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VOL. V. No. 14.

TORONTO, CANADA, JULY 15, 1868.

POSTAGE FREE.

The Field.

Blank Places in the Turnip Field.

Owing to defect in the seed or to fly ravages there will often be blank places in the turnip field. These to a farmer of neat instincts and habits are a great eye-sore. Moreover they involve waste of rich land valuable manure and costly labour. When these blank places amount to a considerable proportion of the field the loss of crop thereby occasioned becomes a serious item. It is therefore every way desirable that these blank places should be filled up and turned to some useful account. This may be done in a variety of ways. The best were it practicable would be to transplant from rows that have an excess of plants and so occupy the vacancies and make the field complete. But this can hardly be said to be practicable though we believe it is done to some extent by British farmers. The turnip does not transplant kindly and only submits to the process in a humid climate or during a remarkably wet time. Even under such conditions the plant is checked and the bulb stunted. Mangolds are much more docile under transplantation. Indeed, during a spell of moist weather, they can be transplanted almost without their knowing it. Hence there need be no blank spaces in a mangold patch—ought to be none.

Blanks in the turnip field may be filled up by sowing Yellow Aberdeens, White Globes, Stubble or White Stone turnips. These mature in a much better time than the Swede, and though not so valuable, are by no means to be despised. They may be sown in the late fall or early winter, and made to help materially in eking out the supply of roots. The Yellow Aberdeen is the best of these late varieties, and will come to a very respectable size if the season be good though sown three or four weeks after the general crop of Swedes. A good supply of White Stones is by no means had filling for a bin in the cellar or for the pot on days when there is a "boiled dinner" preparing in the kitchen. It is very little trouble when the turnip crops are gathered to separate the different kinds and convey them to their proper destination.

There is another mode of filling these vacancies, which may be mentioned though the suggestion is rather late to be of practical value at the present season. It can however, be made a note of, and acted on another year. We refer to filling up with another kind of forage crop, namely the cabbage. There is no better expedient than this, and none that can be more easily carried out. Moreover cabbages are greatly relished by cattle in the winter time, and are especially valuable for milk cows. Being of easy culture, the wonder is that they are not more extensively grown as a field crop. The plants require to

be grown and fit for transplantation in a seed bed, which should be located in some sheltered and sunny spot, and the seed sown in early spring. The soil of the seed bed should be very rich, well worked and mellow. In sowing a quantity for field culture, of course a good-sized bed will be required, and it is the better plan to sow in drills, as the plants can then be more readily hoed and weeded. They will also require thinning, and if the plants can be used at different intervals, it will be well to take the larger and stronger ones first, leaving the feeblers ones to grow into more vigorous condition. A moist time should be chosen for transplanting, and the work done with a tool known among gardeners as a dibble. This tool is usually made of an old broken spade handle. The top part of the handle, about eighteen inches in length, is what is used for the purpose. A gradually tapering point is made to it, which is pushed into the soil, and withdrawn with a turn of the hand. Into this dibble-hole the young plant is set, and the dirt firmly pressed around it. The most expeditious way of doing the work is for one person to make the hole and drop the plant beside it, while another sets the plant. This is an operation in which the "young folks at home" can be employed to advantage, as their backs are short and their fingers nimble.

The Drainage of Land.

To the Editor of THE CANADA FARMER:

Sir, The principal object of draining is to take away surplus water, but in effecting this other important benefits are secured. It is obvious that a larger quantity of water in the soil than is required for the support of the plants is injurious. It is injurious in various ways. That wet lands are cold and sour is a common expression, and an acquaintance with the principles which this condition of the soil involves shows that the popular idea is correct. It has been repeatedly proved that evaporation produces coldness, that in the exhalation of moisture heat is carried off, and this is one of the reasons why a wet soil is really a cold one. That such a soil is also sour is proved by the fact that vegetable matters form acids when decomposed in water. The sourness of peat may be taken as an example. Prof. Johnston observes, "When soils are soaked in water then vegetable matter either decomposes very slowly, or produces acid compounds more or less injurious to the plant, and even exerts injurious chemical reaction upon the earthy and saline constituents of the soil." One of the first objects in the production of any plant is to secure a temperature congenial to its habits. Every person may have observed that vegetation makes no progress till the weather becomes sufficiently warm. Different species of plants require different degrees of heat, but as a general

rule those which grow in the lowest temperature are the least valuable.

The effect of drainage has been found highly favorable in raising the temperature of soils. Experiments have been made which proved that at seven inches below the surface the average degree of heat for thirty-six successive days, on a soil which had been underdrained and pulverized, was ten degrees higher than on a soil precisely similar that had not been drained and worked. The more rapid growth and perfect maturity of crops on drained land is doubtless attributable to the higher temperature thus obtained, and is an evidence of the great value of drainage in high latitudes where, from the shortness of the season, the results of the agricultural labours are peculiarly uncertain. It may be safely assumed that draining is the basis of the great improvement which has taken place in British husbandry within the last fifty years. In Canada the practice of draining systematically can hardly be said to be introduced. Various trials have, however, been made in different parts of the country, the subject is attracting great attention, and we may expect shortly to see the business carried on largely and profitably, provided we can obtain an Act to compel neighbours to make an outlet for farms lying above them similar to the one for surface water. It has been objected that drainage is less necessary here than in Britain, that in our drier climate crops are more liable to drought than moisture. To this it may be replied that proper drainage, with a thorough working of the soil, is the best possible protection against drought. A little observation will convince any person that those lands are most affected by drought which at some seasons of the year are too wet. Clays which are not drained keep the water so long on the surface that the soil runs together and forms a mortar, which, when the water is evaporated, becomes like sun-burnt bricks, unworkable and totally unfit for the growth of plants. On the hard pan soil the surface is completely saturated with water in spring, or in wet weather, the compact subsoil not permitting it to soak into the earth. In both cases the workable soil is usually thin, and as soon as drought comes on, the plants droop, and, because they have not much root, they wither away. Crops on such soils are very precarious; the only bed for their roots at any time is the little portion moved by the plough, and it is but for a small part of time, comparatively, that even this is wholly available to them—it being almost always either too wet or too dry. The roots cannot perhaps penetrate the hard subsoil, or if they do, are liable to be brought in contact with substances more or less poisonous to vegetation. The effect of drainage in such cases is to increase the depth of the soil, to render it more permeable to the roots and less liable to be affected by drought.

The first action of the drain is to take the water from that part of the soil with which it is in direct

contact. A contraction of the soil soon follows and cracks are formed, beginning at the drain and extending laterally and vertically, which admit the percolation of water and conduct it to the drain. When the soil is thus brought into a state which allows the water readily to pass through it, the former difficulties of its running together and baking are obviated, the soil remains open and friable, and plants are protected against extremes of wet and drought. It is a fact that plants suffer less from drought on a friable soil than on a compact one, as may be seen by a comparison of crops on clay and loam. This results from two causes: the roots of plants have more scope in a loose soil and are thus enabled to draw support from a greater source. A mellow soil is also most moist in time of drought, pulverization favouring the ascent of moisture from below as well as its absorption from the atmosphere. A heap of moulding sand will seldom dry except to a little depth, while hard clay in the same situation will become almost destitute of moisture. And it is now a proposition regarded among the best English and Scotch farmers as completely established, that drained land is not only better in wet seasons, but in dry seasons also.

