which he turns his cattle on, when his pastures begin to fail, about the latter part of June, and which they eat and tramp over. He then ploughs it up twice through the season, and has never failed yet in raising twenty-five to thirty bushels of spring wheat per acre. An improvement may still be made on the four course system. Instead of sowing down with clover alone, sow with mixed grass seed for mowing and pasture, and let it lie for two or three years, then plough up the oldest

piece of pasture in the fall. This should be sown with rye, which by the middle of May next will be fit to eat off. Then turn on the sheep, and when they have gone over it, plough up and sow with oats and vetches, or rape, to be folded off with sheep, and finally ploughed up for wheat, either fall or spring, whichever may be deemed most suitable.

This, in my opinion, is a better plan than "Vectis" proposes, but I leave my brother farmers to decide. In my twenty years' experience of farming in Canada, I have heard a great deal of croaking about the land deteriorating; but if it does, it is from bad management. I have cleared my farm from the forest, and, even now, raise as much grain, grass, or roots, if not more, than when it was covered with stumps and stones; and if I had my choice between a new and one of the oldest worn-out farms, I would choose the latter. It is not grain-raising alone that will raise Canada in the scale of nations, but a varied system of agriculture, coupled with manufactures of various kinds, and a population to consume our produce at home.

FARMER.

Lake Side, Co. Oxford, Ontario.

Farm Notes and Experience.

The following is the substance of reports from intelligent farmers in different parts of the country in reference especially to last year's crops:

Mr. Richard Peet, of West Williams, says:—"Our fall wheat this year has been a complete failure. I had eighty acres which promised for twenty to twenty-five bushels per acre, and looked well; we threshed only between three and four bushels per acre; the ravage was caused by the midge and weevil. There was a great amount of small and imperfect grain, quite unfit for anything. We must make some change. Some years ago, if we scratched in the wheat any low, we were sure of from thirty to forty bushels per acre; but now, even on new land, we get but very trifling results. My land was well fallowed and prepared for wheat, and every pains taken to put it in in the best manner, but the result is, failure. All our land has been failing for years past, and the whole Township this year will not average five bushels per acre; we cannot account for it. On many of the lands where wheat has followed wheat for years, it is easy to account for failure; but now the first crop on new land fails as often as the best prepared old land, and that whether there is midge and weevil or not." He is determined to try ploughing in green crops.

Mr. John S. Walker, of Glencoe, a very intelligent and superior person, states that the land around Glencoe and Mosa is a loamy clay,—does not glaze after the plough, even in wet weather; it is strong land, and has produced this last year thirty-two bushels of midge-proof wheat, per acre. They appear to have only the old variety. Where they have sowed Soules' wheat the midge has destroyed it. The above crop was produced on pea ground, without manure. They consider their best land the clay, black ash and elm swamps, but it takes a long time to get them into cultivation. If they can put such land into a crop of wheat when it is cleared at first, they do so; but if it is grassy, or so wet that it will not bear wheat, they lay it at once down to grass, and leave it so until they get the stumps out. All the stumps will come out in about ten years, but they generally begin to cultivate at from six to seven years, although it is not the best way, as the stump ground harbors so much rubbish and weeds. They consider it much better to leave it till they can get the stumps fully out; they trust more to summer fallow than manure. They have some excellent Durham cattle, but prefer grade Durhams, as they are hardier and more fit for farmer's service. They think the pure Durhams make greasy butter.

Mr. James Leatherland, of McKillop, has sixty acres improved. We ask him the particulars of his land. He says the soil is good; is a brown clay that crumbles before the plough, and never glazes; that there is some trouble to keep the plough clean. There is a small quantity of limestone gravel through the soil, but not much; has dug a well, and finds the soil the same for nearly sixteen feet before he comes to

the stratum of limestone gravel containing water: has never been able to get a second crop of wheat, nor have any of his neighbors. The first crop has always shown well, either frost or something else has prevented the maturing of the grain. Last year he got a forest cultivator, and put a piece of new land into fall wheat; he got an enormous crop of straw, but no grain. The crop came just into the wet harvest, and was destroyed; but on asking him about the cultivator, he says, that if he had, at any time, ten acres of new land to put in, he would buy a new cultivator for the purpose, rather than put in the crop without: finds the land dreadfully overrun with Canada thistles, on account of being obliged to put in some sort of a crop amongst the stumps, but gets rid of them where they can lay down the land to clover after the first crop, until the stumps rot out. When they have cultivated the land after the first crop they have always got good crops of oats and peas—indeed the latter have grown too grossly for good yield; has been on the place six years, and has no doubt of the goodness of the soil, when once it can be cultivated, but says that a second crop of wheat on the new land is hopeless; this year had his potatoes cut off and some of them killed by frost in August—his neighbors the same as his own.

Alsike Clover.

To the Editor of THE CANADA FARMER:

Sir,—Allow me, through the columns of your valuable paper, to advise my bee-keeping friends who are farmers to cultivate the Alsike clover. For while it is, for pasturing or hay purposes, decidedly preferable to red clover, it fully equals it in the secretion of honey, and far surpasses the white. Its cultivation would, therefore, greatly increase the forage for bees, which is very desirable. I have ever contended that no plant can be cultivated with profit for bee pasturage alone—that bee-keeping is profitable from the fact that bees gather what otherwise would run to waste; yet the bee-keeper may often cultivate a crop that, while it proves remunerative as such, will, at the same time, increase the pasturage for his bees.

Perhaps nothing will better meet the wants of the bee-keeper in this respect than the Alsike clover. Not only so, but the farmer who does not keep bees would find it to his advantage to sow Alsike clover instead of red clover, as will be seen from the following account of the experience of the Shaker family, near Albany, New York, furnished to the *Country Gentleman* by Mr. Chauncy Miller, a member of that family.

"We find the Alsike clover a very superior grass in the following points:—

1. For its value as a hay crop on a great variety of soils, being of a growth, in height, varying according to quality of soil from ten inches to two-and-a-half feet, and yielding from one-and-a-half to three tons per acre; thus comparing with our best red clovers.

2. For fineness of stalk or haulm.

3. For its multitude of sweet flowers, blooming perhaps three or four times as much as red clover, making, when in bloom, literally a 'sea of flowers.'

4. Its adaptation to heavy soils, clays or heavy clay loams, as well as sandy soils, not being so liable to heave out by frosts in winter and spring as red clover, on account of the root being more fibrous, partaking somewhat of the character of the white clover.

5. To all farmers who keep bees largely, the crop would be of great value, for bees can work upon the flowers equally as well as upon white clover, the blossoms being about the same size, and precisely of the same habit as the latter, but much more abundant in honey; bees are as fond of the flowers as of mignonette, and, in its season of flowering, which lasts about six weeks, are continually upon it, from dewy morn until dusky eve.

6. To those farmers raising clover seed for market, the Alsike clover, in our opinion, would be of great value, as it seeds enormously, and the seed threshes easily, by flail or machine, leaving a beautiful quality of hay, the stalks retaining their greenness when most of the seed is quite ripe."

According to the above, it would be advisable for farmers to cultivate it whether they keep bees or not. That the above is not overdrawn is fully proved by those who have tried it in Canada. It will be seen by referring to THE CANADA FARMER, Vol. 4, page 243, that H. M. Thomas, of Brooklin, Ontario, had it

grown to a much greater height than that mentioned in the above extract, in places measuring four-and-a-half ft. It is abundant in seed, yielding from five to eight bushels to the acre; after threshing, the haulm is equally as good, and is by many considered better for cows than red clover hay. In this county (Ontario) many able and intelligent farmers are ordering seed from H. M. Thomas, of Brooklin, being well satisfied from his success that it is, for all purposes, superior to red clover. So great is the demand in the United States, that the seed is retailing at \$1.50 per pound, at the Rochester seed store, though I believe, with us, it sells at 30 cents a pound, or \$15 a bushel.

J. H. THOMAS.

Brooklin, Ont.

Tobacco.

A "SUBSCRIBER" from Augusta, under date Feb. 5th, writes:—"Can you, or some of your correspondents, answer the following queries?—Will Tobacco grow in Canada? If so, what varieties are best? How should it be planted, and at what time? What is the best mode of harvesting and drying? Where can the raw material be sold? What is the average yield per acre, and probable price per pound? Where can seed be had? Will it pay?"

There are but few places in Canada where the summer season is long enough or hot enough for the successful cultivation of this "weed" on a large scale; and, from a commercial point of view, we could scarcely recommend its growth as a branch of Canadian farming. On still higher grounds we should do all in our power to discourage such an enterprise. God Almighty, for some inscrutable reason which eludes our search as much as the origin of evil, has seen fit to sow the world sparingly with noxious herbs, as he has found place in animate nature for tigers and vermin; but that is no reason why man should diligently cultivate or propagate them. Some of these poisons have their use in medicine, though even here they are often of questionable benefit; but most assuredly they were never intended to become articles of daily and hourly consumption. We believe the use of tobacco, in any shape, is deleterious to the health of the individual, and will eventually deteriorate the race. All, however, do not agree with us on this subject, and for the information of such as find themselves able, with a clear conscience, to grow and use the plant, we subjoin the following replies to the queries of our correspondent, so far as we are able to furnish them:

Tobacco is grown, though not very extensively, in some places in Canada; it may be tried, we suppose, where Indian corn will ripen well. The best variety for this climate would probably be what is denominated "Little Frederick," as this kind, though small, matures early. It is necessary, we believe, with us, to raise the plants in hot-beds, and as soon as there is no danger from frost, to plant them out in the field in hills three feet apart. The after cultivation consists in keeping the land clean and light with occasional stirring. As soon as the plants are a little over a foot high they should be topped; that is, the terminal bud should be nipped off. The lower leaves should also be removed, leaving about eight leaves to mature. All suckers and lateral shoots should be removed as soon as they appear. Harvesting should commence when the leaves begin to change in color and become spotted. The stalks are split with a knife nearly as far as the lowest leaf, and then cut off below this, then inverted and left standing on the ground for a short time; they are then collected in small piles, and left to dry for a short time longer, after which they are taken to the barn or drying house, the stalks suspended by means of the split portion across sticks, and these again are laid across poles in the drying house, which should be tight. The drying is effected in some cases by means of fires, and in others by fires on the ground underneath the rows of tobacco.

With regard to market, there are dealers who will readily take it in all our chief cities. The average yield, per acre, may be set down at about 700 or 800 lbs. The price varies; during the last year buyers here have been giving from three to five cents per pound. There is at present an upward tendency in the market. Seed can be procured pro-

bably through our own seedmen; or application may be made direct to United States dealers, among whom we may mention the following:—W. A. Hoppe, Richmond, Virginia; James B. Casey, Cincinnati, Ohio; Reynolds & Co., 9th Street Tobacco Warehouse, Louisville, Kentucky. As to its paying in Canada, we doubt it.

SUPERPHOSPHATE OF LIME AND BONE DUST.—A subscriber from Oakville enquires if we have any experience of Lamb's Superphosphate, and how it would compare with bone dust; also, what quantity of either should be used for spring wheat. We have used both these manures for turnips, as prepared by Mr. Lamb, and have found them satisfactory. We prefer the superphosphate as giving a much quicker return, being more soluble, and showing its efficacy in the first crop. The quantity required must depend upon the condition of the land—about 100 lbs. of superphosphate to the acre may be set down as an average; and from four to six bushels of bone dust.

WEARING OUT THE LAND.—The editor of the *Monthly Report of the Department of Agriculture at Washington* has been on a tour of inspection through the wheat growing regions of the West. His observations there lead him to the conclusion that the manner of wheat cultivation in that section is wrong, and must soon prove ruinous to the farmers who practise it. By the course of cropping pursued the yield per acre has dwindled down from twenty-five to thirty bushels to an average of twelve or fourteen, and is yearly diminishing. To arrest this downward tendency it is proposed to diversify the crops more, thus giving the soil a chance to recuperate while supplying a greater variety of products. In such cases, however, more than change of crops will be found necessary. The land must be enriched, and the elements of fertility restored to it.

BET SUGAR IN GERMANY.—A German agricultural journal gives an interesting account of the beet sugar business in that country. Fields of beets of from two to three hundred acres are often seen there. The beets are drilled in rows about fifteen inches apart, and the whole labor of cultivation is performed by the hoe. The women and men work in gangs of twenty or more. The men get from sixteen to nineteen cents per day, and the women from thirteen to fifteen—working fourteen hours. The manufactories for this sugar are on a correspondingly large scale, some of them employing a thousand hands. The beets are brought from the field and elevated to the upper story of a high building, where they are cleaned, crushed and filtered, the juice descending from story to story, undergoing a refining process by the way till it reaches the lower one in the shape of a sugar cone two and a half feet in length. It is a very nice article, and worth at the factory about ten cents per pound. It takes eight days from the time of crushing the beets till the sugar is dried sufficiently for market. One of these establishments turned out six millions of pounds last year with the help of six hundred hands. *New England Farmer.*

LEACHY SOILS.—A. P. Miller, from Norwich, writes:—"I have frequently heard farmers speak of a certain kind of soil as being 'Leachy,' that is, that manure leached down through it, so that it could not be kept productive without being continually manured. What do you think of the matter? Will manure escape through the soil or not?"

ANS.—It is one of the peculiarities of humus or mould to absorb all true manurial matters, attracting them by a sort of chemical filtration from liquids holding them in solution as they pass through. Hence there is no better deodorizer or disinfectant than dry earth. Nevertheless, there are some soils possessing very little humus, and composed chiefly of sand and gravel. Through such soils, no doubt, manure will drain away. The present Earl of Leicester, many years ago, before he had come to the title, converted many acres of such land on his estate in Norfolk, at great expense, it is true, into excellent and productive land, by adding clay, and using a machine invented by himself for pressing the soil together, and rendering it more compact. Such costly remedies may not be practicable here, but something may be done in these cases, by turning in clover to increase the retentive top soil, and by such pressing as our ordinary appliances will afford. Rolling will do something; and the combined treading and manuring supplied by feeding sheep on the land is of service.

Canadian Natural History.

The Woodchuck.

(Arctomys monax.)

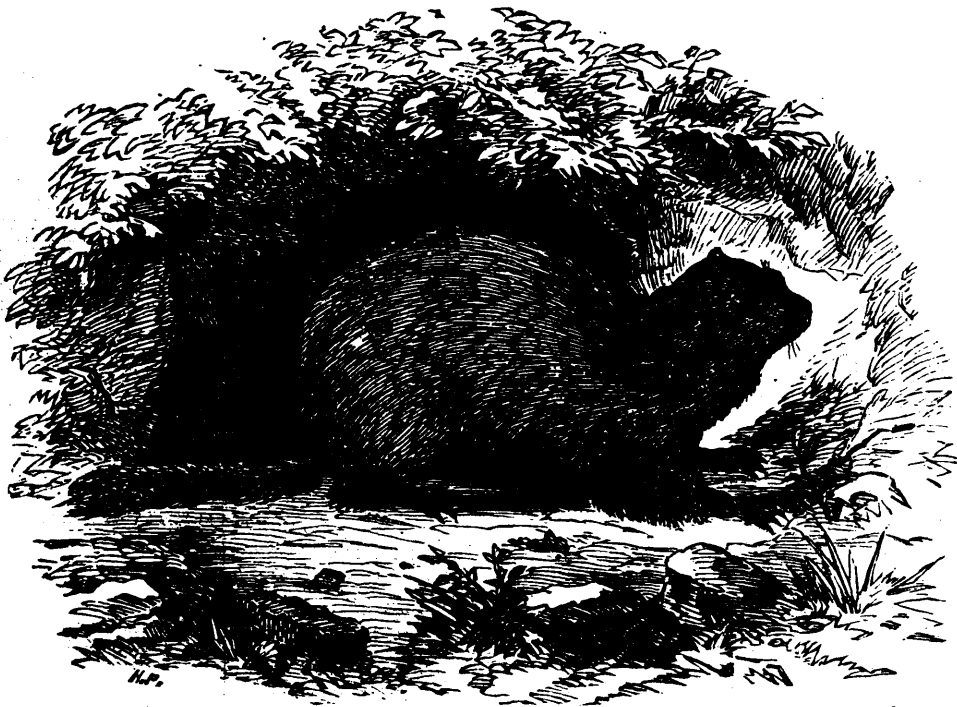
THE Woodchuck, or Ground Hog, is well known in Canada and the United States, in some parts of which it is even more abundant than with us. Those who are familiar with its appearance will recognize the fidelity of the accompanying illustration, which was drawn from a fine specimen in the Toronto University Museum. It belongs to the natural order RODENTIA, or gnawing animals, and is closely allied to the marmots of Europe and other parts of the old world. Its body is stout and rather clumsy in appearance, compared with the agile forms of most of the creatures in the same order. The head is broad, conical, and tapering suddenly to the snout, which is blunt and somewhat truncated. The ears are short, broad, and round, covered with short hairs within and without. Eyes black, of moderate size. It is furnished with numerous whiskers, about two and a half inches long. The toes are well divided and long. The claws are longest on the fore feet, and slightly curved. The thumb is rudimentary, with a small nail. The hind feet are semipalmate, and the claws channelled towards the tip. The tail is somewhat bushy, and expanded or blunt at the extremity. The fur is composed of short wool mixed with coarse hairs, which are longest on the shoulders and shanks. In the head and feet they are short, sub-rigid and depressed. The colour of the fur is subject to variation, though the prevailing hue is a reddish gray, the short fur being dark brown at the base and ferruginous at the tip; through this appear long, stiff hairs, which are black for two-thirds of their length and white at the tip. The summit of the head is a uniform reddish brown; the chin and space around the nose are greyish, while the nose itself is brown.