E. B.

Broadcast and Drill-Sowing.

The following is part of a discussion on the comparative merits of broadcast and drill-sowing of grain, which took place at a recent quarterly meeting of the Morayshire Farmers' Club, as reported in *The Farmer*, (Scottish) of May 20th, 1868.

"The Chairman said it was proposed that they should have some little discussion on the merits or demerits of drill-sowing compared with broadcast sowing; and he might initiate the discussion by stating his own experience and opinion. He had had a drill-sower in use for several years, and he thought it particularly well adapted for the generality of soils in Morayshire, and especially so for the farm of Spynie. In light soils the drill-sower deposited the seed equally and at a uniform depth. The braid comes up very regularly, and so equally distributed that for himself he was satisfied it was of great advantage to use the drill machine, provided they got a good implement. The one he used was made by Mr. Ben. Reid, Aberdeen. They made some little blunders at first, and even the second year, by making little bits of slips when turning the machine; but since then they had had the work most excellently done. There was a great saving of seed—about a bushel per acre. He thought they might calculate upon the same return after saving a bushel of seed upon that they would use with broadcast sowing.

"Mr. Walker, of Altyre, said he had no experience in drill-sowing, but he should like to hear the difference in seed and crop from the two systems. There was said to be a very considerable saving of seed, but he should like to hear the time and labour occupied by the drill-sower, so that they could know what actually was the profit of working it, and whether, by sowing thinner the crop is much heavier or lighter than it would be otherwise. Those who have experience might give them information on this point.

"Mr. Harris, Earnhill, said that for the last four years he had sown his wheat with a drill machine eight feet broad, and with the rods four inches asunder. He had gradually decreased the quantity of seed, and he must say his crop had as gradually increased in weight and quality. He had never used the drill for spring corn, for which he did not think it was of so much advantage, because it certainly took a long time to sow the drill, and whatever way they put down spring corn, it would grow. The seed took only a short time to germinate, and the land was so late in being prepared after turnips that there was really no time to lose. As to the time taken in sowing, that depended upon the machine. If the frame measured from seven to ten feet they could sow from ten to twelve acres a day with a pair of horses, though that was certainly heavy work for the animals. He thought, however, that the time lost with the drill was thoroughly compensated for by the saving of seed effected. Before he got the drill-machine he used to give from three and a-half to four bushels of seed per acre. This year he sowed wheat with two bushels per acre. He thought he had made a great mistake when he saw the braid rising, and too much black land appearing to the sight; but that morning he walked through the field, and however the crop might turn out, he did not think it would fail for want of plants. There was one thing to take into consideration in sowing ten or twelve acres a day with the drill machine—namely, that they were conducting three operations at once. They were depositing the seed, they were packing the land, and at the same time saving a harrowing; so that he did not know that the labour would be found to be greater than by sowing with a broadcast machine or in any other manner, while certainly the saving of seed was considerable.

"Mr. Patterson, Mulben, said his practice for the last eight or nine years had been to sow with a broadcast machine, but last year on the farm of Lennox, in Dallas, he introduced a one-horse drill-sower, made by Mr. Benjamin Reid, Aberdeen. There were about three or four acres of very steep land, which the men sowed with the hand, and in which they put down six bushels to the acre. The rest of the field, about the same in breadth, was sown by the drill, and only got three bushels to the acre. Three very practical men asked his leave to go into the field and examine the two crops, and they reported to him that the part sown by the drill with three bushels of seed was a better crop, more equally grown, and thicker than the other. He had gone on with the drill this year, and so far as he could see it was an advantage. He had not, however, as yet adopted the drill machine at Mulben.

"Mr. Walker—You say the land sown by the hand was steep, but was the quality of the land equal in both cases?

"Mr. Paterson—The part sown by the hand was a much better sort than the other part. He did not thrash out the crops separately and measure them; he only took an estimate of them by the eye. The gentlemen who took the trouble to go over the field, however, were also perfectly satisfied that the difference in the crop was in favour of the part sown by the machine.

"Mr. Garden. Grangegreen, said he had sown his corn with the drill machine this year only, and he was very much pleased with the braid that was coming up. The machine saved about a bushel an acre of seed, but unless the crop turned out satisfactory he would not give much consideration to that. The drill certainly involved very much more labour, but still, with a little activity, they could get over that. He sowed about sixteen acres a day with different relays of horses. He put a man to manage the steering machine, and also a man to walk behind to see that the machine wrought properly. This supervision was very necessary to see that the work was well done, because he would not on any account have his fields sown in the way he saw some done by the drill machine.

"Mr. Yool, Coullart Bank, said he had used a drill machine for eight years, having got it from East Lothian. It had eight inches between the coulters. He had made no rigid experiments to ascertain whether the broadcast or drill-sowing was most profitable, or made the greatest returns; but, judging from the appearance on fair good land in good condition, he had no hesitation in saying that the eight-inch drill had been satisfactory and amply remunerative. On very light land he thought eight inches was too great a distance for the drills to be apart. They could not make the seed cover the land where the soil was light, but where there was good land they could cover it. There was certainly a saving of one bushel per acre on the seed. He did not think that the labour was very much more; and he quite agreed with Mr. Harris that the drill-sower accomplishes one or two other operations. It consolidated the land and saved harrowing. If they could get the drill machine, with a frame attached to the back containing a grass-sower, as he believed they had in Aberdeen, it would be a great saving. The grass being deposited at the same time as the grain, would save an after broadcast sowing with a machine or by hand. He intended to get next year a machine with a narrow drill for his light land. He had a very good example of the advantage of sowing with the drill on a field verging on a piece of blowing sand. He drilled the good land, and sowed the light land broadcast. Two or three days afterwards, a very strong breeze set in, and very soon the broadcast sown seed was left bare; while on the drill-sown part immediately verging upon it there was not so much as a single seed visible on the surface, and on scraping away the earth to the depth of about half an inch the braid was found coming on finely. If the part where the seed was blown had been drilled with a narrow drill, it would have been all saved. He had no doubt that much of the seed thus exposed would never germinate, for it was just beginning to spring when several dry days came, which, together with the exposure, would prevent it germinating. He found with drill-sowing that though the corn did lodge, it did not go down so flat as it would do if sown broadcast. The root had a firmer hold on the ground, and though the crop was blown over, it did not lie so closely at the root as to let it lodge compactly on the ground, and prevent it from ripening. That was a very considerable advantage on a farm with a quantity of good land. He thought it would be very desirable that some members should make rigid experiments on as good land as could be got. Impressions from merely looking at the crops were all very well, but until they got the thing measured and weighed they could not be sure. He might say that he sowed spring corn as well as wheat in the autumn with the drill, and he thought it was a great advantage in both cases."

Cultivation of the Beet for Sugar.

A French literary *savant*, M. Merais, lately presented to the Academy of Sciences of Paris, a paper on the cultivation of the beet for sugar, which propounds a theory worthy to be labelled "important if true." Moreover there is great probability that it is true, for it seems reasonable. The leading features of this scientific theory are given as follows in *The Grocer*:

"The results at which M. Merais arrives are, that if in the choice of seed plants care be taken to reproduce those roots which are richest in sugar, the result will be the production of a radical type somewhat concave in form, with large hollow neck, carrying several heads; such in fact are the characteristics which distinguish the variety obtained under such conditions by M. Louis Vilmorin. But if such roots possess the grand advantage of richness in sugar, they have the grave inconvenience of yielding but a poor weight per acre, and also of striking many lateral roots, which are equally inconvenient for cultivation and sugar-making. If, on the other hand, those beets are chosen for seed which are roundest, heaviest, and have the fewest roots, which is the common practice of farmers in order to obtain as heavy a crop as possible, the result will be the finest roots to look at and the poorest in sugar.

"The grand object, says M. Merais, in order to improve the beet with a view both to the culture and the manufacture, is to obtain at the lowest cost possible the maximum of extractible sugar per acre, and for this purpose it is necessary to study carefully all the conditions of the case:—1. The richness of the roots in sugar. 2. The weight of the crop per acre. 3. The purity of the juice, and especially the quantity of foreign salts which the roots contain. 4. The proportions of pulp to juice, taking into account the modes of extraction. 5. The convenience of cultivation and manufacture. It is very probable that in pursuing this course we may arrive at a type of beet intermediate between that which has great tap roots and that which has scarcely more than a few threads, and also perhaps at an average form of root, such as the conical or slightly bulging form."

Salt as a Manure.

A CORRESPONDENT sends in the following clipping from a local paper, with a request that we would give it a wider circulation by inserting it in the CANADA FARMER. The communication is addressed to the *Goderich Signal*, and is as follows:—

Thinking the following extracts from Mr. Johnston's book of lectures on Agricultural Chemistry would be beneficial to the Farmers of Huron, by showing them experiments which have been actually tried in the old country—I send you them. Mr. Johnston says:—The use of salt as a manure has been long recommended; it is still extensively and profitably applied to the land. Some of the most carefully observed results which have hitherto been published are contained in the following table:—

Locality & Grower.	Produce per acre.		Quantity per acre and kind of soil.
	Unsalted.	Salted.	
Essex; G. Sinclair, Upon Wheat.....	16½ bushels	22½ bus	11 after Barley.
	11½ "	21 "	5½ " Beans.
	16 "	17½ "	Sown with seed after Peas.
	12 "	28½ "	5½ applied after sowing—after turnips.
Suffolk; Wm. Ransom on Barley.... Near Richmond, at Aska Hall. on hay.	30 tons.	51 cwt.	16.
	2 "	10 "	8, on thin light soil, with clay sub-soil.
	2 "	10 "	5, light soil on gr'l.

Now, there are certain localities in which we can say beforehand that salt is likely to be abundant in the soil. Such are the lands that lie along the sea coast, or which are exposed to the action of prevailing sea winds. Over such districts the spray of the sea is constantly borne by the winds, and strewed upon the land, or is lifted high in the air, from which it descends afterwards in the rain. (Dr. Madden has calculated that the quantity of rain which falls at Penicuik in a year brings down upon each acre more than six hundred pounds of salt.) This consideration, therefore, affords us the important practical rule with regard to the application of salt as a manure, viz:—that it is most likely to be beneficial in spots which are remote from the sea, or are sheltered from the prevailing sea winds.

THOS. WEATHERALD.

Goderich, June 4, 1868.

Root Crops and their Management.

Mr. ARTHUR Abinger Hall Farm, Surrey, writes in *Bees Mess.* as follows, on this subject.

The first and most important point is the preparation of the soil. In all cases that should be done, if possible, in the autumn. Hay the land well cleaned, the farm yard manure carted out, and ploughed and sub-soiled, or cultivated deep by steam, before the frost sets in; and only use the cultivator and harrows in the spring. Then, with two or three hundred weight of guano per acre, you stand the prospect of a good crop of roots. The safest and best for the south is mangold wurtzel and kohlrabi. I have fourteen acres of them mixed, two rows each, and six acres of carrots, mangolds, and kohlrabi all mixed, and have had 125 sheep feeding on them since the beginning of October. They will last them three months, and I have never seen sheep do better. They are all cut up by the turnip cutter and mixed; for fattening stock do better with a mixture, and you can grow more produce of a better quality. It may not look so well to the eye, but it is much better for the pocket and the farmer's profits and the health of his stock. I have stored all our other mangolds, and the kohlrabi I intend to feed off by sheep. There are no roots that you can grow that sheep do so well on as kohlrabi. They should all be sown by the end of April, and you can get any quantity per acre, by using plenty of manure; as they are like mangolds you cannot give them too much. I used only two and a half hundred weight of Phospho-guano, and four hundred weight of salt per acre, and well horse-hoed and stirred the soil to let in the air; and hand-hoed them to keep them clean. The land, when fed off with half the crop, will be in a very high state of condition, and fit to grow anything you wish to put on it.

Weeding Potatoes with Sheep.

It may not be known to farmers in general that it is a common practice in some of the potato-growing districts to turn flocks of sheep into the potato fields for the purpose of eating down the weeds. The sheep will not touch a potato vine, they can not be starved into eating them. This pasturing with sheep is very advantageous when the crop is a late planted one, so that the hoeing cannot be completed until the haying or harvest is finished. At the growing season it is the planter's aim to keep down the grass and weeds so that they may be covered with dirt by the cultivator and hoe, when these are used. Pasturing with sheep will attain this object. Early planted crops, the cultivation of which is completed in the first half of the summer, frequently become grassy and weedy before the time of digging—when the size of the tops precludes cultivation. In this stage the sheep are economical weeders. It is hardly necessary to mention that the food thus given to the sheep makes a double profit, inasmuch as it costs absolutely nothing, while labor is saved and weeds prevented from seeding in the crop. *Rural.*

Burdock.

No good farmer will allow this coarse and disagreeable weed to flourish on his farm. After a few plants have been allowed to go to seed, a long time will elapse before they can be exterminated. As burdock is a biennial plant, the seeds germinate one season and produce seed the next. After this, the root and all dies. Burdock is seldom seen in cultivated fields. In neglected nooks where the ground is rich and bare burdock will supplant everything else.