The average dimensions of the animal are as follows: length of the head four to five inches, body about twelve inches, and tail, including the fur, six or seven inches. The colour of the young is subject to still greater variety than that of the adult animal. The woodchuck is common over a large portion of North America. In some places they appear to select the pine forests for their abode, whilst in others they seem to prefer cleared lands and old pastures. They feed on clover and other succulent vegetables, and are said to be specially fond of field peas. Hence they are in ill repute with most farmers, and notwithstanding their inoffensive disposition, receive little mercy at their hands. The gait of the creature is awkward and slow, but its extreme vigilance and acute sense of hearing prevent its being often captured, though when surprised at a distance from its burrow it falls an easy prey to the most inept hunter. It forms deep and long burrows in the earth, to which it flies upon the least alarm. Sometimes a number of these burrows will be found within a comparatively limited space, as the animal is more frequently social than solitary. The burrows contain large excavations, in which are deposited stores of provisions. It hibernates during the winter, having first carefully closed the entrance to its subterranean retreat. It is said to bring forth four or five young at a litter. It is susceptible of domestication, and is remarkable for its cleanly habits.

A Good Word for the Robin.

THE following extract from Mr. E. A. Samuel's valuable work on the "*Ornithology and Oology of New England*," will, we trust, be the means of retrieving the character of our old friends the much maligned Robins, and save many of them from being murdered in cold blood.

"Perhaps none of our birds are more unpopular with horticulturists than this; and I will here give the observations of different scientific men, and my own, to show that the prejudice against the bird is unjust and unfounded. Mr. Trouvelot, of Medford, Mass., who is engaged in rearing silkworms for the production of silk, is troubled by the Robin to a degree surpassing most other birds. He has a tract of about seven or eight acres enclosed, and mostly covered with netting. He is obliged, in self-defence, to kill the birds which penetrate into the enclosure and destroy the worms. Through the season probably ten robins, for one of all other birds, thus molest him; and of scores of these birds which he has opened and examined, none had any fruit or berries in their stomachs—nothing but insects. It



is to be understood that this was not in a part of the summer when berries were unripe; on the contrary, it was all through the season. His land is surrounded with scrub-oaks and huckle-berry bushes. These latter were loaded with fruit, which was easier of access to the birds than the worms; but none was found in them. He says they came from all quarters to destroy his silkworms, and gave him more trouble than all the other birds together. He said, that in his opinion, if the birds were all killed off, vegetation would be entirely destroyed. To test the destructiveness of these marauders, as he regarded them, he placed on a small scrub oak near his door two thousand of his silk-worms. (These, let me say, resemble, when small, the young caterpillar of the apple-tree moth.) In a very few days they were all eaten by Cat-birds and Robins,—birds closely allied, and of the same habits. This was in the berry season, when an abundance of this kind of food was easily accessible; but they preferred his worms. Why? Because the young of these, as well as of most other birds, must be fed on animal food. Earth-worms assist in the regimen; but how often can birds like the Robin, Cat-bird, Thrush, etc., get these? Any farmer knows, that, when the surface of the ground is dry, they go to the subsoil, out of the reach of birds; and it is not necessary here to say what proportion of the time the ground is very dry through the summer. Cater-

pillars, grubs of various kinds, and insects, therefore, constitute the chief food of these birds; and of these, caterpillars and grubs being the most abundant and most easily caught, furnish, of course, the larger proportion.

In fact, the Thrushes seem designed by nature to rid the surface of the soil of noxious insects, not often pursued by most other birds. The warblers capture the insects that prey on the foliage of the trees; the fly-catchers seize these insects as they fly from the trees; the swallows capture those which have escaped all these; the wood-peckers destroy them when in the larva state in the wood; the Wrens, Nuthatches Titmice and Creepers eat the eggs and young that live on and beneath the bark; but the Thrushes subsist on those that destroy the vegetation on the surface of the earth. They destroy nearly all kinds of grubs, caterpillars and worms that live on the green-sward and cultivated soil, and large quantities of crickets and grass-hoppers before they have become perfect insects. The grubs of locusts, of harvest-flies, and of beetles, which are turned up by the plough or the hoe, and their pupæ when emerging from the soil; apple-worms, when they leave the fruit and crawl about in quest of new shelter; and those subterranean caterpillars, the cutworms, that come out of the earth to take their food;—all these, and many others, are eagerly devoured by the Robin and other Thrushes. The cutworms emerge from the soil during the night to seek for food; and the Robin which is one of the earliest birds to go abroad in the morning, is very diligent at the dawn of day in hunting for these vermin before they have gone back into their retreat. The number of those destructive grubs is immense. 'Whole corn-fields,' says Dr. Harris, 'are sometimes laid waste by them. Cabbage-plants, till they are grown to a considerable size, are very apt to be cut off and destroyed by them. Potato-vines, beans, beets, and va-

rious other culinary plants, suffer in the same way.' The services of the Robins, in destroying these alone, would more than pay for all the fruit they devour. Indeed, during the breeding season, a Robin is seldom seen without having in his mouth one of these caterpillars, or some similar grub, which he designs for his young; and as the Robin often raises three of those broods of young during the year, his species must destroy more of this class of noxious insects than almost all other birds together. In my own gardening experience, I have had my full share of cutworms; and I have always noticed the Robin, Brown Thrush, and Cat-bird busy early in the morning,—almost before other birds are out of their feather-beds—figuratively speaking—catching the vermin and eating them, or carrying them for food to their young."

SNOW BIRD AND SPARROW.—A correspondent sends us some inquiries respecting the Snow Bird, having written evidently before the issue of our Feb. 1, No., and will find the information he seeks in the brief account there given of this interesting and familiar winter visitor. He alludes to an idea prevalent in many parts of the country, that the Snow Bird is only the common Hedge Sparrow in a winter dress. This is clearly an erroneous notion. The Sparrow is nearly allied, and is often found in company with the Snow Bird, but they are perfectly distinct. The variation in the plumage of the Snow Bird at different seasons is comparatively slight.

Stock Department.

On the Food Value of Straw.

An interesting lecture was recently delivered before the Athy Farmers' Club, Ireland, on the composition and feeding value of straw, by Dr. C. A. Cameron. The lecture and subsequent discussion are reported at length in the *Mark Lane Express*, from which we condense the following abstract, believing that though the remarks were originally delivered with reference to the condition of Irish agriculture, they are equally applicable to the circumstances of this country and climate. Dr. Cameron observed that the straws of the cereal and leguminous plants are a striking illustration of the erroneous opinions and practices which prevail amongst agriculturists with respect to particular branches of their calling. The German farmers regard straw as the most valuable constituent of home-made fertilizers, and their leases in general prohibit their selling off the straw produced on their farms. Yet chemical analysis has clearly proved that the manurial value of straw is perfectly insignificant, and that, as a constituent of stable-manure, it is chiefly used as an absorbent of the liquid egesta of the animals whose litter it had formed. As food for stock, straw was at one time regarded by our farmers as almost perfectly in nutritious; some even went so far as to declare that it possessed no nutriment whatever; and even those who used it did so more with the view of correcting the too watery nature of turnips than with the expectation of its being assimilated to the animal body. Within the last few years, however, straw has been largely employed by several of the most intelligent and successful feeders in England, who report so favourably upon it as an economical feeding stuff, that it has risen considerably in the estimation of a large section of the agricultural public. Now, even without adopting the very high opinion which Mechi and Horsfall entertain relative to the nutritive power of straw, I am altogether disposed to disagree with those who affirm that its application should be restricted to manurial purposes. Unless under circumstances where there is an urgent demand for straw as litter, that article should be used as food for stock, for which purpose it will be found, if of good quality, and given in a proper state, a most economical kind of dry fodder—equal, if not superior, to hay, when the prices of both articles are considered. The composition of straw is very different from that of grain. The former contains no starch, but it includes an exceedingly high proportion of woody fibre; the latter is, in great part, composed of starch, and contains but an insignificant amount of woody fibre. Dr. Voelcker, the consulting chemist to the Royal Agricultural Society of England, and Dr. Anderson, chemist to the Highland and Agricultural Society of Scotland, have made a larger number of analyses of the straws of the cereal and leguminous plants, the results of which are of the highest interest to the agriculturist. Many very important conclusions are deducible from the facts recorded in these valuable tables. We learn from them that straw is more valuable when it is cut in the ripe state than when it is permitted to over-ripen, and that green straw contains a far greater amount of nutriment than is found even in the ripe article. It appears also that the least nutritious kind of straw equals the best varieties of turnips in its amount of flesh-forming principles, and greatly exceeds them in its proportion of fat-forming elements. We further learn that in general the different kinds of straw will be found to stand in the following order, the most nutritious occupying the highest, and the least nutritious the lowest place: 1, pea haulm; 2, oat straw; 3, bean straw with the pods; 4, barley straw; 5, wheat straw; 6, bean stalks without the pods.

The following was given as the analysis of an average sample of oat straw:—

Water.....	14.00
Flesh-forming principles—	
a. Soluble in water.....	4.08
b. Insoluble in water.....	2.09
Oil.....	1.84
Sugar, gum, and other fat-forming matters.....	13.79
Woody fibre.....	69.04
Mineral matter.....	4.24

The annexed table shows the constituents of wheat straw cut in various stages of ripeness:—

	No. 1. Green, changing to yellow	No. 2. Ripe.	No. 3. Over- ripe.
Water.....	13.00	13.15	12.14
Flesh-forming principles—			
a. Soluble in water.....	1.25	0.98	0.44
b. Insoluble in water.....	1.29	1.40	1.41
Oil.....	1.22	1.13	1.14
Sugar, gum, and other fat-forming matters.....	4.18	3.04	3.58
Woody fibre.....	75.84	76.17	77.78
Mineral matter (ash).....	3.25	3.19	3.23
	100.00	100.00	100.00

These analyses show that our wheat straw is allowed to over-ripen, by which a very large proportion of its nutritive principles is eliminated and altogether lost, and a considerable part of the remainder converted into an insoluble, and, therefore, less easily digestible state. Nor is there any advantage to the grain gained by allowing it to remain uncut after the upper portion of the stem has changed from a green to a yellowish color; on the contrary, it also loses a portion—often a very considerable one—of its nitrogenous or flesh-forming constituents. It has been clearly proved that wheat cut when green yields a greater amount of grain, and of a better quality, too, than when it is allowed to ripen fully; yet how often do we see fields of wheat in this country allowed to remain unreaped for many days, and even weeks, after the crop has attained to its full development!

As compared with white turnips, the nutritive value of oat straw stands very high; for whilst the former contain but little more than one per cent. of flesh-formers and less than five per cent. of fat-formers, the latter includes about four per cent. of flesh-formers and thirteen per cent. of fat-formers. Again, whilst the amount of woody fibre in turnips is only about three per cent., that substance constitutes no less than sixty per cent. of oat straw. In comparison with hay—taking into consideration the prices of both articles—oat straw also stands high, as will be seen by comparing the following analysis of common meadow hay with that of properly harvested straw:

COMPOSITION OF MEADOW HAY.
(Mean results of 25 analyses.)

Water.....	14.61
Flesh-forming constituents.....	8.44
Residuary and fatty matters.....	43.63
Woody fibre.....	27.18
Mineral matter (ash).....	6.16
	100.00

Woody fibre is as abundant a constituent of the straw of the cereals as starch is of their seeds, and if the two substances were equally digestible, straw would be a very valuable food—superior even to the potato. At one time it was the general belief that woody fibre was incapable of contributing in the slightest degree to the nutrition of animal, but the results of recent investigations prove that it is, to a certain extent, digestible.

A series of experiments were detailed which clearly prove that the straws of the cereals possess a far higher nutritive power than is commonly ascribed to them: that when properly harvested they contain from twenty to forty per cent. of undoubted nutriment; and lastly, that it is highly probable that its so-called indigestible woody fibre is to a great extent assimilable. The composition of cellulose is nearly, if not quite, identical with that of starch, and may, therefore, be assumed to be equal in nutritive power to that substance—that is, it will, if assimilated, be converted into four-tenths of its weight of fat. Now, as cellulose forms from six-tenths to eight-tenths of the weight of straw, it is evident that if the whole of this substance were digestible, straw would be an exceedingly valuable fattening food. When straw in an unprepared state is consumed, there is no doubt but that a large proportion of its cellulose remains unappropriated—nay, more, it is equally certain that the hard, woody fibre protects, by enveloping them, the soluble and easily digestible constituents of the straw from the action of the gastric juice. Dr. Cameron would, therefore, recommend that straw should be either cooked or fermented before being made use of; in either of these states its constituents are far more digestible than when the straw is merely cut, or even when it is reduced to chaff. An excellent mode of treating straw is to reduce it to chaff, subject it to the action of steam, and mix it with roots and oil-cake or corn. A better and cheaper plan is to mix the straw with sliced roots, moisten the mass with water, and allow it to remain until a slight fermentation has set in. This process effectually softens and disintegrates, so to speak, woody fibre, and sets free the stores of nutritious matter which it envelopes. Some farmers who hold straw in high estimation prefer giving it just as it comes from the field; they base this practice on the belief that ruminants re-

quire a bulky and solid food, and that their digestive powers are quite sufficient to effect the solution of all the useful constituents of the straw. It may be quite true that cattle, as asserted, can extract more nutriment out of straw than horses can, but that merely proves the greater power of their digestive organs. No doubt, the food of the ruminants should be bulky; but cooked or fermented straw is sufficiently so to satisfy the desire of those animals for quantity in their food. All the carefully conducted feeding experiments to test the value of straw which have been made have yielded results highly favorable to that article. Mr. Blundell, in a paper on "The Use and Abuse of Straw," read before the Botley (Hampshire) Club, states that, in his experience, he found straw to be more economical than its equivalent of roots or oil-cake in the feeding of all kinds of cattle. "I find," says Mr. Blundell, "that dairy cows, in the winter months, if fed on large quantities of roots, particularly mangels and carrots, will refuse to eat straw almost entirely, and become very lean; but they will always eat a full portion of sweet, well-harvested straw, when they get a small and moderate allowance of roots, say, for an ordinary sized cow, 15lbs. of mangel three times per day, the roots being given whole, just in the state they come from the store heap. Again, calves and yearlings being fed with roots in the same way, will eat a large quantity of straw, and when they have been kept under cover I have had them in first-rate condition for many years past. Also, in fattening beasts, when they get a fair allowance of roots—say 65lbs. to 70lbs. per day, with from 8lbs. to 4lbs. of cake or meal in admixture—they will eat straw with great avidity, and do well upon it, and make a profit. It is, however, often the case that bullocks receive 100lbs. or upwards of roots per day, with a large quantity of cake or meal, often 10lbs. or 12lbs. per day; they will not then look at straw, and are obliged to be fed with hay. The cost price of these quantities and kinds of food stands so high that the animals do not yield a profit; for although they may make meat a little faster, yet the proportionate increase is nothing compared to the increased cost of the feeding materials used."

If we turn now to the study of the composition of straw, regarded from an economic point of view, we shall find that the theoretical deductions therefrom harmonize with the results of actual feeding experiments. Let us assume that one hundred parts of oat straw contain on an average—one part of oil, four parts of flesh-formers, ten parts of sugar, gum, and other fat-formers, and thirty parts of digestible fibre; and if the price of the straw be 30s. per ton, we shall have at that cost the following quantities of digestible substances:—

ONE TON OF OAT STRAW, AT 30s., CONTAINS:

Oil.....	10s.
Flesh-forming principles.....	22.4
Sugar, gum, and other fat-forming substances.....	89.6
Digestible fibre.....	214.0
	1,008.0

Total amount of fat-formers, calculated as starch.....	952.0
Add flesh-formers.....	89.0

Total amount of nutritive matter.....1,041.6

We shall now compare this table with a similar one in relation to the composition of linseed-cake, which will place the greater comparative value of straw in a clearer light. A fair sample of linseed-cake contains, centesimally—

Flesh-formers.....	20
Oil.....	12
Gum, mucilage, sugar, &c.....	34
Woody fibre.....	6

ONE TON OF LINSEED-CAKE, AT £11, CONTAINS:

Flesh-forming principles.....	168.4
Oil.....	268.8
Gum, sugar, and other fat-formers.....	761.0
Woody fibre.....	74.4

Total amount of fat-formers, calculated as starch.....	1,568.0
Add flesh-formers.....	582.4

Total amount of nutriment.....2,000.4

These comparisons are very instructive and important. We learn from them that we pay £11 for 2,000 lbs. of nutriment when we purchase a ton of linseed-cake; whereas, when we invest 30s. in a ton of straw, we receive 1,000lbs of digestible aliment.

This estimate of the relative value of oat straw and oil cake, the lecturer contended, was rather under than overstated in favor of the former; inasmuch as no account was taken of the thirty per cent. of the so-called indigestible woody fibre, which he believed was in great part assimilable under ordinary circumstances, and could be rendered nearly altogether digestible by proper treatment.

Straw is relatively deficient in the flesh-forming principle, and abounds in fat-forming elements, of which, however, the most valuable (oil) is the least abundant. Now, if we add to straw a due proportion of some substance very rich in flesh-formers and oil, the compound will possess, in nicely-adjusted proportions, all the elements of nutrition. Perhaps the best kind of food which we could employ for this purpose is linseed-meal. It contains about twenty-four per cent. of flesh-formers, thirty-five per cent. of a very bland oil, and twenty-four per cent. of gum, sugar, and mucilage. Linseed-cake may be substituted for linseed-meal; but the meal is rather the better article of the two. Its flesh-formers are more soluble, and its oil thrice more abundant and far more palatable than the same principle in most samples of oil-cakes. An important point, too, is, that linseed, unlike linseed-cake, is not liable to adulteration. As linseed possesses laxative properties, it cannot be largely employed; the addition, however, of bean-meal (the binding tendency of which is well-known) to a diet partly composed of linseed, will neutralize, so to speak, the relaxing influence of the oily seed. If oilcake be used as an adjunct to straw, rape-cake will be found more economical than linseed cake. If it be free from mustard, well steamed, and flavored with a little treacle, or a small quantity of locust beans, it will be readily consumed, and even relished, by dairy and fattening stock.

Professor Cameron observed that breeders attached a much higher value to oilcakes than they really possessed. Perhaps the reason of this was that they did not take into account the large proportion of the ordinary food of animals which was expended in merely keeping them alive. Roots, straw, and hay were given to an ox, and it was found that only a small proportion of their dry substance was retained by it as permanent increase of its weight, the rest being unassimilable and thrown off in the form of egesta. In this way by far the largest portion of the food consumed is employed to keep the animal alive, maintaining its heat, the circulation of the blood, and enabling the various other vital functions to be duly performed. When a sufficient quantity of roots and straw is given to maintain the life of the animal, and cause it to increase in weight, then the addition of oilcake produces an increase of weight proportionate to the quantity given, and therefore the oilcake is considered to be six or seven times more valuable than straw, because it appears to produce six or seven times more flesh. If, however, it were possible to feed an animal wholly on oilcake, it would be found that the greater portion by far would be expended in keeping the animal alive; and, under such circumstances, the addition of straw or hay would produce apparently a nutritive effect three or four-fold greater than usual. He (Dr. Cameron) thought the price of linseed-cake too high, and believed that its alimental value was not more than three times greater than that of straw, while its price was eight times greater. At the same time, oilcake had properties which rendered it valuable, independently of the quantity of flesh into which it was capable of being converted. Probably it was useful in promoting digestion. It would be eaten when other kinds of food were refused by fattening beasts. It was undoubtedly an extremely valuable food for sheep; still, he could not help thinking that the feeder's profit was chiefly—in fact, nearly wholly—made on the straw and roots, and not on oilcake; and there could be no greater mistake than the use of excessive quantities of these costly cakes. If they were valuable chiefly on account of their oil, it might, after all, be really more economical to use the linseed itself either bruised and cooked, or in the form of meal. The oil would then be blander and far more abundant.

An attentive consideration of the foregoing statements may serve to enhance our estimate of the value of straw for other purposes than mere litter, and may lead to a more economical system of feeding. From our own experience we can speak very highly of the value of this often neglected fodder. During several years in Illinois, straw being abundant and hay scarce on our farm, we fed both horses and cattle very largely on straw, the hay being reserved for the horses in spring, and for some of the tenderer young animals; and, indeed, during some seasons we were without hay altogether, and it is scarcely necessary to add, without roots. The staple diet for all the large stock was Indian corn, and straw. A few oats were fed for the sake of change to the horses when spring work commenced; and the milch cows had the addition of bran mash to their dry food. Our animals were never in better condition; and we found that while we had plenty of good sweet straw we could very easily dispense with hay altogether.

Thorough-bred.

To the Editor of THE CANADA FARMER:

Sir.—In your issue of the CANADA FARMER of the 15th May last, you obliged me by inserting a question, to which I should have liked very well to have received an answer, viz.: what constitutes a full-bred animal? The month of May being rather a busy time amongst farmers in Canada, it occurred to me that possibly it might have escaped their notice, but since the Provincial Fair I find that such has not been the case. I have heard discussions on the question, and I must say, I find that what constitutes a full-bred animal is as much a puzzle to-day as it was forty years ago. Now, as neither the writer of this article, nor the party who was discussing the question, stands number one in the herd-book, we would like if some leading stock breeder, or herdsman, would tell us how often we have to cross with the Canadian cow, and its and their offspring, with full-blooded bulls, describing every cross by such name as is commonly made use of amongst herdsmen, until we arrive at maturity, or full blood—for without that the best link of the chain is wanting. For when a herdsman tells me that the offspring of cows, seven-eighths or nine-tenths breeding, is unworthy of a place in the herd-book, I can only reply, that fractions must have been a favorite rule with that man when at school. In short, it would be some encouragement to know if the herd-book is ever reached through the channel hinted at. If so, perhaps, you may again hear from the

PLOUGHBOY.

Mr. George Leith, of Ancaster, says, under date 22nd, that he is the proprietor of nine lambs about ten days old and thriving.

Veterinary Department.

Diseases of the Hock Joint in the Horse.

BOG SPAVIN.

The affection commonly known as Bog Spavin is a puffy tumour situated on the antero internal side of the hock joint, a little higher than the usual situation of bone spavins. This enlargement consists primarily of a distended condition of the capsular ligament of the true hock joint. The enlargement invariably makes its appearance towards the internal side of the joint, because at that part the ligament is but little covered with tendinous fibres. In the true hock joint articulation, in the healthy state, there are always from two to three drachms of synovia or joint oil, whilst in a diseased condition it may amount to two or three ounces. This disease, in the early stage, may therefore be defined to consist in distension of the capsular ligament of the true hock joint with synovia, which, however, becomes more or less altered according to the length of time the disease has existed. In some instances the extra secretion seems to be charged with large quantities of calcareous matter, which finally becomes converted into an ossific substance, ending in partial ankylosis of the joint. The walls of the distended sac, in other cases, become very much thickened, and in some instances, where the disease has been long established, the walls will become three-quarters of an inch in density.

Bog Spavin is a very common affection in Canadian horses, and more so in some breeds than others. It is very often met with in the heavy breeds of horses; and some of those animals appear to be peculiarly predisposed to this complaint, and also to bursal enlargements in other situations. In the heavier breeds of horses this enlargement is seldom productive of much harm, and for ordinary work, as for farming purposes, it does not appear to inconvenience the animal. Some people attach a great deal of importance to these puffy tumours, although not causing lameness, but in well-formed draught horses a slight distension of the capsule should but little

depreciate his marketable value. In blood horses, Bog Spavin is a more serious affection, because in them it is very often associated with other diseases of the hock, and particularly ulceration of the internal structures.

The causes of Bog Spavin may be brought under two classes, general and local. An increased secretion of synovia in the joints generally often accompanies febrile diseases, and other œdematous and dropsical affections. The local causes are such as operate directly on the hock, as sprains, hard driving, and pulling heavy loads, or backing an animal forcibly when attached to a heavily-laden waggon. It will frequently appear in young horses in a very sudden manner. As for instance, a young farm horse, that is in soft condition, his muscles are soft and flabby, and his system plethoric and gross; in this state he is made to do a hard day's work, or a fast journey. As a result of this sudden and active exercise, a greater quantity of synovia is secreted, and the process of absorption is not equal to that of secretion, and hence the over-abundant quantity shows itself in the form of these puffy tumours, which at first are most conspicuous towards the internal side of the joint.

Bog Spavin is a disease that is easily recognised. A tumour is seen to form, and examination shows this tumour to contain a fluid. In many cases gentle exercise will dispel it in the early stage, and it is seldom productive of lameness. In cases of long standing, and where other structures of the joint are implicated in the disease, there is increased heat in the part, and there is also well marked lameness, the lameness partly disappearing with exercise. When the osseous structures become affected, there is usually a deposition of osseous matter thrown out on the inner side of the joint, a little higher than the usual situation of bone spavin. When this takes place in old animals, it commonly ends in permanent lameness.

Regarding the treatment of Bog Spavin, this must necessarily be somewhat varied. In slight cases, and in young animals, treatment is seldom required; as the animal grows and gains strength, the superfluous fluid is removed. When treatment is required, it should be simple and soothing in the first stage; the horse should have rest, and the hock be fomented with warm water, and afterwards thoroughly dried and bandaged with a flannel bandage. In the summer months cold water and discutient lotions are preferable to warm water, and pads and bandaging should also be used, and be kept continually wet with cold water. The continued cold and pressure tends to promote the absorption of the fluid, and the ligaments gradually contract. When the inflammatory action is reduced, blisters may be used with benefit. The hair should be cut off the front of the hock, and a cantharidine blister well rubbed in; or the joint may be blistered with the compound biniodide of mercury ointment. In cases where the osseous structures are diseased, repeated blisters are required, and it may even be necessary to use the firing iron. In all cases when treatment is required, it is advantageous to give the horse perfect rest.

To KILL LICE ON CATTLE.—Take one pound of quassia chips and boil them for twenty minutes in half a gallon of water, then rub the animal thoroughly with half the above infusion.

SPLIT HOOF.—Alexander McMaster enquires what is the best method of treating split hoof in horses. If the coronary substance, from which the hoof is secreted, is uninjured, the horn will grow down perfectly sound. To stimulate and increase its growth, remove the hair for about two inches above the split and apply a blister composed of powdered cantharides one drachm, lard four drachms.

WORMS IN HORSES.—A subscriber writing from Barrie, says:—"I have a horse five years old that has worms. I have used condition powders all winter besides other medicine from the druggist, without the desired effect. The worms are about three inches or four in length, and one-sixteenth of an inch in diameter, of a white color. If you would give an effectual remedy in your next, or some subsequent issue, you will greatly oblige."

ANS.—There are many different medicines prescribed for the removal of worms. A very simple, and in most cases an effectual remedy, is oil of turpentine, one ounce, and linseed oil, four ounces, to be well mixed, and given every second morning, until three doses are given; twenty-four hours afterwards, administer a ball, made up of Barbadoes aloes, six drachms, powdered gentian, two scruples. The horse should also be allowed a change of food.

The Dairy.

Holstein Butter.

To the Editor of THE CANADA FARMER:

Sir,—The accompanying letter was sent to me by my friend, Mr. Downes, one of the largest provision brokers in London, an Irishman, and engaged in the Irish butter trade.

If Irish butter, which a few years since was looked on as almost perfect, compares so unfavourably with continental, what shall be said of Canadian?

The following, taken from our London letter of this week, will show the estimation in which it is held compared with Normandy: "Of some 'super extra' Normandy we have made this week as much as 140s. per cwt.," or 1s. 3d. stg. per lb. This was wholesale, probably in lots of a ton or over. In the same letter they advise a sale of Canadian at 74s. per cwt. or less than 8d. per lb. Of course it is not likely that farmers here can make butter equal to their best, as we have not the advantage of their saline atmosphere, and I suppose have a much higher temperature to contend with. Neither can we get it to market as quickly and in as good condition; but it is very possible to have it much better than at present. Now it is simply a loss and nuisance to all concerned.

WILLIAM DAVIES.

The following is the substance of a letter addressed by Mr. J. R. Webb to Mr. Downes:—

In the large dairy farms in Holstein—having in many cases 100 to 200 cows, sometimes more—the greatest attention is bestowed upon everything bearing upon the production of butter; upon the feed and care of the cows, the manufacture of the butter, and the arrangement of the dairy buildings. The result is a very high average price obtained for their produce, which commands the preference, especially in the northern markets of England.

The make is divided into winter, or fodder make; new milk; grass, or summer make; stubble, or autumn make.

Fodder begins when the cows come in from the fields at the end of October, and is neither large in quantity nor superior in quality, as the cows yield but little, and purely old milk. This sort is not fitted for keeping, and is usually sent to market promptly.

New milk, of course, begins according to the time of calving, usually some time at the end of February, and early in March. The quality of this make is very fine, sweet, and fresh, and in March, April, and May, usually meets a bare market and realizes high prices. Being fodder-made, however, it is not calculated for keeping beyond a few weeks.

Grass butter begins when the cows are turned into the fields, about the middle to the end of May (spring being late in that climate), and lasts till the month of August. This is a fine, rich, well-keeping butter, though it sometimes suffers in the extreme heat of summer. This make is usually shipped in the late autumn, unless the markets are sooner favourable.

Stubble butter is so called, from the cows being put after harvest on the after-meadows, corn-stubbles, &c., where they are kept till housed for the winter, about November 1st. This sort is usually of very superior quality—mild, rich, and yet capable of being kept for some months without such injury. Shipment is made about the last months of the year.

The great characteristics of Kiel or Holstein butter, as compared with Irish, are—clear, solid, waxy texture, freedom from butter-milk, richness of quality, delicacy of flavour, and mildness of cure. It is rarely coarse in salt or texture, the defects to which it is most liable being bad flavour, as some farmers will occasionally overbold until it becomes rank and strong or tallowy.

As to the feed: In summer and autumn, while the cows are out in the meadows and stubbles, they are sometimes tethered, by no means as a rule, and they remain out night and day. When once taken in-doors, they remain under cover entirely, in a warm, well-ventilated space, and are fed something after the following order: About 5 a. m. they have about as much meadow or clover hay shaken down before them by degrees as they will consume in about two hours; they are then supplied with water; chaff cut from oat or barley straw mixed with 4 to 5 lb. (sometimes even more) of bruised oats or barley is now given to the cows (moistened in their troughs); at 1 o'clock the second feeding takes place, similar to the first, and between the two some hay or straw to pick at as they choose while chewing the cud; for the evening and night they must put up with plain straw. About 2 oz. of salt per cow is given daily to relish

the food, and help digestion. Oats are considered to increase the quantity, but by the richness of the milk: equal parts from each form the mixture. Ostrake yields more milk, but affects the flavour of the butter unfavourably, as also do turnips, mangels, swedes, potatoes, and all roots but red carrots, and therefore the latter only are given to cows when in milk. It is very important that the cows should leave the stall—when spring comes—in good condition, and thus continue a full yield of milk when they first get out to grass.

Manufacture of Butter.—The milk, as it is brought into the dairy, is strained into the pans through a fine hair sieve, taking care that any splash of split milk is at once wiped up, lest it should taint the air in evaporation, and sour the settings. To secure a pure flavoured and well-keeping butter, the utmost cleanliness in all utensils, and a pure air in the dairy, are of course essential, but after that much will depend upon skimming the cream just at the proper moment. This must always take place before the milk can become sour, and in order to get the largest amount of cream, an even temperature in the dairy is of the greatest help. Pure air does not mean a strong draught, as the surface of the milk must not be ruffled. What the proper moment for skimming is depends on the temperature and atmospheric conditions generally. In Holstein the rule is—in the heat of summer (temperature 55° to 60° Fahrenheit in the milk-room) skim after the milk has stood for from 32 to 36 hours; in spring and autumn (at 40° to 50°), about 46 hours; and in winter (13° to 45°) about 60 hours. This should get the whole of the cream; but if at any time earlier the milk begins to sour, it is skimmed at once. The cream, as it is removed, is strained into the cream tubs, and kept occasionally stirred. It remains there until it has sufficiently thickened, and has acquired a pleasant acid taste.

It is as well to repeat that choice keepable butter can only result when the milk has kept perfectly sweet, as the souring develops curd. The cream, on the contrary, should have an acid taste before churning, which must not, however, be confounded with the sourness just mentioned, which is altogether different, and arises from the whey, from thunder or close atmosphere, sometimes from standing too long, from damp or badly cleansed utensils, or from general want of care and cleanliness.

In summer the cream generally stands about 12 hours before churning; in winter about 24 hours. The room may require cooling in summer and warming in winter; but with pure air, free from bad smells, smoke, or such like, as the cream easily takes up the vapour. Potatoes, roots, herbs, or anything of the sort, should never be stored in the same place. The temperature of the cream considered best for churning is about 57° to 60°, though that varies somewhat with circumstances. The churn is rinsed out, before putting in the cream, in summer, with fresh cold water; in winter, warm water is used, as a certain moderate range of temperature much facilitates the coming of the butter, and the addition of a pailful of iced water in warm weather, and warm water in winter, into the churn, is sometimes made for this purpose during the churning. When the butter comes it is taken out, and the whey pressed out to some extent, put into trays, and carried away to the butter cellar. Here it is placed in a long trough, slightly on the incline, with a few holes at the lower end to carry off the moisture. This trough is first rinsed with hot water, and then with cold, to prevent adhesion, and the dairy-maid washes her hands in the same order. She now breaks off with her hands a lump of some 5 lb. or 6 lb. of butter, and presses it against the side of the trough with both hands opened; rolls it up and presses it out again till all the butter-milk is got rid of. It may require the operation of several times before this is thoroughly effected. Piece by piece the butter is treated in this manner until the whole churning has been manipulated and placed on one side; then wipe out the trough again with a cloth and hot water, rinsing off with cold, ready for salting and colouring. We may remark, in passing, that colour is added in the winter months, for which purpose annato is used, prepared previously by melting down in a small quantity of butter.

In salting, only fine, dry, clean salt, free from mineral taints, is used, which must have been stored away from all possible contamination by dirt or bad odours. At the rate of about 3½ lb. per cwt. it is first strewn over the surface of lumps of butter about 30 lb. to 40 lb. each and then distributed through the mass with the hand, fingers extended but kept close together. At this stage it is not kneaded in, but when fairly spread the butter is again worked up in 5 lb. or 6 lb. lumps, as at the earlier stage. It is then left for 12 hours or longer, if there is not sufficient to fill a cask.

Then, for the third and last working, add 1 lb. more salt per cwt. Spread fairly through, and work up the butter till all the liquids not belonging to it are finally

expelled. A cask should be filled at one packing to get a perfectly even colour and quality, and should be firmly and closely packed, so that all sides are filled. The system of washing the butter itself in cold water is never followed in Holstein, as it is found to impair the delicacy of the flavour.

The casks are made of young red beech, felled in December, when the timber has least sap, and seasoned in the open air before it is stored, to dry perfectly, previous to use. The cooper is required to furnish packages water-tight, and that when closed will be nearly air-tight. Before use, fill the cask for 24 to 48 hours with strong brine, in which is a dash of salt-petre, then wash with hot water, rinse with cold, and rub dry with salt. These precautions will largely prevent rancidity, mouldy, or tallowy butter, even when kept some time, provided the casks have all along been kept dry and clean.