The best way to eradicate the plant is to cut it away with sharp hoes, two or more inches below the surface of the ground late in autumn, when the water will enter the roots and destroy them. If the ground where they grow can be ploughed, they may be easily exterminated, unless there is much seed in the soil, which a few years of cultivation will destroy by vegetation.

At this season of the year, burdock plants may be seen in many nooks, spreading their broad leaves over an area of ground, allowing no other plant to live beneath them. If they be cut off, there will be sufficient vital energy in the roots to send up a new system of stems, which will produce a bountiful crop of seed before winter. But cut them off a little below the surface of the ground with a sharp broad hoe, or grubbing hoe, or mattock, and put a table spoonful of salt on the top of the tap root, and burdock will never sprout from such roots.—*Ex.*

A Somersetshire Stile.

A CORRESPONDENT in the *Collage Gardener* sends the following illustrated descriptions of a kind of stile which appears easy of construction, and effectual against larger animals, though it would be of little use against sheep and pigs—

"As the merits of the Cornish stile have been discussed in the last few numbers of your journal, I venture to call attention to an invention of my own, which I have had in use for nearly 10 years, and which has been found to answer every purpose for which a stile is required, even to a free passage of your correspondent's 'departed crinoline'."

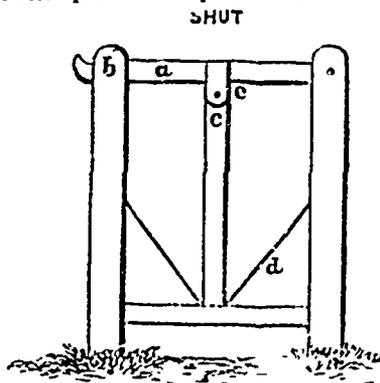


FIG. 1

You will observe from the above engraving (fig. 1) that it is very simple in construction, and entirely self-acting. It has no fastening, as the cross-bar (a), after being lifted up for the person to pass through, falls back to its place in a slit in the post (b) by its own weight, so that it cannot be left open, a great desideratum in stiles and gates of all kinds.

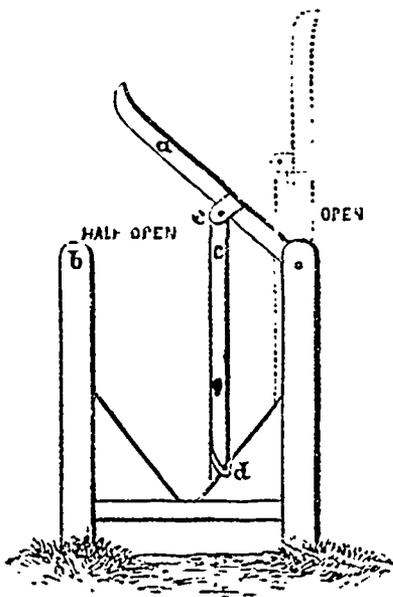


FIG. 2

When the bar (a) is lifted up (see fig. 2), the pendulant (c) turning on the pivot (c) naturally rises with it, and runs up to the bar (d), to which it is fastened by a ring at the bottom, thus leaving a perfectly clear space between the posts for a person to pass through. The stiles are made of iron and wood as required, and are found to answer well in other places besides this, as the orders now rapidly coming in abundantly testify. It is patented."

Plaster for the Hop Aphid.

Mr. F. COLLINS, of Rochester, N.Y., a gentleman thoroughly conversant with hop culture, and patentee of the best system of training the plants we know of, strongly urges all engaged in the business of hop raising to be ready with plaster to avert the ravages of the aphid by a thorough dusting of the vines at the first appearance of this insect pest. He says that simple as this remedy is, it is entirely effectual. Indeed the remedy is even more simple than appears at first sight, inasmuch as common road dust

will answer the same purpose as the plaster so far as the insects are concerned, but plaster is to be preferred because it not only destroys the aphid, but benefits the plant. He mentions in confirmation of his statements, that a number of hop yards lying under the lee of a railroad, and swept during the summer by its clouds of fine dust, were entirely free from aphid, and produced fine crops, while yards at some distance from the track were badly infested, and the product destroyed.

On Drying Corn in Sheaves.

The following extract is well worth the attention of both landlord and farmer:—"Mr. Stephens, of Edinburgh, communicates to the *Journal of Agriculture*—The simplest method of securing the crop after cutting it down from being damaged by standing long in stooks on the ground, is that universally practised by the agriculturist in the woody parts of Sweden and Norway, and which never fails in completely protecting at least nine-tenths of the grain from growing in the sheaf, as well as the straw from any serious injury. In those districts every farmer provides as many *sades stor*, corn stakes (that is stakes for drying the grain), as will be necessary for the quantity of his growing crop. They are generally made of young white pine, eight feet long, about one and a-half inch diameter at the top and four inches at the bottom. The upper end is pointed, to allow the sheaf to pass easily down over it, and the lower end is likewise pointed to facilitate its being fixed in the ground. When a field of grain is ready for the sickle, the stakes are conveyed to the spot, and the reapers proceed with the work; the stakes are put up in rows behind them, in the same manner and at the same distance from each other as is common in stooking the crop. A man, with the assistance of an iron crane or spit, will set up five hundred of these in a day. The next operation is to put the sheaves on the stake. This is performed by raising the first sheaf up to the top of the stake and passing it, with the root end downwards, to the ground, the stake being kept as nearly as possible in the middle of the sheaf. The sheaf then stands perpendicular and round the stakes. The second sheaf is fixed on the stake in an inclined position, with the grain end sloping a little downwards, the stake passing through the sheaf at the band in a transverse manner, and in that position it is pressed down to the first sheaf, and thus forms a covering to it. All the other sheaves are threaded on to the stake in a similar way as the first sheaf put on, keeping them all one above another, with the root-ends facing the south-west to receive as much of the sunshine as possible, on account of the greater quantity of grassy substance they contain at the end. As each sheaf thus acts as a covering to the one beneath it, and as there is only one that can touch the ground, rain cannot at any time penetrate through them, and it is very rare that any single heads of grain on a stake are injured. I have witnessed these operations performed with as much expedition as actually attends the common way of setting the crop in the field in stooks. The number of sheaves put upon each stake is generally fifteen or sixteen. The advantages arising from the above simple manner of protecting the crop are many, exclusive of the consideration of the grain and straw being preserved in a wholesome state. The farmer by it is enabled to commence reaping early in the morning while the dew is yet on the grain. Partial rainy weather does not prevent this operation; he can employ all his people in cutting down the crop before carrying home part of it, and when he does commence carrying it home not the least particle is shaken out, for, instead of throwing a single sheaf into the corn cart or waggon at a time (by which much grain is frequently lost), the stake with the whole of its contents is taken up, put into the cart, and carried to the corn-yard. When the crop is all carried home the stakes are collected and laid aside to be similarly applied the succeeding year, and when carefully kept during the period they are in use they will last twenty or thirty years. I have known many farmers residing on the plains of Sweden, where wood is extremely scarce, who, rather than be without such preservatives of their crop, choose to purchase them at a dear rate and transport them thirty or forty miles to their possessions. Indeed, the practice of staking the grain is there so general and so beneficial that the number of stakes used is often taken notice of when a lot of land is offered for sale." The above method of securing the crop during a wet season is so well adapted for our variable climate, and being cheap, simple, and efficient, it must be the stupid adherence to old habits that hinders our farmers from adopting such a mode. I believe in some parts of Aberdeenshire it is adopted during wet seasons with success, though many projects made of late induce me to think that a lesson might be taken from Norwegian and Swedish farming.—J. KERR, Galashiels, in *Inverness Courier*.