From the foregoing statement it is easy to gather that the prominent points in the Holstein treatment are extreme cleanliness and regulated temperatures. These can only be obtained by suitable arrangements of buildings and free space. Hence their dairies are models of order; and on a large estate the buildings devoted to butter (almost always detached) are the first consideration, to which the other farm-buildings take the second place. The rooms for setting the milk, making and storing the butter, depend much for their success on position and suitability. The buildings usually run from south to north, with trees planted conveniently as a shade from the hot sun. The milk-room has brick or stone walls, often double, the free space between tending to keep it cool in summer and warm in winter. It is usually sunk from 3 to 5 feet below the outer surface, with a height of from 16 to 25 feet, to give free vent to all exhalations from the milk. This is further provided for by roof-ventilation, through shafts, and by windows 4 feet wide, 5 feet high, 5 to 6 feet above the floor. Shutters and louvres are also customary. The floor is laid with tiles or flags, set in cement, sloping slightly to the gutter on each side; so that the water used in flushing runs off, leaving it easy to dry and wipe up all moisture. Nothing tends so much to sour the milk in summer, and thereby lessen the quantity of sweet cream, as dampness. The pans should have room to stand free, and not be placed one upon the other. The size of the milk-room depends, of course, on the number of cows kept. In a dairy of 140 cows, the measurements were for the milk-room, 50 feet long, 35 feet wide, 20 feet high from roof to floor, which was sunk 5 feet lower than the outer surface. The other rooms were in proportion, with ample space for air and ventilation. All store-rooms are separate, and the dairy building is always far removed from the cowhouses, pigsties, dung-heaps, or anything whatever that is offensive and can taint the air. With regard to the utensils mostly used, there is nothing of such marked difference as to call for special notice, except that the old-fashioned round pans, whether of wood or iron, are largely going out of use. The preference is now given to pans of cast-iron, enamelled white inside, about 6 feet long and 2 feet wide, for which it is claimed that the cream rises more quickly and in larger quantity.

This slight sketch of the system in force in most of the best Holstein butter dairies is not intended necessarily as giving a model plan which is practicable everywhere. The circumstances that the farms in Holstein, Schleswig, Seeland, and Mecklenburg are very extensive, that the number of cows kept in one hand is also large, that the buildings and arrangements involve considerable outlay of capital, form conditions not always present elsewhere. By the close comparison of different methods, however, no doubt, valuable hints may be gained, tending to the general improvement in the manufacture of that important article, butter.—Joseph R. Webb, 255 Tooley Street.

EXTRAORDINARY SAGACITY IN A HORSE.—Mr. Jones, who intended taking his wife out for a drive one day, asked his milkman, who had a very spirited horse, for the loan of the same, which request was granted. However, Mr. Jones was not a good driver, and had great difficulty in managing the horse, which at last became ungovernable, and, to the great horror of Mrs. Jones, bolted with them. Mr. Jones did not know what to do, and a serious accident seemed unavoidable, when, all of a sudden, Mr. Jones, remembering the capacity for which the horse was used, and calling out with a stentorian voice, "Milk oh! milk oh!" the horse stopped instantly, to their great joy, at this familiar cry, and they got home safely. On passing a pump in the neighborhood, the horse would not stir an inch, until Mr. Jones got down and worked the pump-handle a dozen times, after which operation it moved on directly; and to finish off the day's pleasure, it stopped at all the customers of the milkman on the road where Mr. Jones lives, his house being at the further end.—*Montreal Witness.*



Farming in Canada.

To the Editor of THE CANADA FARMER:

SIR.—With upwards of twenty years' experience as a farmer in Canada, and a lengthened connection with the management of agricultural associations and other institutions, I trust you will pardon me for venturing to offer a few remarks in reply to "A Subscriber" in your issue of Feb. 1st.

You are quite correct, sir, in stating that Canada is essentially the poor man's home, or rather the labourer's home; in corroboration of which I can point to hundreds in this county alone, who commenced without capital, except what they possessed in well-developed muscles and energetic minds, and who now own property, in fee simple, worth from \$5,000 to \$15,000 each, and some much more. None but the indolent and improvident (except in cases of sickness) have failed to procure a home for themselves and families. My experience agrees with your own—that those who have succeeded best are the men who hired out a year or two, to become better acquainted with the customs and the best methods of farming in a new and undeveloped country like this; and this applies equally to the renter as well as the purchaser. Those who have the most signally failed are the most bigoted in their notions, and most determined to follow the practice of the country from whence they came.

All who are acquainted with farming in the "old countries," especially in England, are well aware that master farmers, even those who rent only sixty or one hundred acres, do no large amount of physical work or "labour." The reasons are obvious; labourers are plentiful and wages moderate; custom, too, has a good deal to do with it. Farms are scattered over many miles—a field here and another there; this necessitates a good deal of walking, or generally riding on horseback, to oversee the work; then there is the marketing, which takes up time, the grain being all sold by sample, and delivered subsequently. Besides, nearly every farmer is a sportsman and keeps his dog and gun, and many are expected by their landlords to follow in the chase; such, of course, have to keep their hunters. Homesteads are generally grouped in villages, and this is taken advantage of for social gatherings in the evening, and frequent intercourse on various occasions, which render farm life more attractive. These are a few of the advantages enjoyed by English farmers, and, hence, it is not hard to comprehend why those who have so lived, feel the sudden change experienced by emigrating to Canada, and commencing life on a farm, where they are necessarily almost isolated during a great part of the year, and circumstances compel them to put their "hand to the plough"—literally. This will account for the dislike and frequent failure of "monied men." There are many, very many, exceptions in this country. I am acquainted with a large number, who enjoyed just such privileges as before named, and who brought from \$5,000 to \$7,000, and, at the same time, brought that necessary accompaniment, common sense, which guided them in the purchase of a home, and caused them to conform, in a measure, to the requirements of their new location. The consequence is, that they have not only saved their own, but have added greatly to their wealth, and become prominent leaders in agricultural progression.

If this is true of the past, it is equally true of the present, with this advantage: the rapid adoption of machinery of late for farming operations, obviates the necessity for the hardest manual labour, and, in a measure, renders a farmer more independent of the "Jack-as-good-as-his-master" class. He who does not relish the practical use of the scythe and pitchfork, will not object to a seat on the reaper, or consider it beneath him to guide the operations of a horse-fork. Other advantages, not enjoyed twenty years ago, are greater market facilities, increased school advantages, and enlarged social, literary and religious privileges, some of which are not surpassed

in any country. I may add also, that there are many new and important branches just brought into existence among us, which offer great inducements for a fuller development, such as flax, cheese, and grazing operations.

I will conclude by stating that a man with seven thousand dollars, just arrived from any country, can readily purchase in this county—which is acknowledged to be second to none in Canada—a hundred acre farm, in nearly a square block, for \$5,000, with an orchard, outbuildings, a tolerable, and in some instances a good dwelling house, with the usual appurtenances; situated within easy distance of a school, and probably near a village, where some of the privileges before mentioned may be enjoyed. The balance (\$2,000) would furnish his house (moderately), supply his farm with stock, implements, seed and bread for a year, and leave a few dollars for contingencies. He would require one man (even if he has sons) who understands working on a Canadian farm, and a girl to assist in the house. If he is healthy, and is possessed of an ordinary share of common sense, he cannot fail to keep his own. If he fails, it is not the fault of the country.

R. W. SAWTELL.

Oxford Co., Feb. 13, 1868.

The Agricultural Bill.

To the Editor of THE CANADA FARMER:

SIR.—So much has been said and published condemning the action and suggestions offered by the Toronto Convention, in regard to the New Bill, that I feel constrained to make a few remarks in reply.

The Convention has been invariably set down as a one-sided affair, inasmuch as the delegates were sent by county societies. It is true that they were so elected, and it is also true that very many of the delegates are as much interested in the prosperity of township societies as they are in county societies, and in their deliberations on that occasion they were actuated by less selfish motives than your correspondents, and manifested a more liberal spirit. There were a few who expressed a wish to annihilate township societies, but such a proposition was not entertained by the meeting. All admitted, however, that in nearly every locality there are too many exhibitions, and many instances were given to show that the Government grant is frittered away without producing any good results, a great deal of valuable time wasted, and expenses incurred needlessly, by such a multitude of organizations. A remedy is needed, and the most feasible that suggested itself was the raising the membership to 75 and lowering the proportion of the grant. This, it was considered, would induce those township societies that barely existed, to cease their operations, or stir them up to renewed exertions. But I here venture to remark, that any society that cannot raise \$75 among its members, or that would be so affected by the loss of \$12 or \$14 as to be crushed, should cease operations, and contribute its means and influence to sustain the nearest organization that is better appreciated. I would have no objection to the rule being applied to county organizations as well. If a county or electoral division cannot contribute \$200, at least, let the grant be withheld: for I hold that it is the duty of the township to sustain a central organization, whose operations should greatly exceed in extent and usefulness that of any of the branch societies within its jurisdiction. Instead of being antagonistic, the branches should be auxiliaries, and act in harmony with each other in promoting its usefulness and success. I shall pass over the very unkind and selfish remarks of your correspondents—who, evidently, are influenced by peculiar circumstances of their own, and the localities in which they reside—and refer to the manner in which the New Bill proposes to elect the members of the "Council of the Association." The division of Ontario into twelve electoral districts is an improvement, but the manner of electing one member for each district is scarcely feasible, in the way provided. Past experience shows that preconcerted action is seldom attained among farmers, and we have little reason to hope that in this instance it will be popular: yet in order to prevent eight or ten names being sent to the Com-

missioner, it must be resorted to. I would prefer electing two delegates at our annual meetings, making ten or twelve for the whole district, who shall meet at a central place soon after, and there decide, deliberately, who is the most fitting local man to represent the district at the Council. This would relieve the Commissioner from much responsibility, and remove the possibility of appointing his own particular friends. On the whole I think that we have reason to congratulate ourselves with the hope of having a more practical Agricultural Bill than the one hitherto in force.

R. W. S.

East Zorra, Feb. 13th, 1868.

Comments.

To the Editor of THE CANADA FARMER:

SIR—I am glad to see the subject of "Our Social and Industrial Condition" discussed (on page 8 of the present volume) by so able a hand as Prof. Buckland. There is, perhaps, more truth in the remarks of his correspondent in relation to the growing tendency abroad among our population, and especially the young, of avoiding the labors and duties pertaining to farm-life, or, indeed, of giving thoughts and attention to any pursuit that goes to make this world the better for their having been born into it, than editors or residents of cities will admit. Any one residing in the vicinity of our towns and villages cannot fail to be struck with the vast numbers of the idlers his correspondent describes, and others who love to congregate "around town," and all who can into our public offices, where they think (and have they not some grounds for the supposition?) they can gain that after which all men strive, and avoid to a great degree the discomfort and ignominy of earning their bread by the sweat of their brow. They cannot fail to observe the growing tendency, especially among the younger members of the rural classes, of shirking the active duties of life, and of forming a very low estimate of the true worth and dignity of human labor.

But may not we ascribe this growing evil, to some extent, to the imitating and apeing now common among us of the manners and customs of the old world, whose populations are divided into classes with broad division lines between, in which cultivators of the soil rank as *peasantry* and *serfs*, where public officials, from the highest retainer of the Government down to the lowest menial of office, roll in the wealth and splendor of the land; nay, more, is not this slavish contempt of labor one of the offshoots of the degenerate systems of class and caste common to the decaying oligarchies of continental Europe?

This servile aversion to work is one of the direst evils that this or any other country is cursed with. If labor could be divested of the odium now attached to it in the eyes of the idlers, of the shoals of would-be lawyers, not one in ten of whom have stamina enough to enable them to reach the goal of their expectations, and office-seekers of all kinds who now herd about our court-houses—in the eyes of thousands of young men loafing around our towns and villages, and forming, we may say, three-fourths of the non-productive classes generally—our country would be rid of one of its crying evils. Labor is honorable; the educated workers are our lords, our true aristocracy, and the sooner this principle is recognized, the better for our country.

PROFITS OF FARMING.

As to the Profits of Farming touched upon in the remarks of Prof. Buckland on the foregoing topic, it will, *other things being equal*, as a business, intelligently conducted, afford profits equal to the average of other pursuits. But there is no reason for supposing the fact, so long as farmers send lawyers, commercial men, and others of the non-producing class to Parliament, to legislate and regulate the tariffs for them. The profits of agriculture are so inseparably connected with the regulating of tariffs and the fostering care of Government, that there can be no grounds for believing them to equal those of other pursuits, unless *these considerations* are such as to warrant the supposition.

Again, the profits accruing to the cultivators of the soil, or any other class, cannot equal those of the adherents of other pursuits, unless they come up to them as a class in the matter of education. The educated few will always stand higher than the less intelligent many. Educate! educate! should be the cry of farmers. More than ever are we convinced of the necessity of the existence of a greater amount of

intelligence abroad amongst our farming community to enable them to "hold their own" with the non-producers, and to protect themselves from an unscrupulous class of "cormorants" with which they sometimes have to deal.

And having this in mind, I would like to have seen the CANADA FARMER, in its prospectus, come out and say, that although it "knows no distinction of race, party, or sects," it would still be the acknowledged champion of the farmers, as against the non-producing class, for the simple reason that we have no paper in the country (aside from yours, perhaps) so far as I know of, which is not bound up in city interests as against those of the country. In the publication of market reports, the reporting the appearance and state of the crops during and before harvest, in speculating upon the probable price of produce, and, in fine, in any argument in which the interests of producers and non-producers move in diverse channels, it is easy to see in what direction their sympathies tend.

There is no use in shutting our eyes to the fact that there are times when the interests of the two classes do not run in one and the same direction, and such being the case, it is obvious that a farmer's paper (if your humble servant be allowed to take so much upon himself as to say it) should be something more than neutral.

PLAN OF A BARN.

On the same page (8) is a generally very well arranged plan of a barn. But, by all means, have a basement under the building, for stabling, root, and manure cellars, &c. One-third of the roofing, the most expensive detail of farm buildings, is saved by having the structure raised a few feet above the surface, which will give room for all the purposes of stables, sheds for shelter of stock, root cellars, manure cellars, cisterns, &c. If not upon a side-hill, bridgeways could be built up for driving in upon the floor above. He who builds a barn, now-a-days, without a basement beneath, is assuredly not wise.

IMPROVED CHECK AND DRIVING REIN.

The Improved Check and Driving Rein, illustrated on page 5, would seem to be a "good thing" for checking hard-mouthed and unruly horses. I first came across this Improved Rein last spring, on board one of the steamers which then plied between New York and Roundout, on the Hudson river, in the hands of an agent, who was describing and "holding forth" its merits to a knot of idlers who had gathered around him. It was astonishing with what ease a man (holding to the pulleys marked c in the engraving) could be "hauled in" by the exertion of a few pounds weight on the reins. I believe the contrivance to be a valuable invention for the purposes intended.

Ont., Jan., 1868.

COMMENTATOR.

Advice to Landlords.

To the Editor of THE CANADA FARMER:

SIR,—Any one promoting the increase of good agricultural works among the farmers of Canada will be doing a great service to his country, and be a true patriot. How many thousands of farmers who never read an agricultural paper, and as a consequence, never improve. Having a tenant of this kind, the thought struck me, that it would be well to subscribe for the CANADA FARMER and give it to him. I at once did so, and the marked improvement I have observed since getting the paper encourages me to continue, and I would say to all landlords, go and do likewise. Try it. You will find it pay—even if it only adds a load or two of manure to your farm every year.

ONE OF THEM.

Collingwood, Feb. 20, 1868.

A MINNESOTA CORRESPONDENT.—"B. F. Perry" writes as follows all the way from Rochester, Minnesota: "A number of farmers here think of sending to Canada for seed (spring) wheat. Could you inform me what part of Canada you would recommend us to get it from, and the kind you think the best? We want a pure article. I think I must have the CANADA FARMER. I have seen a few copies of it and I like it very much."

ANS.—Your best plan is to send your orders to Canadian seed merchants. J. Fleming & Co., of Toronto, Messrs. Bruce, of Hamilton, or Messrs. Sharpe, of Guelph, can, no doubt, supply you. Write to any, or all of them, for information as to the varieties they can furnish, and the price.

POULTRY MANURE.—A gentleman residing in Toronto, and who keeps about thirty fowls, wishes to know if he can dispose of the droppings to gardeners or farmers. We should recommend him, if he has no garden of his own, to apply to some of the market gardeners in the neighbourhood, who would probably be glad of the manure.

"PRINCE ALBERT" BREED OF PIGS.—"An inquirer," writing from Dalston, asks "what is the difference between the Windsor or Prince Albert breed of pigs and the ordinary Suffolk?" We cannot specify the exact points of the breed in question. They are much esteemed for early growth, and maturity and quality of pork; they are somewhat smaller in size, and considered finer in texture than the common Suffolk.

CHINESE SUGAR CANE.—A correspondent from Ottawa asks our opinion of the value of *Sorghum saccharatum* as a forage plant. We have used it both for forage and sugar-making in Illinois, but should think it scarcely hardy enough for the neighborhood of Ottawa. It is easily affected by frost. We should prefer Indian corn, as producing a larger amount of fodder, quite as nutritious, if not so sweet, as the sugar cane. We know of no parties, except the seedsmen, who would be likely to furnish the seed.

A QUERY CALLED IN QUESTION.—Our correspondent "V. C.," from Lakefield, contends that he has the highest authority for the nomenclature employed by him in reference to the Thrush family which he assigned to the *Merulinae*, adopting, in this respect, the classification of Sir William Jardine, and other distinguished naturalists. The term *Turdinae*, which we suggested by way of query, is employed to designate the sub-family of the Thrushes by Professor Hinks, Dr. George Gray, and others. It is a matter in which there is not yet any ultimate authority. The same correspondent clearly points out an error in Mr. Fairgrieve's enumeration of Canadian Song Birds, among which he mentions the *Golden Oriole*, in place, no doubt, of the *Baltimore Oriole*, the only bird of the genus seen in Canada.

The Canada Farmer.

TORONTO, CANADA, MARCH 2, 1868.

The Profits of Farming in Canada.

ENQUIRIES have come to us recently, both from Canadian and from English correspondents, as to the true status of farming among us, and the prospects it holds out to the emigrant from the old country. A large proportion of those who leave the shores of Europe for the new world, pass through this portion of the continent, and try their fortunes in the United States. This preference arises partly from the lower price of land in the States, and the liberal policy of the American Government in holding out the inducement of free grants to actual settlers, and partly also, we believe, from erroneous notions in regard to the profitableness of farming in the two countries. On this subject we intend to institute a comparison in some future article; at present, we would look at Canadian farming without reference to the advantages or disadvantages to be found amongst our neighbors. Some of our correspondents have replied to the request that was recently made through this journal, and have written frankly and ably on this important subject. Others, not directly replying to the questions, have supplied information which will help the enquirer to form his opinion; and we trust that many more will yet furnish reports of their experience, so that the stranger who comes amongst us seeking a home, or our friends across the Atlantic who have decided on leaving their native land, and are anxiously enquiring where to turn their steps, may find in these pages a safe guide in making their decision.