Stock Department.

A Sensible Proposition.

"G. G." (George Geddes), one of the *Country Gentleman's* most prolific correspondents, an old country man by the way, proposes as one measure which would tend greatly to the improvement of farm stock, that a tax be levied on all stallions, bulls, rams, and boars." He says:

"If every horse colt not altered when a year old entailed a tax of \$20 per year upon his owner—if every bull calf of six months old had to pay \$5, and the same per annum afterwards, and every ram lamb and boar pig were taxable at \$2 per year, commencing at three months of age—it would "do away" with most of the worthless brutes, and in five years' time the live stock would be worth very many millions more, and in the course of a few generations there would be nothing living but had some good blood in it, for the dullest of farmers would not pay taxes on the hideous objects which now rove around."

We entirely concur with "G. G." and cheerfully help to pass his proposition round, in the hope that our legislators may profit by it, and aid in abating the masculine nuisance in question. The great proportion of the wretched creatures referred to are of no earthly use to their owners, and their existence tends more than any other one circumstance to perpetuate worthless kinds of stock. In consequence of accidents which will happen in the best regulated families, great damage is done to better bred animals by unlucky crosses, which to all careful, intelligent farmers, are indeed "crosses" in more senses than one.

Nutritive Value of Food for Cattle.

The following table will afford some valuable suggestive information. It shows the nutritive value of several kinds of food—first according to theory or from analysis, and secondly according to the average of several different experiments. The figures given represent the quantity in pounds to be taken of each kind in order to reach a standard of nutrition—as, for instance, that of hay:—

	Value by Analysis.	Value by Experiment.
Good Hay.....	100	100
Wheat.....	47	43
Peas.....	30	44
Beans.....	29	46
Rye.....	58	49
Barley.....	65	51
Indian Corn.....	70	56
Oats.....	60	59
Buckwheat.....	74	64
Linseed Oil-Cake.....	22	64
Red Clover Hay (well cured).....	77	95
Potatoes.....	324	185
Oat Straw.....	364	230
Rute-Bagus.....	678	262
Carrots.....	412	280
Field Beets.....	391	346
Rye Straw.....	502	355

One of the most valuable substances for the food of cows in winter is *bean meal*. Fed upon it, with hay, although giving less milk than when fed upon grass, they have actually yielded more butter. Bean meal is particularly valuable for the production of cheese. In using it the meal should be diluted with bran, cut food, or Indian meal.

The foregoing calculations have been still more simplified by the following condensed statement of the "constituents of feeding materials." Perhaps from it a better idea may be obtained of the proportionate value of various kinds of food:—

PARTS IN 100.			
	Real Food.	Water.	Ash.
Beans.....	82%	14	3%
Peas.....	80	16	3%
Oil-Cake.....	75%	17	7%
Swedes.....	14	85	1
Turnips.....	10	89	1
Mangolds.....	10	89	1
Carrots.....	12	87	1
Common Hay.....	76%	16	7%

One pound of flesh, it is said, will be produced, under favourable circumstances, by the consumption of

Turnips.....	100 lbs.	Milk.....	25 lbs.
Potatoes.....	60 "	Oat Meal.....	9 "
Peas.....	8 1/2 "	Flour.....	7 "
Beans.....	4 "	Barley Meal.....	7 "

The Descendants of Captain Cook's Pig.

THE native (Maori) saying is, "As the white man's rat has driven away the native rat, as the European fly drives away our own fly, and the clover kills our fern, so will the Maoris disappear before the white man himself." It is wonderful to behold the botanical and zoological changes which have taken place since Capt. Cook set his foot in New Zealand. Some pigs which he left with the natives have increased and ran wild in such a way that it is impossible to destroy them. There are large tracts of the country where they reign supreme. The soil looks as if it were ploughed by their burrowing. Some station-holders of 100,000 acres have had to make contracts for killing them at 6d. per tail, and as many as 22,000, on a single run, have been killed by adventurous parties, without any diminution being discernible. Not only are they obnoxious by occupying the ground which the sheep-farmer needs for his flocks, but they assiduously follow the ewes when lambing, and devour the poor lambs as soon as they make their appearance. They do not exist on the western side of the Alps, and only on the lower grounds on the eastern side, where the snow seldom falls; so that the explorer has not the advantage of profiting by their existence where food is the scarcest. The boars are sometimes very large, covered with long black bristles, and have enormous tusks, resembling closely the wild boars of the Ardennes, and they are equally savage and courageous.—*Dr. Haast.*

Summer Shelter for Stock.

MID-SUMMER, and during the months of August and September, we shall probably have much hot and sultry weather. Give therefore a little attention to your stock, in the way of preparing a temporary shed in the pasture, as a shelter from the scorching heat of September sun. Trees, which are more or less common in all pastures, afford a good shade, but a cheap temporary shed is even better, and especially if there is no other protection. An open shed, through which the air will freely pass, and near a brook if possible, should be erected and provided with boxes for holding salt, that the cattle may partake of it at pleasure. In the middle of these hot summer days they will not eat, and how much better and more humane for the farmer to build such a shed in which they can lie and rest themselves. Sheep especially, as well as milch cows, need such a protection. Cattle should also be stabled, these nights in August and September, in a cool and well ventilated place. A shed built in a pasture would cost but a trifle, and could be taken down after the weather became cool.—*Cor. Dixie Farmer.*

LIVE AND DEAD WEIGHT IN SHEEP.—The English rule is to weigh sheep when fatted, and divide the weight by seven and call it quarters. Thus, sheep weighing one hundred and forty pounds, would give twenty pounds a quarter as the dead weight. If the sheep are in good condition, this rule is sufficient for all purposes. Poor sheep will fall below the mark, and extra fat ones go over it.

FREE MARTINS.—It has been the general opinion, and I certainly must say that I was of very strong opinion myself, that Free Martins do not breed, but I am now entirely convinced to the contrary, from the following fact: Young Duchess, a full blood Durham, was a twin with a bull calved August 20th, 1866, got by Butterfly 2d [91.] Canada Herd-Book, served August, 1867, and on 5th of June, 1868, she bred a heifer calf, which she is now suckling. Duchess, the dam of young Duchess, was bred by the late Hon. Adam Ferguson, Woodhill, Ont., was calved July 1st, 1850, making her 15 years old when she bred these twins. She has been a pretty regular breeder, breeding twins in 1859 to Ethelbert, [234.] Canada Herd-Book. Jos. Kirby. Milton, Canada.

Veterinary Department.

Swelled Legs.

REGULATION of the diet is an essential part of the treatment of swelled legs, and especially of that form of the disease which was last described, as affecting "gross" horses—animals whose systems have become deranged in consequence of injudicious feeding with indigestible material, or with ordinary aliment in quantities disproportioned to the animal's requirements. To correctly adjust the supply of nutriment to the amount of waste of tissue is not easy, but it is nevertheless of great importance in the treatment of the morbid condition of which

swelled legs is one of the consequences. No difficulty would be encountered if it were only necessary, in dealing with a plethoric animal, to reduce the condition; active depletive measures would effect this object in a short time; but, while under such treatment the swelling of the extremities would quickly but temporarily subside, the debility which would result would certainly tend to increase the disease. So far from there being a necessity for depletive treatment, the animal must be looked upon as already in a condition of weakness. Despite the increase of bulk, there is a want of energy and activity in the functions, due to the enervating influence of rest and repletion. Excessive deposition of fat is scarcely compatible with a state of health under any circumstances; and when it is traceable to improper diet and inaction, it is always associated with debility and disordered nutrition. Therefore it is necessary to adopt a system of dietetics and exercise calculated to diminish the animal's bulk, by causing the removal of superfluous fat, to improve the tone of the muscular system by exercise, and to supply the necessary quantity of nutriment in the most easily digestible form. The value of any kind of food cannot be determined by merely calculating the exact amount of azotised matters which it contains. It is possible that the nutritious principles may be so combined with other constituents as not to be capable of being assimilated. For this reason we object to the use of beans for animals in a debilitated condition, whether plethoric or emaciated; large quantities of straw are similarly detrimental; and for "gross" animals food which is rich in fat-forming constituents must be avoided. Oats, with a small proportion of bran and old hay, with green food or roots to be added as alternatives, will constitute a liberal and safe régime. Exercise must be gradually increased as the condition improves, and there is no better test of improvement than the restoration of firmness to the flaccid muscles. Meanwhile the occasional use of a mild dose of laxative medicine will be beneficial, and once or twice a week two drachms of powdered nitre may be given in a mash. If the swollen legs are complicated with cracked heels or grease, the treatment which has been suggested for these diseases in previous articles may be used; but if no discharge or wound exists, the local treatment should consist of frictions and bandaging when no heat or pain are present, and of warm fomentation, followed by sedative lotions, if the swelling is tense and the limb tender to the touch. Perseverance and patience will, in perhaps the majority of cases, be rewarded; but it must be admitted that obstinate cases of chronic swelled legs are not uncommon. No treatment seems to make any impression in such instances, and the skin of the swollen extremity ultimately becomes thickened permanently by a deposit of fibrinous material, that may be said to form a part of the organism. Animals affected in this way, however, generally belong to the poorer equine classes; and, if the progress of the disease could be traced, it would in most instances be found that the malady had been neglected in its early stage. Instances, nevertheless, are now and then met with in well-kept and tolerably well-bred horses, which are said to be "humoury," just as among human beings we find persons afflicted with a tendency to scrofula, or consumption, or gout. And in dealing with such subjects the most that can be expected is that, by careful treatment and avoidance of all causes which are likely to develop the predisposition, the tendency may be so checked as not to seriously inconvenience the individual or the animal. It will be apparent, from a review of what has been stated upon the subject of swelled legs, that the affection cannot be treated as a generic one. Each case will present certain peculiarities which require to be noticed, and, as the condition of the limbs may depend upon quite opposite states of the system, it is necessary to determine, previous to attempting a cure, to what causes the swellings are attributable. Upon this principle the owner of a horse, on being informed that the animal is suffering from swelled legs, instead of at once directing the administration of a dose of physic or a diuretic ball, will proceed to the stable, carefully inspect the patient, and minutely inquire into the details of his recent treatment. A number of circumstances will have to be considered. If the horse has been severely worked for the past few weeks, and has fallen off in condition, if the appetite is bad, the coat harsh, and the skin adherent to the subjacent tissues, it is evident that debility is the primary cause of the swelled legs, and on examining the enlargements they will be found generally to be dropsical in character. Should it appear that the animal's health is more decidedly affected, and indications of acute disease are present, the swelling of the extremities will be no more than one of the signs of general derangement, and will not, therefore, be the primary object of concern. When one limb only is attacked, and the swelling is hot and painful, a careful exam-

ination of the heels, and even the foot, should be made, to ascertain if cracked heels exist, or if there are any signs of grease or thrush, either of which may be connected with the tumefaction. The possibility of injury, such as a contusion or sprain, having occurred, must also be taken into account. None of these diseases being present, it will be fair to infer that the swelling depends upon the localization of a morbid state of the system. This case would be an illustration of what is termed the "humoury condition." It may be that the subject of the swelled legs is fat, and habitually inactive; in such cases the enlargement will be due to congestion or inflammation, to which the plethoric system is naturally predisposed. All these varieties of swelled legs will require local and general treatment adapted to the peculiarities of each individual case. Hence it must be apparent that the term "swelled legs," as applied to engorgement of the extremities, or any of them, is not in itself expressive of the nature of the disease, nor suggestive of a plan of treatment; and it is not improbable that the absence of discrimination in dealing with these affections, as though they all belonged to one class and could be cured by a uniform remedial method, is one cause of their frequent degeneration into a chronic form of disease which is incurable.—*The Field*.

Veterinary Queries.

A CORRESPONDENT submits the following cases for our opinion:—

"Can you account for the fact, that when gestation exceeds a year, foals seldom or never do well, while calves, under similar circumstances, are as strong as others?"

"Please say what is the matter with a mare.—About two months ago she, along with three other horses, was turned out for exercise. Joining two year old colts, belonging to a neighbour, they ran about a good deal through the fields. In the evening she came home quite lame of the near fore leg, and resting the toe, but with no external marks of injury. Thinking that the rest would restore her, we let her alone, but she limps now as bad as ever. In what part of the shoulder is the injury likely to be, and can any remedy be applied?"

Ans.—The usual period of gestation in mares is eleven months, and it is very rare that it extends over a year.

Judging from the pointing of the foot, we are of opinion that the lameness is not in the shoulder but lower down, probably within the foot. We would recommend you to have the mare examined by a competent veterinary surgeon.

The Dairy.

Milk and Dairies.