The rapid progress of the country, as we have said before, affords unanswerable evidence of the Canadian farmer's success, for agriculture is the basis of our national prosperity; and when we look at indivi-

dual cases, we find innumerable examples of men, who with little or no capital at the outset, have made themselves a comfortable home, have educated and provided for their families, and have gained a position of independence and comfort, if not of wealth, which might satisfy the ambition of any reasonable man. Some men have failed, it is true, from unfitness for the work, or from untoward circumstances, or because they belong that class who would be poor and unsuccessful in any calling. But the number of these, in proportion to those who make a comfortable living by farming, is far less than the number of those who become bankrupt in commercial or professional avocations. An old resident of one of our towns remarked recently, in passing a grain and produce store, that in that particular locality, every grain buyer had failed in the long run, though some of them had done well, and made large sums in certain years, while the whole Dominion cannot show a more thriving rural population than is to be found in the immediate neighborhood to which we refer, and which in its general aspect reminds us more of old England than any other part of the country with which we are acquainted.

In estimating the profits of farming, account must be taken of many other items besides the cash in pocket at the end of the year; especially is it necessary to bear in mind the large amount of actual maintenance that a farm supplies, which the inhabitant of the city has to purchase, and which, indeed, consumes the greater portion of the earnings of business. The farmer's fields, garden and stock yard, really furnish nearly all he needs; and with these he cannot be reckoned poor, even if he has no large account at the bankers, and not even any great amount in the purse at home. "To get a living" is about all that a large portion of the community can effect; and we venture to say that more farmers than business men put money by after all expenses are paid. Successful business may be, and no doubt is, a quicker road to wealth than farming, but the chances of success are far less sure in the former than in the latter calling.

It may be objected that these are general assertions, and the enquirer would rather have some specific instance as evidence in point. Such, we think, is furnished by letters in these and previous issues; and we have at hand some recent notes furnished by a friend, who has special opportunities of becoming acquainted with the circumstances, and tracing the career of farmers in all parts of the country. Some of these will, perhaps, put the matter of success in a clearer light, besides showing the intelligence and practical skill which are brought to bear in each case. The first is the testimony of one whose business as a grain-dealer qualified him to form a sound opinion. This man has lately returned from England and Ireland, his native place. He was himself formerly a servant man to a family in this city, but is now wealthy. He says in reference to his visit:—"The crowds of Irish laborers emigrating from Queenstown (Ireland) to the States, astonished him more than anything else that he saw; they fill the streets and quays, and are all bound in one direction viz.: to the various ports of the United States, and not to Canada." He regrets this much, as we are suffering so for want of labor. He tried to turn many, but without effect. To the States they were bound, to join brothers, sisters and friends, and to the States they would go. "Oh," said he, "until I went home again, I did not know what a fine country our Canada is for the poor laboring man, who can and will work. I have met people returning from every part of the globe to the old country—from Australia, British Columbia, New Zealand, and all the British Colonies; none had done so well as they might have done, and might do, in Canada. This is the place for the man who can and will labor."

Take next the testimony of a farmer who has had unusual difficulties to contend with, the difficulties of

comparatively poor land. Mr. William Cavan, who lives near Toronto, south of Dundas street, says:—"At the time I took my land, nearly forty years ago, it was considered so bad as scarcely to be worth clearing and cultivation. It was very bad at first, but has been getting better, owing to cultivation, ever since. The greatest benefit I ever derived, was from lime—I go upwards of thirty miles for it, and give ten cents per bushel at the kiln. I always go for the lime in the winter, and store it till I want to use it, so that it is, when used, thoroughly airslaked. I spread on the land from twenty-five to thirty bushels per acre of the lime, as received from the kiln; by the time I use it, it is greatly swelled, and in fine powder. We spread it from the cart with spades and shovels, and it makes quite a show on the land. We always plough it in; we find the benefit from it for fully seven years. Mr. Dunn, the butcher of Toronto (now dead) was the person who first used it about us. He limed as he used to do in the old country, and put in a very large quantity. I asked him how it answered, and he laughed and said it answered too well, for it laid all the wheat and he lost the crop; but it convinced him that it was what the land wanted; and I then adopted the system, and have used it ever since, but moderately, and with the best effects. I plough in buckwheat largely, and manure all I can. I have always got thirty bushels of spring wheat per acre since the fall wheat failed, and other crops equally good. I am satisfied that lime is the best help to such soils as mine all through Canada. We are growing grapes all through our township; my neighbor put in three acres last year; and we are also, about Oakville, growing strawberries largely."

Mr. Cavan is a well-doing man; he says his crops get better and better all the time. The soil was originally a poor loam on hard clay, with very little black muck from the forest.

Here are the brief notes of a conversation with a farmer from the township of Haldimand, and the Hamilton plains, back of Cobourg. These statements, let it be remembered, are made by men who, besides maintaining themselves and their families in comfort, have paid for the land they own, from the profits acquired by farming it. Speaking of last year's crop, the farmer says:—"Our wheat on the plain land, both spring and fall variety, is very good, but short in the straw, and affords us but little manure. The quality of it is, however, excellent, and it is always formed before the midge can affect it. We manure with barnyard manure as much as possible, but we never have half enough, and we therefore use clover for manure—ploughing in the crop as soon as it is well in flower; then harrow it down, and keep the surface clear of weeds, till the time for preparing for fall wheat; then plough so as to turn the clover up again, and sow wheat. By this means, if the seed of the clover have ripened at all, we get a splendid plant of clover, in the wheat, without sowing it; but if the seed is not ripe, we have to sow clover with the wheat. For spring wheat we always plough our land in the fall; if ploughed in the spring, it is too light to bring a crop. We require the winter to settle it.

When the land is very much out of heart, we sow a crop of peas very early in the spring on fall-ploughed land; let them grow till just in flower, then plough under, and sow a crop of buckwheat, which is also ploughed under the same season, and is followed by spring wheat, and the first and second crop ploughed under. All who have followed this course have got rich. The intermediate years' cultivation are of the usual course and system.

This was a remarkably intelligent man, expressed himself well, and evidently understood what he was talking about. The plains to which he alludes consists of sand, on a hard poor clay; they are ploughed as deeply as possible, but any new soil that is brought up, must be so brought up by fall ploughing. If it is not exposed to the winter's frost, it will not allow the crop to grow.

These plains were at first very poor, but under this management have become very valuable land. Their crops are certain, and the quality of the grain excellent, generally from twenty to twenty-five bushels per acre, of the finest quality of white wheat. They take three crops of grain or other crops off before again ploughing clover or buckwheat under.

We might adduce other similar statements, but should be extending this article to unreasonable length. As evidence of a somewhat different character the following summary of farm accounts may not be out of place. They are not complete, nor kept, perhaps, on the best system, but they will serve to show the results of one year's farming. The farm to which they refer is a short distance from Toronto. It should be understood that it by no means claims to be a model farm either in condition or cultivation. There is no orchard attached, which is a serious drawback. The year referred to, except during the early spring, was dry, and in consequence the root crops were not heavy. Prices, however, for all produce were good. Barley and wool especially were above the average price. The amount by actual sales is set down, the remainder being retained for home consumption either by the stock or in the family. No account, therefore, is taken of the bulk of the dairy produce, or that of the garden and poultry-yard, which were used exclusively at home. The farm consisted of eighty-one acres in meadow or arable land, with about twenty in brush and pasture. From some portion—a low-lying bottom land—a few tons of hay were cut, and used by the stock. This is not set down in the following table. One cow bought for \$22, having slipped her calf, was fattened, and sold for \$50. The difference is set down as profit. No other stock were fattened for sale. Four hogs were fattened for home use. Of sixteen pigs, ten were sold, and six kept. Among the sheep, the wethers were sold in the fall for \$3 a piece. With regard to the extra help, much of it was secured by exchanging work with the neighbours, thus saving actual outlay. With this explanation, the following tabular statement of the year's expenses and receipts will, no doubt, be intelligible:—

RECEIPTS.				
Number of Acres.	Crop.	Yield.	Sold, the rest being retained for home use.	Amount received
10	Meadow	20 tons.	20 tons.	\$240 00
10	Clover & Timothy.	8 tons.	0	
12	2nd Crop.	12 tons.	4 tons.	60 00
10	Timothy.	180 bush.	120 bush.	129 60
10	Spring Wheat.	860	360	216 00
12	Rye.	14 tons.	84 00	
10	Oats	400 bush.	300 bush.	120 00
10	Peas.	200 bush.	140 bush.	112 00
5	Barley	110 bush.	110 bush.	88 00
2	Potatoes.	225 bush.	225 bush.	90 00
4	Turnips.	1500	0	
5	Green Crops consumed by stock.	0		
1	Gar. Vegetables consumed in house	0		
				\$1,139 60
STOCK ACCOUNT.				
Wool from 22 Ewes and 1 Buck, 100 lbs.....				\$47
Sold 18 Lambs.....				54
Kept 18 Lambs—value.....				54
2 Sows, 16 Pigs. Sold 10.....				80
Retained 6—value.....				18
Calves, 3.....				21
Butter—sold 80 lbs.....				12
Profit on Cow fattened.....				38
				274 00
				\$1,413 60
EXPENSES.				
Rent.....				\$300 00
Taxes.....				24 00
Seed.....				75 00
Manure (Superphosphate and Plaster).....				30 00
Hired man—8 months.....				120 00
Extra help in harvest and threshing.....				32 00
Mowing, 75 cents per acre.....				24 00
Threshing.....				20 00
Extra board for hired help.....				45 00
Blacksmith's bill for shoeing and repairs.....				25 00
Toll bars and market fees.....				10 00
10 per cent. on cost of stock and implements.....				6 26
				711 26
Total amount of Receipts.....				1413 60
" " Expenses.....				711 26
Balance of Profit.....				\$702 34

The above balance of profit, the result of no very extra farming or fortunate circumstances, will be allowed as a fair return for the year's labor, especi-

ally when to this sum is added the very important items of the flour, meat, vegetables, dairy and poultry produce for family consumption, which do not appear in the gross amount above set down. Better farming would be able to show a better balance—more returns from stock keeping, and larger yields of grain. Much might also be added, without very greatly increasing the annual expense, from the growth of fruit, the produce of the apiary, and other methods within the farmer's reach, whereby he may swell the sum total of his luxuries and his gains.

We hope to be able, at some future time, to present from other sources *bona fide* accounts, and other actual experience of farmers in various parts of the country, so as to convince the enquirer that the condition and prosperity of farming in Canada are really encouraging, and will compare favorably with any other new country.

Live Stock Insurance Company.

A MOVEMENT has recently been inaugurated to establish a new company, under the above title, with a view to afford farmers and stock keepers an opportunity of insuring themselves against loss by accident or death among their stock. This is a highly desirable object, and should be well supported by the farmers in the country. Many a poor farmer is crippled past remedy by the loss of a horse, perhaps during the busiest season of the year. In such a case, a policy in a company of this kind would enable him at once to replace his loss. The yearly expense of insurance is comparatively small—the advantages to those who possess valuable stock, and especially to those whose means are small, can hardly be over-estimated. We commend the new society to the notice of Canadian farmers. The Provisional Board of Directors at present consist of Thos. Stock, Esq., Hon. John Carling, Minister of Agriculture, R. L. Denison, Esq., F. W. Stone, Esq., John Walton, Esq., W. Hendrie, Esq., John Weir, Esq., and W. A. Cooley, Esq. These gentlemen have been appointed to procure an Act of Incorporation, and to make all the necessary arrangements to secure the proper organization of a Live Stock Insurance Company for the Dominion of Canada.

Act to Prevent the Adulteration of Milk.

AN important Act has recently passed the Legislature to prevent the adulteration of milk supplied to cheese factories, and makes provision against diluting the milk with water, depriving it of its cream, or the strippings, as well as against sourness and taint from want of due cleanliness and care. It is enacted that any two magistrates may convict the offender and enforce the penalty, which is to be not less than five dollars nor more than fifty for each offence, and in default of payment imprisonment for a period of not more than twenty days. Stringent regulations are imperatively called for to prevent fraud in this important matter, and we are glad that a measure which promises to secure the essential element of pure milk for the manufacture of cheese has been so promptly taken, and hope to see, in consequence of this and other changes equally needed, a marked improvement in the quality of Canadian cheese.

NEW AGRICULTURAL BILL.—This important Bill, somewhat altered in committee of the House, has now passed its third reading, and only waits the consent of Her Majesty's representative to become law in this Province. Until this necessary sanction is officially given it would be premature to publish the Act, but if the Governor's signature has not been obtained before this goes to press, it will probably not be many days delayed, and by the date of our next issue we shall be in a position to publish the Bill in full for the information of our readers in all parts of the Province, some of whom may not see the political journals, and to all of whom it will be a matter of convenience to have a copy of the Act to preserve for future reference.

Poultry Yard.

Spring Poultry Exhibition.

MANY of our readers will remember the two very successful Exhibitions of poultry held last year in this city, under the auspices of the Ontario Poultry Association. These exhibitions, and other operations of the Society, have already effected a marked improvement in the class of poultry kept on many farms. and are deserving of all encouragement by those interested in the progress of Canadian farming. The Society are preparing to hold another show this spring, and have issued their notices accordingly. We published, last fall, both the regulations and the prize list. As the former are in the main unaltered, we would refer intending exhibitors to the number of the CANADA FARMER for September 16th, page 217, of Volume 4, where they will find the terms of competition and rules in full. The date fixed for the coming exhibition is Wednesday and Thursday, April 15th and 16th. Entries close on Saturday, March 28th. Birds for exhibition must be at the Agricultural Hall not later than Tuesday, April 14th, by six, P.M. They will also be received on the Monday previous. The judges will commence making their awards at two, P.M, on Tuesday, April 15th, and specimens arriving after that hour will be too late for competition. A new feature in this year's exhibition is the addition of singing and fancy birds, in reference to which the following regulations are issued by the Society:—"Exhibitors in these classes must provide their own cages: the birds may be exhibited singly or otherwise. An entrance fee of fifty cents will be charged for each entry; and the whole amount of such fees will be awarded in prizes, to be apportioned according to the sum thus obtained."

Parties wishing to compete in any of the classes should apply to the Secretary, Mr. J. E. EHIS, Box 498, Post Office, Toronto.

Below we give the Prize List for the forthcoming Exhibition.

BIRDS TO BE SHOWN IN PAIRS—(vide Rule 14.)

- CLASS 1—Cochin Chickens: Buff or Cinnamon. 1st Prize \$1. 2nd Prize \$2.
CLASS 2—Cochin China: White or any other color. 1st Prize \$1. 2nd Prize \$2.
CLASS 3—Brahma Pootra: Light. 1st Prize \$1. 2nd Prize \$2.
CLASS 4—Brahma Pootra: Dark. 1st Prize \$1. 2nd Prize \$2.
CLASS 5—Dorking, Colored. 1st Prize \$3 given by Hon. G. Brown. 2nd Prize \$2.
CLASS 6—Dorking, White. 1st Prize \$1. 2nd Prize \$2.
CLASS 7—Spanish. 1st Prize \$1. 2nd Prize \$2.
CLASS 8—Game: (Black-breasted and other Reds.) 1st Prize \$1. 2nd Prize \$2.
CLASS 9—Game: (Duck-wing and other Greys and Blues.) 1st Prize \$1. 2nd Prize \$2.
CLASS 10—Game: (Any other variety.) 1st Prize \$1. 2nd Prize \$2.
CLASS 11—Hambury: Gold Pencilled. 1st Prize \$1. 2nd Prize \$2.
CLASS 12—Hambury: Silver Pencilled. 1st Prize \$1. 2nd Prize \$2.
CLASS 13—Hambury: Gold Spangled. 1st Prize \$1. 2nd Prize \$2.
CLASS 14—Hambury: Silver Spangled. 1st Prize \$1. 2nd Prize \$2.
CLASS 15—Hambury: Any other variety. 1st Prize \$1. 2nd Prize \$2.
CLASS 16—Polish: Black, with white crests. 1st Prize \$1. 2nd Prize \$2.
CLASS 17—Polish: Gold. 1st Prize \$1. 2nd Prize \$2.
CLASS 18—Polish: Silver. 1st Prize \$1. 2nd Prize \$2.
CLASS 19—Polish: Any other variety. 1st Prize \$1. 2nd Prize \$2.
CLASS 20—Houdan, Crève Cœur, La Flèche, and other French Fowl—(any age.) 1st Prize \$1. 2nd Prize \$2.
CLASS 21—Bantams: Gold or Silver laced. 1st Prize \$1. 2nd Prize \$2.
CLASS 22—Bantams: Clean-legged. 1st Prize \$1. 2nd Prize \$2.
CLASS 23—Bantams: Feather-legged. 1st Prize \$1. 2nd Prize \$2.
CLASS 24—Turkeys: Any variety or age. 1st Prize \$3 given by Hon. G. Brown. 2nd Prize \$2.

- CLASS 25—Ducks: Aylesbury—(any age.) 1st Prize \$1. 2nd Prize \$2.
CLASS 26—Ducks: Rouen—(any age.) 1st Prize \$1. 2nd Prize \$2.
CLASS 27—Ducks: Any other variety—(any age.) 1st Prize \$1. 2nd Prize \$2.
CLASS 28—Geese: Colored. 1st Prize \$1. 2nd Prize \$2.
CLASS 29—Geese: White. 1st Prize \$1. 2nd Prize \$2.
CLASS 30—Any other variety of Fowl not mentioned in above classes—(any age.) 1st Prize \$1. 2nd Prize \$2.

CLASS 31. Sweepstakes for Game Cocks of any age, to be shown singly, and not to compete in any other class.

A Sweepstakes of \$1 each will be opened for Game Cocks of any age or color. The stakes to be disposed of as follows: After deducting 30 cents from each entry for cost of pens, feed, &c., suppose fifty entries are received, the 1st Prize will be \$20, 2nd do 10, 3rd do 5. If a greater or less number than fifty are received, the Stakes will be divided in the same proportion.

PIGEONS.

BIRDS OF ANY AGE—TO BE SHOWN IN PAIRS, EXCEPT CARRIERS AND POUTERS.

- CLASS 32—Carriers: Cocks. Any color. Prize \$2.
CLASS 33—Carriers: Hens. Any color. Prize \$2.
CLASS 34—Pouters: Cocks. Any color. Prize, Together with Pigeon Book, given by Messrs. Chewett & Co.
CLASS 35—Pouters: Hens. Any color. Prize \$2.
CLASS 36—Tumblers: Short-faced. 1st Prize \$2. 2nd Prize \$1.
CLASS 37—Tumblers: Any other variety. (Two Pairs) 1st Prize \$2. 2nd Prize \$1.
CLASS 38—Jacobins or Fritts: Any color. 1st Prize \$2. 2nd Prize \$1.
CLASS 39—Fantails: Any color. 1st Prize \$2. 2nd Prize \$1.
CLASS 40—Earbs: Any color. 1st Prize \$2. 2nd Prize \$1.
CLASS 41—Turbits. 1st Prize \$2. 2nd Prize \$1.
CLASS 42—Trumpeters. 1st Prize \$2. 2nd Prize \$1.
CLASS 43—Dragons. 1st Prize \$2. 2nd Prize \$1.
CLASS 44—Any other variety of Pigeon not mentioned in the foregoing classes. 1st Prize \$2. 2nd Prize \$1.

SINGING AND FANCY BIRDS.

- CLASS 45—Sylvian Canaries
CLASS 46—Yellow
CLASS 47—Green or other Color
CLASS 48—Mules.
CLASS 49—Blackbirds.
CLASS 50—Thrushes.
CLASS 51—Woodlarks.
CLASS 52—Skylarks.
CLASS 53—Bullfinches.
CLASS 54—Goldfinches.
CLASS 55—Linnets.
CLASS 56—Fancy and other Birds not included in the above Classes.

BRAHMA POOTRAS.—Persons in want of good Brahma Pootra fowls, can be supplied, either with the birds or eggs, by applying to T. M'Lean, Esq., of Toronto, whose advertisement appears in the present issue.

NEW IMPORTATIONS.—We learn that some enterprising members of the Poultry Association are importing some fresh blood in the poultry line from England. Among the varieties that are looked for in the course of the Spring are specimens of La Flèche, Black Hamburgs, light Brahma Pootra, Duckwing Game, and Nankin Bantams.

WEIGHTS OF PRIZE POULTRY.—At the recent Birmingham and Midland Counties cattle show, the weights of some of the entries which may be properly termed farm poultry were as follows: Turkeys, cock and hen, exceeding one year old, 1st, 2nd, 3rd, and 4th prizes respectively, 50lbs., 46½lbs., and 42½lbs.; birds of 1867, 1st prize 36lbs. 13oz., 2nd 35lbs., 3rd 35lbs., and 4th 33½lbs. Geese, white gander and goose, exceeding one year old, 1st prize 54½lbs., 2nd 49lbs.; birds of 1867, 1st prize 44lbs., 2nd 41lbs.; grey and mottled, exceeding one year old, 1st prize 51lbs., 2nd 41lbs.; birds of 1867, 1st prize 45½lbs., 2nd 45½lbs. Ducks, white Aylesbury (drake and duck), 1st prize 18½lbs., 2nd 17½lbs., third 16½lbs.; Rouen, 1st prize 19½lbs., 2nd 18lbs., 3rd 18lbs., 4th 16lbs., 5th 17½lbs., 6th 15½lbs.

Entomology.

The Locust Tree Borer.

It is now seven or eight years since the Locust trees in the neighbourhood of Toronto began to be destroyed by this insect. A few stray specimens were occasionally captured by entomologists before that time, and then, with apparent suddenness, all the young Locust trees were found to be riddled by the grubs, and large numbers destroyed utterly. The young trees appeared to be their favourite object of attack, though they afterwards turned their attention to the older ones, and allowed few, if any, to escape. Most of the suburban residents of Toronto, who formerly rejoiced in the beauty and fragrance of their locust trees, have had to bewail the loss of these ornaments of their streets and gardens. And not only in town, but for many miles westward, the same destruction has taken place, only here and there a veteran tree remaining to remind us of the beauty that has gone.

This insect has been known to inhabit the State of New York for nearly a hundred years, its appearance and habits being recorded by some English entomologists of that time. About twenty years ago it was found as far west as Chicago, from whence it spread through Illinois and into Iowa. How far it has extended in Canada we do not at present know; we have taken it ourselves at Cobourg to the east, and beyond Hamilton to the west, but where else it has been found we know not. May we beg our correspondents in various localities to let us know whether they have taken it or not, that we may be able to trace out its geographical distribution in this country?

As usually happens, the mischief is done by this insect in its larval or grub state; in its mature or beetle state it feeds upon the pollen of flowers, especially upon the common Golden-rod (Solidago), in September. The grub is of a yellowish white colour, about an inch long, and the thickness of an ordinary quill, and is furnished with six minute legs. When young it appears to bore chiefly in the sapwood, but afterwards strikes off into the solid wood of the tree, perforating it in every direction. Its presence is early indicated by the little heaps of sawdust extruded from the holes, and accumulated about the base of the tree.

In its perfect state the borer is a handsome black and yellow, somewhat wasp-like beetle (Clytus flexuosus, Fabr.; pictus, Drury; robinia, Forster). It is from half to three-quarters of an inch in length, and nearly cylindrical in form.

Its general colour is deep black adorned with yellow stripes; on the head and thorax these stripes form narrow transverse bands, but on the elytra the first stripe is slightly flexuous, the second zig-zag, forming a letter W across the wings, the next three wavy and broken; there is also a yellow dot at the tip, and stripes on the sides of the abdomen of the same colour. Its antennae are long and many-jointed, and of a tawny colour; the legs are of the same hue.

As non-entomologists are apt to confound all insects of this class under the comprehensive name of "the Borer," and hence imagine that it is one and the same insect that infests trees of every kind, it is well, perhaps, to mention that this beetle confines its attention to the locust tree (the hickory is preyed upon by a very similar insect, hitherto thought to be identical, but now shown by Mr. Walsh to be different in its larval state). There is no danger whatever of this insect attacking apple, plum or other fruit trees, after it has got through with the locusts.

If God could take pains to create an insect, man may take pains to study it, without lowering his dignity.

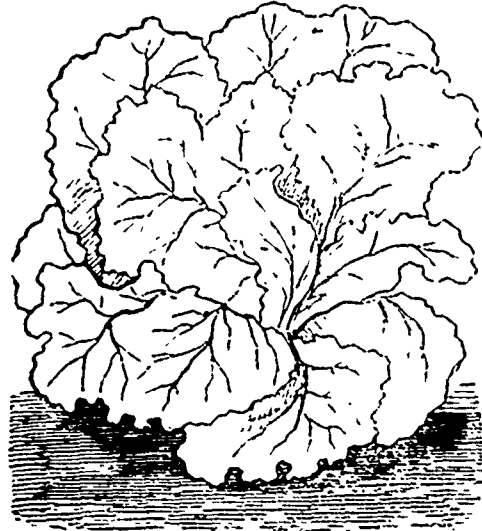
There are probably ten times as many species of insects in the whole world as of all other animals put together. Hence, the Entomologist holds no sinecure office.



Horticulture.

Varieties of Lettuce.

The effect of cultivation in modifying and developing the properties of plants is well illustrated in our garden vegetables, which many would entirely fail



DRUMHEAD.

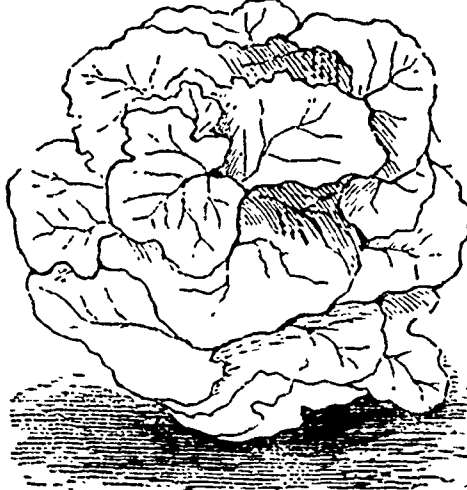
to recognize in their wild and natural state. As an instance in point we may mention the subject of this article, the lettuce (*Lactuca sativa*), a plant in its normal condition of a spindle growth, furnished with comparatively few leaves, of small size, and no special peculiarity to indicate the crisp and delicate texture which cultivation has developed. A wonderful variety, moreover, has been attained in the culture of this vegetable. A gentleman in England, during the course of the past year, wishing to investigate the distinctive characters of some of the best kinds of lettuce, applied to well-known nurserymen for seed of various samples, and, to his surprise, found his collection amounted to no less than eighty varieties. The seeds were sown about the middle of April, and as soon as the plants had attained sufficient size they were removed, and set in a carefully prepared bed, which had been deeply dug, and supplied with a liberal manuring of stable manure, with a top dressing of wood ashes. One row each of all the varieties was



BATAVIAN BROWN.

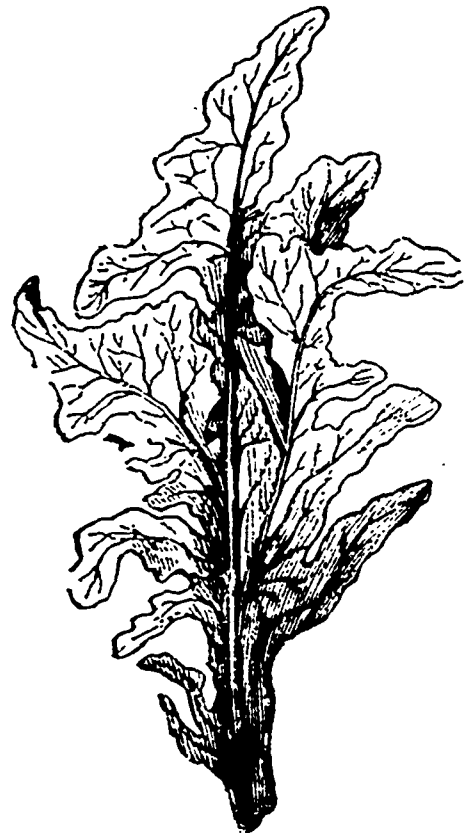
thus planted in a bed sixty feet long. The gentleman referred to published the results of his observations in the *Gardeners' Magazine*, from which we extract the following account:—

"Lettuces may be primarily divided into two classes:—1. CABBAGE LETTUCES. 2. COS LETTUCES. The varieties in the first section are more or less round-headed and spreading, and in flavor less sweet and succulent than the Cos varieties, though many of them are notable for a delicate nutty or buttery flavor, and all of them are good for mixed salads. The varieties in the second section are usually upright or oblong, and when well blanched, either by tying or by their naturally close growth, are generally elegant in appearance, and of a welcome, crisp, and sweetish flavor. There are some very badly-flavored varieties to be found in this class, but as a rule they are the best lettuces to eat without dressing, *par et*



TRATOR, LARGE GREEN.

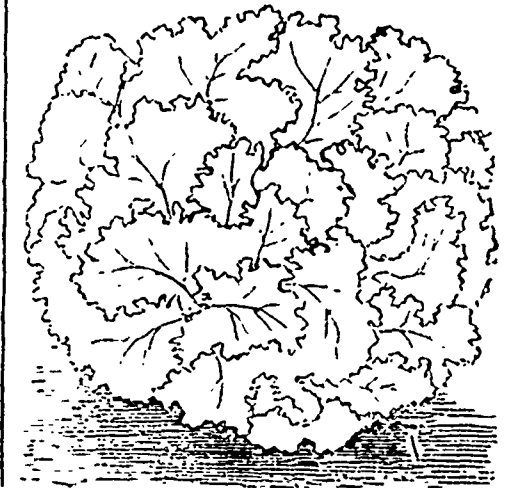
simple; whereas the drier and more nutty-flavored cabbage varieties are better adapted for dressing, and especially for mixed salads. These two classes may be again sub-divided, in order to separate the colored varieties from the green, and again they may be sub-divided in order to present to the cultivator groups of varieties adapted for particular purposes, some being well suited by their hardness for autumn sowing; others, by their capability of enduring heat



SPINAUGE, OR OAK LEAF

without hastening into flower, being well suited for sowing in spring, to afford supplies during the hottest period of the summer."

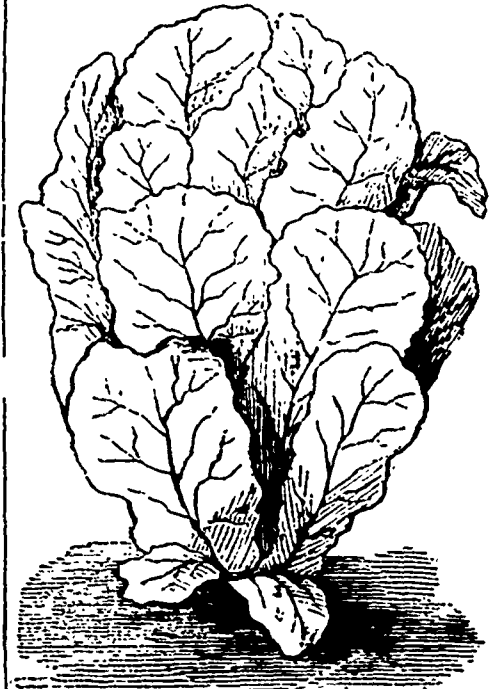
We cannot, in the limits of this brief article, give the characteristics of more than a few of the leading varieties, which are figured in the accompanying illustrations. Amongst the cabbage lettuces we shall notice first the *Drumhead*, the subject of the first illustration, a variety which the writer already quoted thus characterizes:—



EARLY SILESIAN.

"DRUMHEAD.—A green variety; leaves broad or oval deeply wrinkled, pale cheerful green, rather upright in growth, and forms a large loose heart, which is always crisp, sweet, succulent, and equally good for the bowl or for eating undressed. Ready for use July 1st, and lasting twenty days. A first-rate variety, which may be obtained in perfect condition from the beginning of June to the end of November, and even till after Christmas in extra mild seasons. This is to be accomplished by sowing early in a gentle heat, and planting out when the season is sufficiently advanced to allow of it, and continuing to sow successive rows in the open ground until the middle of July."

The second figure represents another cabbage lettuce, which is thus described:—"TRATOR, LARGE GREEN.—A green variety, with broad leaves, almost smooth, curling back, light grass-green; forms a very cabbage-like loose heart; in flavor dry and nutty. Ready for use July 5th, and lasting about ten days. Third-rate."



GRAY PARIS COS.

Of the next variety in the same class, here represented, the following account is given:—

"EARLY SILESIAN.—A green variety, of spreading habit, forming a round flat tuft; the leaves broad,

much curled, and pitted; bright light green, extremely elegant. It forms a loose heart, and the outer leaves are nearly as good as those within, so that if used at all, it is nearly all fit for use. This is a dry, tough, and almost tasteless lettuce, good for the bowl, but unfit for any other purpose. Ready July 10th, and lasting fourteen days. A third-rate variety."

The lower centre figure represents a variety more remarkable than valuable.

"THE SPINAGEE OR OAK-LEAF.—A green variety, curious and distinct, the leaves being long and deeply lobed, and remotely resembling the leaves of the common oak; pale green. This variety does not form a heart, and appears to be utterly useless, though when shredded with other vegetables it may make a bearable ingredient in a salad. Previous to flowering it was almost ornamental. It was in flower July 15th, and then had the appearance of a worthless weed. It is the *Lactuca quercina* of the botanists, a plant altogether distinct from *L. sativa*."

Now come to a lettuce of more value than the two or three preceding, and forming in its appearance and habit a transition between the Cabbage and the Cos Lettuces. This is represented in the fourth illustration, and is named

"DUTCH BROWN.—A brown variety. Leaves large, oblong, curled and wrinkled; deeply pitted, so as to appear warty on the inner side; dull green, with tinge of brownish bronze at the edges. Growth large and loose; does not require tying; forms a large loose heart, which is juicy, mild, crisp, and slightly sweet. Ready July 6th, and lasting fifteen days. A good lettuce, but covers too much ground. A second-rate variety."

The last example here given, is one of the best of the Cos Lettuces. The GRAY PARIS COS. A green variety, with long rugose leaves of a light green color on the inner side, grayish green on the outside; growth peculiarly upright and compact. The leaves of this variety are shell-shaped, and they turn in round the heart and render tying quite unnecessary. The heart is large and close, crisp, tender and delicate. Ready July 12th, and lasting eight days. A peculiarity of this variety, by which the genuineness of a sample may be tested, in addition to the tests furnished by the foregoing description, will be found in the peculiar rugosity of the leaf, which, when viewed across the surface, presents an almost regular zig-zag line, thus,

There are several others of this class of lettuce, pronounced of first-rate quality; at the head of all, perhaps, may be mentioned the Brown Bath, which has many most excellent qualities, serving equally well for spring or autumn sowing, and well adapted to supply lettuce throughout the year.