On the 2nd July last we had the pleasure of visiting and inspecting one of the dairy farms from which Messrs. J. & J. L. Burney, of 70½ Queen Street west, receive a large quantity of the milk with which, for the last year, they have been supplying the city of Toronto. The farm referred to is that of Messrs. N. J. Campbell and Brothers, situated in the township of Nelson and county of Halton, about three miles from the line of the Great Western Railway. The Messrs. Campbell were formerly engaged very largely in the manufacture of cheese according to the factory system, and had gained a reputation in that line. Latterly, however, having made arrangements with Messrs. Burney for sending them all their milk, they have given up cheese-making, bought a large number of first-class milch cows, which they have added to their former stock, and turned their farm, which consists of about 700 acres of good land, into pasture. The land is naturally well suited for dairy purposes. The pasturage is excellent, and a never failing stream of pure water runs through it. The Messrs. Campbell, intending, henceforth, to devote their whole time to the business of supplying the city with milk, through Messrs. Burney, have got all their arrangements put into the nicest order.

In the first place, all the water required on the premises is brought from the stream mentioned above. The water is by means of a force-pump connected with a water-wheel, which is placed in the stream and kept in motion by the current, raised through pipes to the height of 160 feet over a perpendicular bank. The piping is then continued for a distance of about half a mile, ending in a cistern in the building where the milk is kept. In this building there are two vats. One of these is a double one, the outer being formed of wood and the inner of zinc. The zinc part of this vat is so constructed that it is placed in the wooden part so as to leave a space of about four inches all round it. This space is filled with cold water, and, morning and evening, when the cattle, after having been fastened in an adjoining building, are milked, each pail is carried in and poured into a strainer extended across one end of the vat. The milk falls on the zinc bottom and runs slowly, by a gentle incline, down to the other end and through a tap into ten-gallon cans, which are ready to receive it. Bypassing slowly over the bottom of the vat, the animal heat is driven out of the milk by means of the cold water beneath the zinc. The other vat is built of brick and filled with ice water, into which the cans of milk are placed and allowed to remain, becoming further cooled, until the morning, when they are taken to a flag station of the Great Western Railway, and put on board a car for the city. After arriving in the city the milk is again put in ice-water, except such as is allowed to become sufficiently warm to raise cream. The cooling process through which the milk goes prevents the cream forming on the top, so that on looking in the morning, no sign of cream can be detected; but it remains distributed throughout the milk. It is evident, therefore, that milk cooled in this way is far richer than such as has not undergone this process. The Messrs. Burney have a similar establishment in the township of Trafalgar. They are about building a larger reservoir at their establishment, in which they will keep a supply of water to be forced into it by means of horse-power, through pipes extending into the lake. The Messrs. Campbell also intend getting a steam engine for the purpose of cutting and steaming the food for their cattle during the winter. It will thus be seen that both these establishments are of a very extensive character. The Messrs. Burney are daily receiving over two hundred gallons of milk, one hundred and fifty of which are from the establishment of the Messrs. Campbell, and they intend to keep up the supply to their customers all winter. From a personal inspection we can assure our citizens that everything is conducted with a scrupulous regard to cleanliness.

This matter of receiving an ample supply of pure milk is receiving a great deal of encouragement from a large number of the medical men of the city, and the poor as well as the rich can avail themselves of the advantage, as it is sold at a price as low as the lowest in town. The arrangements described above were patented this spring by the Messrs. Burney, so that persons wishing to use them in any other part of the country will be obliged to purchase the right from them. There is another milk dairy in the township of Nelson, conducted in the same way by Mr. T. D. Harrison, who has the right for the County of Wentworth, and supplies the city of Hamilton.

Francis Gowdy, of Vermont, says that he has a cow that gives forty quarts of milk daily. The fifth chapter of Acts contains a story that may be of interest to Francis.

LEARNED PIGS.—The Dayton (Ohio) Journal tells the following story of three learned pigs:—Wm. Huskot, who resides on Wayne Street, in this city, has a fresh milch cow which suddenly and unaccountably quit letting down her milk, recently. As the habits of the cow were regular and she did not go away from home far enough to get milked by parties who are given to that practice, Mr. H. could not account for the failure of the animal to yield her accustomed quantity of lacteal fluid. But he determined to find out if such a thing were possible, and set a boy to watch the cow. In the course of an hour or two, the boy had solved the problem. A trio of pigs, not half grown, approached the cow, one after the other, taking turns, and stripped her bag of milk. The milking was performed in a business sort of a way, rather gingerly, and the cow rather liked it. Mr. Huskot didn't like it, and took measures to prevent its repetition.

IRISH BUTTER.—Once upon a time, and not so long ago either, Irish butter enjoyed a very enviable reputation in the market, but it has suffered exceedingly in public estimation owing to the practice of excessive salting, or "loading," as it is called by dealers, to increase weight. A butter factor was recently fined £2 by the Lord Mayor of Dublin for selling butter fraudulently made up. On being subjected to analysis it was found to contain in 100 parts: butter 62, water 5, salt 33—total 100. It is said that several pence per pound are now lost by Irish dairy-men in the price they receive, owing to the degree in which confidence has been lost in the quality of the article they send across the channel.

Poultry Yard.

Poultry Culture.

In the course of the investigations conducted under the auspices of the British Society of Arts, with a view to augment the food supply for the increasing population of Great Britain, and especially of the metropolis and other large towns, an interesting paper was read before the Food Committee of the above society, by Mr. George Manning, on "Poultry Culture." The substance of his remarks is thus given in the *North British Agriculturist*:

"In looking for new sources and for the further development of the old means of animal food, I cannot but think poultry claims our attention before many others, as having once formed an important part of our meat supply, as being simple and inexpensive in culture, and everywhere ready to hand. Of late years, however, poultry has fallen into neglect; and this kind of meat can now be procured at such prices only as to render it an expensive luxury rather than a reasonable portion of daily food. The farmyard seems to be the proper home of the rasorial order of birds; yet it is here that the neglect is most evident, whilst farmers for the most part deny the usefulness of this portion of stock, and tolerate it only from habit. It is not only the farmer, however, who raises objections to this kind of food. The consumer has certain prejudices. On the part of the farmer it is said:—

1. That poultry stock does not pay.
2. That even if it did pay it is too unimportant to engage his attention.
3. That it damages the stackyard.
4. That it is injurious to the crops.

On the part of the consumer it is urged:—

1. That the retail price of poultry is such as to place it out of the list of daily foods.
2. That, even if it can be produced at reasonable prices, it is a poor substitute for butchers' meat, and does not contain sufficient animal nourishment.

If poultry-keeping does not pay, and under existing circumstances, in the majority of cases, it probably does not, the reasons are to be found in the following facts:—

1. That no attention is paid to the choice and management of stock.
2. That food is irregularly and wastefully administered to it.
3. That no regard is had to the roosting, and particularly to the laying places of hens.
4. That the demand is restricted by the market system.
5. That farmers' wives have ceased to be hen-wives.