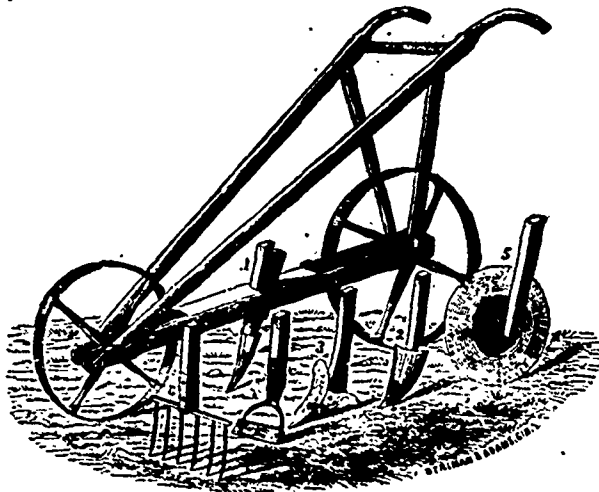
Machinery Applied to Horticulture.

We have received from Messrs. A. T. Bates & Co., of Chicago, a new implement, known as "Crawford's Garden Cultivator," which, although we have not as yet been able to test it, appears to be a most valuable labour-saving machine, and well worthy the attention of horticulturists. A garden does not pay pecuniarily unless the proprietor and his family can work it themselves. It pays as a matter of taste, refinement and beauty, and is well worth all it costs for the enjoyment it yields, when it is cultivated by hired labour. But it is desirable that every dwelling should have its garden attached, and that the occupants of the dwelling should till their plot of land themselves, and so make it a source of profit as well as pleasure. The application of labour-saving machinery to horticulture lags far behind its application to agriculture. Beyond the manufacture of nice handy spades, rakes, hoes, one-horse ploughs, and adjustable cultivators, very little has been as yet done to lessen and lighten hand labour in the garden. Any invention that will do this to any considerable extent will be

hailed by multitudes who take delight in a garden, but have not much time to spend in it themselves, and cannot afford to hire.

From an inspection of this machine, and a perusal of the testimony of parties who had it in use last season (the first it has been before the public), we are strongly tempted to cry "Eureka!" over it. This, of course, we shall not do until the frost is out of the ground and we can try its capabilities for ourselves. Meantime we may state that the manufacturers warrant it to do the work of four to six men: that several who have tested it say it will do more: and that among those who strongly recommend it, after actual use, are such names as W. A. Fitch, of the *American Agriculturist*, S. E. Todd, *Agricultural and Horticultural Editor N. Y. Times*, Dr. J. A. Warder, and Judge Taylor.

Our engraving gives a very good representation of this implement. It will be observed that it has two wheels, one following the other, and serving as bearings between which the tool for particular work is fixed. This enables the operator to regulate the depth of cultivation and keep it uniform. The engraving shows inserted in the beam (No. 1), a small tongue or shovel plough. This can be replaced by either of the other tools represented, or by any that ingenuity may devise. No. 2 is a larger shovel plough. No. 3 is a small double mould-board plough for hilling up between rows of plants. No. 4 is a



scuffle hoe for cutting up weeds. No. 5 is a circular knife for cutting off the runners of strawberry plants. No. 6 is a rake or cultivator, for smoothing the surface or stirring the soil as it is set high or low in the beam. After the ground is ploughed in the spring, all the subsequent culture may be done with this implement.

We believe we are doing a service to Canadian horticulture in introducing this garden machine to our readers, and we doubt not that many among them will be induced to give it a trial the coming season. Its price is not extravagant, sixteen dollars, American money. Parties desiring to obtain this implement will remit the amount just named to A. T. Bates & Co., 195 Washington Street, Chicago. Or if they prefer to avoid the risk of sending money by mail to the United States, they may remit twelve dollars in Canadian money to Editor CANADA FARMER, Box 498 P.O., Toronto.

Toronto Horticultural Society.

THE annual meeting of the Toronto Horticultural Society was held on Thursday evening, Feb. 15th, in the Mechanics' Institute, Toronto, the President, the Hon. G. W. Allan, in the chair. In his opening address the President congratulated the society on their improved financial condition, being able to report that all the floating liabilities had been paid. This state of affairs was mainly due to the success of the concerts which had been given in the Horticultural Gardens during the summer, and great credit was

due, he considered, to the members of the committee for their indefatigable efforts, which had placed the society in its present prosperous financial position. He hoped that the members of the society, and the citizens generally, would heartily co-operate in promoting still further the important objects of the society, and that they might, ere long, be able to carry out a project which had been long cherished by himself and others, of erecting, in place of the present temporary building, a permanent winter garden, which could not fail to be a source of delightful enjoyment to the inhabitants of the city. He regretted that the corporation had not done more towards defraying the expenses of the gardens, but trusted that, in view of the liberality of those who had handed over these grounds for the free use of the citizens, they would be stirred up to render more efficient support, and by at least defraying the current expenses of the gardens, enable the society to devote their funds to still further improvements and extension. He hoped, also, that greater interest and more general competition would be displayed in the exhibitions of the society, which had not hitherto received the encouragement which they deserved. In referring to the Gardeners' Improvement Society, he urgently recommended them to resume their monthly meetings for discussion, and pointed out the advantage and interest which amateurs would derive by co-operating with professional horticulturists, both in attending such meetings, and promoting the general objects of such associations.

The Rev. E. Baldwin then read the annual report. This official statement recorded the satisfactory financial position of the society, referred to in the President's address, giving the credit to the efforts of the committee, and the success of the concerts. The claims of the society on the corporation and citizens generally were clearly set forth. It stated that by an agreement made in 1865 the corporation engaged to grant \$300 towards the expenses of the gardens, as well as the free use of five acres of land adjoining, on the condition that the gardens should be open to the public. This amount did not more than pay the gardener's salary, leaving all other current expenses to be met by the society. For the first two years after the above agreement the city had given an extra sum of \$200 towards these

expenses, but during the past year had only paid the stipulated sum of \$300, a sum wholly inadequate to meet the ordinary expenses, and very small compared with the amount raised in various ways by the Horticultural Society, and expended for the benefit of the public. In the words of the report:—

"It is not, however, reasonable to suppose that a committee of citizens will labour year after year just to make the current expenses of the Gardens. These should, in all fairness, be met by the grant from the city corporation.

"We trust that a liberal policy will prevail in the Council towards this society, and that as it is now happily entirely free from all floating debts, the city will, by an extra grant of \$300, making \$600 in all, allow the Directors to devote all their energies to the removal of the mortgage which still burdens the land, and to that improvement of the grounds which may make them a credit, not only to the city, but to the Province at large.

"Your Directors would also draw the attention of the members of the corporation to a fact which they fear is much overlooked, and which in their judgment gives the society a good claim to generous treatment at the hands of the city.

"In the throwing open of the Botanical Gardens to the public, the citizens of Toronto generally obtained the free use without cost of the five acres of ground, of the value, when given to the society by the Hon. G. W. Allan, of \$30,000, the preparation of which for the purposes of a Garden, cost the members of the Horticultural Society less a sum than \$7,000.

"Your Directors have never lost sight of the long-contemplated erection of a Winter Garden, which would not only be a source of gratification to the citizens, but of revenue to the society; but at present it cannot be attempted.

"In reference to the subject of exhibitions, the report stated that during the season one Horticultural Exhibition, under the management of the Toronto Electoral Division Society, was held in the Gardens. On this subject we must express our regret that the contributors to these exhibitions are so few in number, and that the citizens of Toronto manifest so little interest in these annual displays. So slender, in fact, is the support which the intelligent and wealthy people of Toronto give to the pure and elevating science of horticulture, that we notice with regret that the Electoral Division Society is compelled this year to forego its spring exhibition, as it has usually been held at a great expense to the Society; and if that one which was held in your grounds in the course of last summer was remunerative, it is to be attributed rather to the people's fondness for music than to their appreciation of the efforts of horticulturists. Though at present far behind the good people of Hamilton in the promotion of horticulture, we trust that the day is not far distant when the people of this capital city of Ontario will awake and bestir themselves, and place Toronto where she ought to be—at the head of every movement designed to promote any science that tends either to the innocent gratification or elevation of the people of this Province."

The report concluded with a just tribute to the memory of the late Judge Harrison, who had always been one of the warmest friends and supporters of the society.

The Treasurer's report showed a balance in the hands of the committee of \$217 12.

The adoption of the report, moved by Professor Croft, and seconded by R. Lewis, Esq., was carried unanimously.

Alderman Harman, in proposing the officers of the society for the ensuing year, expressed his regret that the corporation, in consequence of many other pressing claims, had not been able to extend a more generous aid to the society—said that he himself was in favour of a liberal policy, and hoped that more would be done for so laudable an object by the body of which he was a member and representative.

The resolution of Alderman Harman was seconded by Alderman Vickers, and the following officers were then elected:

PRESIDENT.—The Hon. G. W. Allan.

1ST VICE-PRESIDENT.—Geo. Leslie.

2ND VICE-PRESIDENT.—James Fleming.

TREASURER.—Jas. E. Ellis.

RECORDING SECRETARY.—Geo. Leslie, Jr.

CORRESPONDING SECRETARY.—Walter S. Lee.

DIRECTORS.—Wm. Ince, Rev. E. Baldwin, John Gray, A. McNab, F. W. Coate, P. Armstrong, J. A. Simmers, Geo. Vair, Prof. Buckland, T. D. Harris, John Paterson, J. Forsyth, J. Gibson, Samuel Platt, and Rice Lewis.

AUDITORS.—W. Edwards and Hugh C. Thomson.

Sheriff Jarvis moved the next resolution, seconded by Alderman Clements—That the thanks of this society are due and hereby tendered to the President and office-bearers for their valuable services rendered during the year.

The resolution was carried.

After some discussion in reference to the expenses of the society and other matters, the gentlemen present adjourned into an adjoining apartment, where refreshments were provided by the President, and further opportunity afforded for pleasant social intercourse.

To contribute to the pleasure and instructive character of the meeting, the President laid on the table many objects of interest to lovers of horticultural and kindred pursuits. Among these were a very ancient copy of a work on Forest Trees, entitled "Sylva," an extensive herbarium of dried plants, and a beautiful collection of ferns; besides the splendidly illustrated work of the naturalist Gould on Humming Birds, and other books. The Rev. E. Baldwin also exhibited a finely preserved bunch of grapes. The meeting was well attended, and passed off very pleasantly. We heartily commend the objects of the society to all concerned, and trust the liberality and energy of the President and Committee will be especially seconded by the citizens of Toronto, who are by no means, however, the only parties interested in the prosperity of the society.

ORCHARD WASH.—A correspondent from Hamilton recommends the following:—Take sal. soda and heat to a red heat. To one pound of sal. soda, add one gallon of rain water. Unlike potash, it will not injure live portions of the tree, but will destroy all the fungi, cocoons and ova of insects. This is the best tree wash known.

A fruit-grower in the State of New York recommends farmers to raise their own apple and other fruit trees. He says if they will plant the seeds and graft them on the spot, they will prove healthier, hardier, and more productive, than if obtained from the nurseries.

The editor of the *Gardener's Monthly* contends that mildew in the grape is caused by wetness of soil, and cites various proofs; among the rest, the European custom of planting grapes on hill-sides, a practice justified by the proverb that in such locations vines will not "get wet feet."

HOW TO TRAIN THE STANDARD CURRANT BUSH.—"Peur" sends the following from Hamilton:—As soon as the leaves fall, take the best cuttings; cut out all the lateral eyes and buds, leaving only two or three at the top; plant in good rich soil about half their length. They will soon grow up a single pretty shaped tree, three feet high. If you want them higher, cut the lower eyes and buds off again, and you will have beautiful currant trees, five or six feet high. The fruit is larger and much better, and out of the way of poultry. Gooseberries can be raised in the same way, and you have better fruit and no mildew.

LINDSAY HORTICULTURAL SOCIETY.—The Lindsay Horticultural Society held their first annual meeting at Lindsay on the 4th of Feb. Mr. Wood, the President, in the chair. The report of the directors showed a satisfactory state of the finances and a prosperous condition of the society. A good exhibition had been held in the month of June; and another in the fall, in connection with the County Agricultural Society. The number of entries in the first show amounted altogether to one hundred and thirty. In the fall the entries were for roots and vegetables, 120; fruit, 46; flowers, 22. This second exhibition especially is reported to have been of a very excellent character. An earlier time than the beginning of October was, however, recommended for future horticultural shows. The officers for the current year were elected, and a resolution adopted to endeavour so to alter the new Agricultural Bill that horticultural societies shall be on the same footing as agricultural societies.

PITCHER PLANTS.—When visiting Messrs. Veitch & Son's Royal Exotic Nurseries the other day, we were forcibly struck by the splendid collection of pitcher plants (*Nepenthes*) growing in one of the low span-roofed houses. It is well known that this establishment has in recent times been foremost in possessing a rare stock of these wonderfully singular plants, mainly originating through the skilful hybridization of Mr. Domin's efforts. It is not of the varieties that we intend to discourse upon, else we would have selected a different mode of presenting the matter to our readers, but it is of the mode of cultivation adopted. The pitcher appendages were hanging in hundreds, offering quite a feast to the plant-loving eye. The plants had been planted into wood baskets, after the manner of air plants (orchids), and suspended from the roof of the house; and nothing could be in more luxuriant health or more productive. This is evidently the best mode of cultivating pitcher plants, and all our readers who hold one or more of the family would do well to profit by the hints suggested. Under the most successful pot-culture system we never saw such results.—*Farmer* (Scottish).

QUERY IN GRAPE GROWING.—A subscriber writes: "The *Gardener's Chronicle* says, speaking of Mr. Thomas Methven's nurseries, Edinburgh: 'Vines in pots are vastly on the increase; every one appears to be able to grow vines from 'eyes' well now-a-days, so that the purchaser may fruit them the following year. This was not always the case, but by skilful practice we are now able to get the plants in a condition from which a maximum result can be obtained.'

"Can any of your correspondents inform me how this can be done? Vines from layers are easy enough,—but to ensure fruit from 'eyes' planted the previous year, seems almost impossible. I should be glad also to have full particulars as to the earth, and manure, advisable to ensure success in vines growing in pots.

"Mr. Methven winters his vines in pots in a large wooden shed with the best effects. Could not the same thing be done in Canada, in root houses and cellars—thus ensuring amateurs, who may live in rented houses, fruit from their own vines?"

The Household.

Cheap Deodorizer.

A CORRESPONDENT from Lakesfield sends us the following receipts, which we have no doubt will be found efficacious. Charcoal or carbon is one of the best deodorizers and disinfectants; the solid constituent of smoke is carbon in a state of very fine division, and therefore in an excellent condition for attracting and absorbing organic and other impurities. The first receipt is:—

TO PURIFY BARRELS OR ANY TAINTED VESSEL.—Scour thoroughly with hot water, then with water in which half a pound of sal. soda has been dissolved, or with weak lye of wood ashes. Let this water remain till cold; rinse and let the vessel stand out in the sun and wind till quite dry. Put a good quantity of dry cedar bark on any old pan at the bottom of the barrel, and set it on fire so as to make a good smoke: when the flame has died out, cover the vessel over with any old rug or sack to keep in the vapour, and let it remain thus a day or two. Wipe the barrel out and remove the ashes, and the taint will have disappeared. The smoky flavour that remains will not injure the meat.

TO PURIFY CELLARS.—A simple process for removing the sour smell of a cellar in which vegetables have been stored. After thoroughly clearing away any old decaying vegetables that may remain in spring, burn a lot of cedar bark on the floor, taking the necessary precautions against fire; let the smoke fill the cellar for a little while; then open and air it; sprinkle dry sand or lime rubbish, sifted over the floor, and your foul cellar will soon be sweet again. A few lumps of charcoal placed in any cellar would save much sickness. These remedies are so simple and so easily obtained that they are in the power of the poorest backwood settler. Bad meat and foul cellars are a prolific source of the fevers and agues so prevalent in new settlements.

Starch, Arrowroot, Sago, and Tapioca.

ALL the above are only synonyms for one and the same substance, that of starch, the difference between them being mainly that occasioned by the differing proportions of the constituents, and the presence of more or less foreign matters. Starch is a component of many articles of food, all the farinaceous vegetables containing a large proportion. That manufactured variety known as corn starch, is prepared from the maize called the "white flint." Before being ground, the corn is soaked in vats, and then is run through the stones with water. The mass is then filtered and the residue is dried in a kiln until all, or most of the water is evaporated, when it is again ground to a dry powder.

Arrowroot is a term loosely applied to the starch extracted from a number of roots and cereal products, as the maranta mandioca, tacca, arum, potato, etc. That from the maranta of the East and West Indies is the true arrowroot, but much of that in commerce is from other substances. It is a simple food, very nutritious, containing no nitrogen, and well adapted for producing adipose matter or fat.

Sago is a farinaceous substance prepared from the pith of a species of palm growing on the islands and main land of the Indian Archipelago. To obtain it the tree is felled and the trunk split. The pith is then removed, macerated with water, and beat with paddles, when the woody fibres separate and float. These being removed, the grains settle and the flour or grain, after being dried, is sifted and then generally bleached with chloride of lime. Pearl sago is prepared from the ordinary sago by being heated on an iron surface. In cold water neither forms of the sago are solvent, but only in hot water, when they form a thick starch-like solution, and make an excellent and very nutritious food.

Tapioca is prepared from the root of the mandioca or cassava, grown in the West Indies, South America, and some parts of Africa. The root grows sometimes to the weight of thirty pounds. It contains, with the

starch, a large proportion of a poisonous, milky juice, containing hydrocyanic acid and an acrid bitter substance. The poisonous principle is used by the inhabitants of northern South America, to poison thorn arrows thrown from their *pucanas*, or blow guns, for the killing of game. The root is brought from the maudicoa patch and then washed and peeled. The peeling is usually performed by the teeth; after that the root is grated, the grater being a wooden slab about three feet long, a foot wide, slightly hollowed, and set in diamond shaped patterns with sharp pieces of quartz. The grated pulp is then partially dried on a sieve and placed in a long cylindrical basket of elastic fibres. One end of this basket is affixed to the limb of a tree or a stout peg in the wall and a pole passed through a loop on the lower end. One end of the pole is rested under some projection, and the Indian woman seats herself on the other end as the power. Her weight draws the sides of the basket together until it assumes the shape of an inverted cone. The milky juice drops into a vessel placed to receive it. The pulp is then removed and dried in a kiln or oven. This pulp is known as *semonilla*, and used for bread. The poisonous liquid deposits the starch known as the tapioca of commerce. This deposit is dried either in the sun, or by rude kilns, and granulates, as is seen in that so extensively used for puddings. Sometimes it is denominated Brazilian arrowroot, but under whatever name, it is the product of a root which in its natural state is one of the most virulent of poisons.

It is almost impossible to believe that one of the most nutritious and palatable of the elements of our cuisine should be derived from one of the most fatal poisons known in the vegetable kingdom, yet such is the case.—*Sci. American.*

A GOOD MIXTURE FOR LEATHER.—One pint of tanner's oil, one pint of linseed oil, one pint of fallow, one pint of lard. Simmer all together.

HOW TO MAKE SOFT SOAP.—A WASH FOR ALL PURPOSES.—The following is endorsed by a subscriber:—Take two ounces of borax, two ounces of sal. soda, one pound hard soap; dissolve in one quart of rain water; simmer only, and it is ready.

LATEST BONNET.—The *Maine Farmer* informs its readers that "the latest prescription for a fashionable bonnet, originating from a country milliner, is to take a medium-sized pumpkin seed, carefully cut out the meat on the under side, put a narrow strip of fur around the edge, and fasten the strings to the sides. The broad end of the bonnet should be worn in front, to keep off the sun and wind."

SUGGESTIONS TO PREVENT FIRES.—Keep matches in metal boxes, and out of the reach of children; wax matches are particularly dangerous, and should be kept out of the way of rats and mice; be careful in making fires with shavings and other light kindling; do not deposit coal or wood ashes in a wood vessel, and be sure burning cinders are extinguished before they are deposited; never put firewood upon the stove to dry; never put ashes or a light under a staircase; fill fluid or spirit lamps only by daylight, and never near a fire or light; do not leave a candle burning on a bureau or chest; always be cautious in extinguishing matches and other lighters before throwing them away; never throw a cigar stump upon the floor, or spit-box containing saw-dust or trash, without being certain that it contains no fire; after blowing out a candle, never put it away on a shelf or anywhere else, until sure that the snuff has gone entirely out; a lighted candle ought not to be stuck up against a frame wall, or placed upon any portion of the woodwork in a stable, manufactory, shop, or any other places; never enter a barn or stable at night with an uncovered light; ostlers should never smoke about stables; never take an open light to examine a gas-meter; do not put gas or other lights near curtains; never take a light into a closet; do not read in bed, either by candle or lamp light; place glass shades over gas-lights in show-windows, and do not crowd goods too close to them; no smoking should ever be permitted in warehouses, especially where goods are packed or cotton stored; the principal register of a furnace should always be fastened open; stove-pipes should be at least four inches from wood-work; and well guarded by tin or zinc; rags ought never to be stuffed into stove-pipe holes; openings in chimney-flues for stove-pipes which are not used, ought always to be securely protected by metallic coverings; never close up a place of business in the evening without looking well to the extinguishment of lights, and the proper security of the fire; when retiring to bed at night, always see that there is no danger from your fires, and be sure that your lights are safe.—*Builder.*

Poetry.

How we Set the Steam to Work.

(WRITTEN FOR THE CANADA FARMER.)

We have robbed the mine, we have kindled the flame,
And lighted the fire so bright;
We have made a prison the strongest on earth,
To hold in the "water spite."

For the spirits is lazy, and roams abroad,
In the river, the spring, the sea;
He will sing, and bubble, and murmur about,
But never to work will be.

Let us hum at large, let him run down hill,
Let him roam where'er he list,
And he aimlessly rushes to and fro,
He exhales in fogs and mist.

But we want him to work wherever we will—
He is strong, and our muscles will save,
So we fasten him up in an iron box,
And force him to be our slave.

And we light the fire, and torture him well,
Till he kicks and screams like mad—
I will get out of this nasty hole:
Be quiet; you hurt me bad."

Then out he comes, with a rush and a roar,
In a scalding cataract shower.
"Very well," quoth we, "come out if you will,
Provided you yield us power."

And we guide him, and turn him, and twist him about,
In a narrow and straitened road,
And we make him to pull, and struggle, and shout,
Till he moves the heaviest load.

So he turns the mill, and works the mine,
And he takes our ships to sea;
He ploughs the land, and he moves the sand,
And he mows the meadow tea.

We found him cold, we have made him hot;
He was slow, and weary, and wet;
We move him about from place to place,
And we make him puff and sweat.

Aha! old sprite, we have got you now,
And never will let you loose;
We have you enchained, and will manage your powers,
By the wheel and the iron noose.

Toronto, 20th December, 1867.

The Apiary.

Introducing Italian Queens.

A SAFE and perfectly reliable method for introducing Italian Queens is as follows:—

When the Italian queen arrives, put her into the wire cage sent with her, and tie firmly over the end of it a piece of old factory cotton. This should be done in a close room; then, if the queen happens to fly, she cannot escape. Now find and destroy the black queen; then cut out, from a card of comb, a piece the size of the queen cage, but one inch longer; insert the cage so that the bees can get at the factory cotton. The cage should always be inserted near the centre of the combs, or where there is brood, so that the bees will be sure to cluster about it. Within forty-eight hours, they will generally liberate her by eating through the cotton, and she will be received all right—no further attention being required. But should it so happen, at the end of forty-eight hours, that they have not eaten through the cotton, a small opening may be made through the cotton, with a pocket knife, so that the bees can enter the cage if they wish. It is well to smear the cage and the cotton with a little honey, after it is inserted into the comb, in order to attract the bees to it; a few drops are sufficient. This method may be practised at any season of the year, and the cage with the Italian queen may be inserted immediately, on removing the old black or native queen.

If the bees are in a common box or straw hive, they must be driven out, the old queen captured, the cage inserted between the combs, and the bees returned. In searching for the black queen in a frame hive, it is better to smoke the bees but little, as much smoking will frequently cause the queen to leave the combs and run on the sides of the hive, where it is more difficult to find her.

Miscellaneous.

Ten Follies.

To think that the more a man eats the fatter and stronger he will become.

To believe that the more hours children study at school the faster they learn.

To conclude that if exercise is good for the health, the more violent and exhausting it is, the more good is done.

To imagine that every hour taken from sleep is an hour gained.

To act on the presumption that the smallest room in the house is large enough to sleep in.

To argue that whatever remedy causes one to feel immediately better, is "good for" the system, without regard to more ulterior effects.

To commit an act which is felt in itself to be prejudicial, hoping that somehow or other it may be done in your case with impunity.

To advise another to take a remedy which you have tried yourself without making special inquiry whether all the conditions are alike.

To eat without a appetite, or continue to eat after it has been satisfied, merely to gratify the taste.

To eat a hearty supper for the pleasure experienced during the brief time it is passing down the throat, at the expense of a whole night of disturbed sleep, and a weary waking in the morning.

AN OYSTER TAKES THREE TIMES AS LONG TO GROW AS A SHEEP. The creature must actually be four years old before he is fit for the table, whereas we can get very good mutton now-a-days in thirteen months.—*Farmer (Scottish.)*

FALLING IN LOVE.—Sam Slick says:—"If you want a son not to fall in love with any splendid gal, praise her up to the skies, call her an angel, say she is a whole team and a horse to spare, and all that. The moment the critter sees her he is a grain disappointed, and says, 'Well, she is handsome that's a fact; but she is not so very everlastin' after all.' Nothing damages a gal, a preacher, or a lake, like over praise. A horse is one of the onliest things in nature as is helped by it."

GROWTH OF GREAT BRITAIN.—In 1801 the population of the United Kingdom was 15,902,322; in 1811, 18,103,492; in 1816, 19,520,488; in 1826, 22,575,495; in 1832, 21,135,422; in 1836, 25,106,261; in 1846, 28,002,094. Then came the Irish famine and extensive emigration, so that in 1851 we have the population down to 27,493,337; in 1856, 28,011,031; in 1861, 28,971,362; in 1862, 29,204,983; in 1863, 29,768,089; 1864, 29,566,316; in 1865, 29,768,089; in 1866, 29,946,058; and in 1867 it had reached 30,157,239, notwithstanding the drain by emigration continually going on.

Advertisements.

JONES & FAULKNER,

(Late J. Jones & Co.)

Dairymen's Furnishing Store!

DEALERS IN BUTTER AND CHEESE,
No. 141 Genesee Street, Utica, N. Y.

DAIRY necessities of every description always on hand, particularly Pure Annatto, an article in much request among dairymen.

Special attention given to Canadian orders.

v4-19-1f

MILLER'S

INALLIBLE



TICK DESTROYER FOR SHEEP!

DESTROYS the TICK, cleanses the skin, strengthens and promotes the growth of the wool, and improves the condition of the animal.

It is put up in boxes at 3c, 50c, and \$1, with full directions on each package. A 50c box will clean twenty sheep.

167 King Street East.

HUGH MILLER & Co.,

Medical Hall, Toronto.

v4-14-1c

TRY THE BEST!—In order to introduce

MOORE'S RURAL NEW-YORKER

(the great Rural, Literary and Family Weekly) to general notice and support in every section of the U.S. and Canada, the Thirteen Numbers of this Quarter will be sent, on Trial, for ONLY FIFTY CENTS! The numbers will contain more and better Reading, Illustrations, etc. than the whole year of many a monthly costing \$1 to \$3. The RURAL was greatly Enlarged and Improved in January, and is now by far the Best and Most Complete (as it has long been the Leading and Largest-Circulating) Journal of its Class on the Continent. It Employs the Best Talent, (having able Corresponding Editors and Contributors in the East and West, North and South.) is Beautifully Printed, Finely Illustrated, and adapted to every Family of taste in both Town and Country. Full price, \$3 a year;—Trial Trip only Fifty Cents. Address D. D. T. MOORE, v5 5-1j Rochester, N.Y., or 41 Park Row, New York City.

NEW AND CHOICE PLANTS! BY MAIL.

I WILL send 1 dozen of good strong plants of any of the following choice varieties of Strawberries (post-paid) to any part of the Province, on receipt of \$1, or will pack and deliver them at the express office for \$5 per 100.— JUCUNDA or KNOX'S 700—The finest, most profitable, and highest recommended of any of the new varieties. METCAL'S EARLY—A promising new variety very early. NEW JERSEY SCARLET and BROOKLYN SCARLET.—The two prize berries of the New York Tribune. AGRICULTURIST.—The prize berry of the American Agriculturist. And SMITH'S SEEDLING.—A new variety of my own, of excellent flavour. Also, WILSON'S ALBANY and TRIOMPHE DE GAND—At fifty cents per doz, \$1 per 100, or \$4 per 1,000. I will also send by mail (post paid) good strong vines of any of the following varieties of new and valuable Grapes, on receipt of the price annexed, or pack and deliver at express office at the price per 100.— SALEM.—Pronounced by Rogers as the best of his hybrids—\$1 50 each. JONA and ISRAELIA.—Dr. Grant's new Grapes—75 cents each, \$10 per 100. CREVELING.—Very early, hardy, and of excellent flavour. Took the first prize at the Provincial Fair, 1866, as best open-air Grape—50 cents each; \$30 per 100. ONTARIO.—The largest of the out-door Grapes—50 cents each; \$30 per 100. DELAWARE, CONCORD, HARTFORD PROLIFIC—10 cents each; \$25 per 100. DOOLITTLE'S BLACK CAP RASPBERRY—\$1 per doz; \$4 per 100. KITTATINNY and WILSON'S EARLY BLACKBERRIES—50 cents each; \$5 per doz. GOODRICH'S EARLY POTATOES.—The best of all early—\$5 per bbl., delivered at railroad or express. ORDER EARLY, AS MY STOCK IS LIMITED. Address, A. M. SMITH, Grimsby, Ontario. v5 4-2f

Duncan's Improved Hay Elevator. PATENTED April 13th, 1867.

THE cheapest and simplest constructed Fork in use in the Dominion of Canada. County or Township Rights for the manufacture of the above Fork may be obtained from the undersigned. JAMES W. MANN, v4-20-1f Port Dorer, Ont.

FRUIT, FOREST AND ORNAMENTAL TREES FOR SPRING OF 1868.

THE largest stock in the country. For sale in large or small quantities. A descriptive and illustrated priced catalogue of Fruits, and one of Ornamental Trees and Plants. Sent, pre-paid, for 10 cents each. Wholesale catalogue FREE. ELLWANGER & BARRY, v5-3 6t Mt. Hope Nurseries, Rochester, N.Y.

THE BEST SHEEP MARK YET INVENTED.

IT is made of tin, stamped with name and number. Is cheap, does not wear out, and looks well. Price three cents each. ARCHIBALD YOUNG, Jr. Sarvia, Ont. v5-3-7f

TO AGENTS! GRAPE VINES AT TEN CENTS.

DELAWARES, Concord, Dianas, Oportos, and Hartford Prolifics, with good roots, at \$10 per 100, if cash accompanies the order. Address, W. W. KITCHEN, v5 4-5t Grimsby, Ontario.

TORONTO, DOVER COURT.

One Thorough-bred DURHAM BULL, One " HEDEFORD, One " GALLOWAY, and Two GALLOWAY COWS, FOR SALE by v5-3-6t R. J. DENISON.

EGGS.

THE undersigned has Eggs to dispose of from his prize Brahma Pootra fowl. Price \$2 per dozen.

ALSO FOR SALE.

A few pairs Brahma Pootra, and Black Hamburg fowls, paired for breeding purposes; THOS McLEAN, v5-5-1t* Box 25, Toronto.

AYRSHIRE BULLS FOR SALE.

THE Subscriber has for sale Two Young Ayrshire Bulls—one yearling; one two years old; both bred from Provincial Prize stock.

THOMAS GUY.

Sydenham Farm, Feb. 26th, 1868.

v5 5-1t

ATTENTION!

DAIRYMEN AND OTHERS!

H. PEDLAR, of Oshawa, Manufacturer of all kinds of Cheese & Dairy apparatus generally, took the First Prize and Diploma at the Kingston Exhibition in 1867, for the best cheese vats, over all other competitors. Parties intending to start dairies would do well to send for my price list, as I have imported direct from the English manufacturers a very large stock of large Tin Plates, for the express purpose of making Vats and Cans, and am able to supply factories throughout with everything at a price that will pay well, by addressing

H. PEDLAR,

Box 100, Oshawa.

v4-24-1f

Markets.

Toronto Markets.

"CANADA FARMER" Office, Feb. 25th, 1868.

Since our last report business has been very dull. A duller time has seldom been witnessed in produce circles. The sales have been absolutely nothing.

FLOUR.—The market is very dull. In the absence of transactions quotations are entirely nominal. A few lots are in the hands of the dealers, but none are at present offered for sale, there being no demand. No 1 superfine is nominally worth \$7 10. In Extra and Superior there was nothing doing and none offering.

WHEAT.—The market has been very dull. No sales have been made during the week; very few lots have been offering. Quotations are entirely nominal. There have been no receipts on the street market for the past few days, and street prices are also entirely nominal.

OATS.—The market has been very dull. We heard of no sales. Prices remain nominally unchanged.

BARLEY.—The market continues quiet. Lots are offering at \$1 25 to \$1 28, with a few small lots sold at \$1 25. The tendency of the market is rather downward, though we heard of no sales below \$1 25.

PEAS.—The market is very dull. No sales have been made for several weeks. Prices are entirely nominal.

HORS.—The following are the nominal quotations:—Inferior, 20c to 25c; medium, 25c to 30c; good, 30c to 40c; choice, 40c to 43c.

SALT.—The following are the current quotations in lots:—American in bris, \$1 75; Liverpool coarse, in bags, \$1 20 to \$1 30.

DRESSED HOGS.—Owing to the late snow storm business has been completely suspended. Good bacon hogs are held firm at from \$5 75 to \$6 12 1/2; heavy for mess would bring fully \$6 50.

PORK.—Holders are asking \$19 for mess, with no sales to report; for prime mess \$15 50 is asked.

BACON.—Owing to the good reports by cable the feeling is much improved; 7 1/2c is asked for Cumberland cut, boxed; rough nominal, at from 6 1/2c to 7c.

HAMS.—Large shipments have been made to Liverpool and London. Selling here, in salt, at from 7 1/2c to 8c.

LARD.—Market improved, owing to firmness in the Liverpool market. Holders now ask 11c, with sales at 9 1/2c and 10c.

Eggs.—No large lots in the market; small lots selling at from 25c to 30c on market.

CHEESE.—Selling only in retail way, at from 10c to 10 1/2c for factory, 7 1/2c to 8c for dairy.

DRIED APPLES.—Moving more freely at from 9c to 10c.

THE CATTLE MARKET.

Owing to the snow storm which prevailed, there have been no cattle offering during the past few days, and the market therefore has been very dull. Butchers have but a small supply of meat on hand. There will doubtless be large buyers as soon as cattle can be brought into market.

The following are the nominal quotations per 100 lbs dressed weight:—1st class cattle, \$7 50; 2nd do, \$6; 3rd do, \$5

The following are the nominal prices for sheep, each:—1st class, \$6; 2nd, do, \$5; 3rd, do, \$3 50.

Calves are quoted as follows. In the absence of actual sales, however, the quotations are entirely nominal.—1st class, \$6 to \$7 each; 2nd do, \$5; 3rd, \$3.

HIDES and SKINS.—There is the usual demand at full prices, with very little stock in market:—

Table with 2 columns: Item and Price. Includes Hides, green, rough per lb. (0 06 to 0 00), Hides, green, salted and inspected (0 74 to 0 00), Hides, cured (0 81 to 0 00), Calveskins, green (0 10 to 0 00), Calveskins, cured (0 12 to 0 00), dry (0 18 to 0 28), Sheepskins (0 70 to 0 75), Pelts (0 70 to 0 75).

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