With regard to the choice management of stock in poultry, we find on farms generally, mongrel-bred birds, which, from continued in-breeding, have deteriorated in size and stamina. The barndoor fowl of the olden time has changed, particularly within the last few years, becoming continually less useful for food. It is true that the barndoor fowl was always a mongrel; but when farmyards were the nurseries of fighting cocks, where landlords, by covenant inserted in the leases, required the tenants to "walk" a game cock, or number of cockerels, and tenant-farmers bred birds for the pit on their own account, there was a continued infusion of new and vigorous blood into the progeny of the hens that stocked the yard. That custom has happily nearly passed away. The deterioration, however, began by the loss of these high-bred cock birds. Again, when the stall and a careless system of farming made the barndoor a golden feeding-ground, chickens had opportunities of growth which they now have not, and which must be supplied to them more economically and judiciously by hand if rearing poultry is to be profitable.

This plan, however, has been neglected; for poultry, unlike other farm stock, has not only not advanced, but has gone back in value, and consequently in estimation. The average weight of barndoor fowls sold from farmyards is three and a half pounds. From this must be deducted three ounces for feathers and twelve ounces for offal before they become food. The game-cock, as bred for the pit, rarely exceed four and a half pounds, but by crossing with the Malay, they may be brought to six or seven pounds in weight. Dorkings, when not in-bred, but well and carefully fed as chickens, will reach to seven and a half pounds as pullets, and to nine pounds as cockerels; higher weights, such as ten pounds for hens, and twelve pounds for cocks, can be obtained, but these are exceptional. Dorkings, however, are not suited for cold clays and damp soils. Of food birds, besides Dorkings, the game and the large Surrey and Sussex fowls (which last always command a high price) there are the Brahma Pootra fowl and the Houdan or French Dorking, well adapted for use. Of these the Dorking and Surrey fowls are beyond all question the best for the table, in delicacy and weight of flesh; the game the most savory, although deficient in size; the Brahma Pootra not so delicate in flavour as the others, but hardy, weighty, and easily fattened, the Houdan having the good without the bad qualities of the Dorking—precocious and small-boned, being non-sitters, and almost uninterrupted layers of large eggs. The Brahma Pootra seems to be a useful stock on which to build other varieties. Of these, the cross with the Dorking is most strongly recommended, and a cross with the Houdan produces table chickens of a fine size. At the last Chelmsford and Essex Poultry Show, the birds which took the first and second prizes for dead poultry trussed as by poulterers, but not drawn, were, the one thirteen pounds twelve ounces, the other thirteen pounds ten ounces, the pair at five months old. They were the direct offspring of a Brahma Pootra cock bird and Dorking hens. For stock it would be a better plan to put a Dorking cock with Brahma Pootra hens, and the pullets of this union with Dorking cocks in no way related to the ancestors of the pullets. Very heavy and weighty table birds may thus be produced. By answers to inquiries, and by reference to the books of a farm, including the last six years, I find that the average price paid by bidders for barndoor fowls of the average weights first mentioned, is two shillings for coop-fed and one shilling and eight pence for yard-fed birds. The cost of feeding and rearing the prize birds at Chelmsford was probably very little, if at all, more than that of raising the others. With regard to feeding, our system of leaving chickens to shift for themselves until such time as they are ready or wanted for the coop, is all wrong. No attempt at after-fattening will increase frame if the feeding of infancy has been disregarded. Again, the indiscriminate emptying of apronsful or sievelful of grain in a heap on the ground, whilst it serves to gorge the powerful, leaves chickens and weaker birds to starve, picking up here and there a grain, whilst sparrows and small birds have a large share in the feast. I see that Mr. Mechl published last month the results of an experiment in the cost of feeding a single hen, shut up and without access to any food but that which was given by hand. The result shows that five pounds of barley at the average of one penny per pound (or forty shillings per quarter) will make one pound live weight of poultry food, worth nine pence per pound. I say it is quite practicable to feed poultry more cheaply, and consequently to sell them cheaper than shown by this method—that is supposing them to be at large; but I am sure Mr. Mechl will pardon me for saying that I think this statement of feeding in confinement is rather low, a circumstance which may arise from the fact that the bird pined at first. I have tried the same experiment with two pens of birds, consisting of a cock and two hens, confined for a long time to separate but very small wired pens. I tried it in March last year, and in the month just ended, and I found that my birds consumed three and a half pints to his two and a half pints in the week; but then I dare say the barley I used was of foreign growth, and of much lighter bulk. Birds having a free run would cost very considerably less. I must not occupy your valuable time with the details of what is necessary for the housing of birds, and for their places of laying and incubation. It will be enough to say that they should be, what they are seldom in farmyards, namely, cleanly, convenient, and attractive.

After the reading of the paper, further expressions of opinions were elicited by questions, in answering which, Mr. Manning said that he considered the nest should, if possible, be on the ground. He disapproved, as a general rule, of heating the fowl house by flues. As to the nutritive value of poultry meat, he thought it inferior to no other animal food. The objection

that poultry damaged the stacks and crops was combated by the experience of Mr. Mechl and others, who found that the birds did a vast amount of good by destroying insects, which they preferred to the growing grain. This objection would also be obviated by a proper system of feeding. The tendency to epidemics amongst poultry kept on a large scale would, he thought, be prevented by the free use of lime and salt, great attention to cleanliness and sufficient run for the bird, particularly a free access to the fields.

Poultry Disease.

W. C., from *Baker's*, writes as follows:—

Through the medium of your valuable journal I would like to get a little information. Two days ago ten of my little chickens, about a fortnight old, were suddenly attacked by a disease which killed them during the day. Later on some older chickens, and two eleven weeks old, and also an old hen, were seized with it and died. The symptoms seemed to be confined to a straggling aimless walk at first then a vacant look in the face, accompanied by a spasmodic gaping. Just before dying their struggles were very violent, all the limbs becoming quite rigid. They had plenty of water and nothing larger than buckwheat to eat, and, moreover, were running at large. Others in the henery were not touched. A farmer living near calls it the "blind staggers" and says he has lost several in the same way. I tried bleeding in the case of the old hen, but without effect. After death I opened one of the larger chickens, and in the gizzard found what appeared to be the grub from a blue bottle fly, commonly known as a "gentle." I have lost some sixteen fowls altogether, and would like to know, if possible, what is the best remedy for the complaint.

Yours, &c.,

W. C.

Note by Ed. C. F.—The symptoms very much resemble those of poisoning. At all events the treatment we would recommend is the administration of a dose of jalap. One teaspoonful mixed with the food of twenty chickens would be the proper proportion. After which a tonic would be of service, which might be given by mixing with the drink of the fowl as much sulphate of iron as would make the water taste slightly inky.

Means of Knowing if Eggs are Fresh.

THE *London and Country* gives the following directions for testing the freshness of eggs:—

"We may observe, in the outset, that when an egg is fresh it is always full, that the shell is very porous, from which we draw the conclusion that in time a portion of its contents must evaporate, being replaced by a portion of air, which surrounds and presses the shell on every side. This air goes to the large end of the egg, because it finds there more surface than at the other end. Now, the liquid contained in the egg is a better conductor of heat than the air. If, then, the egg is fresh, the large end will be full of liquid, and we shall feel a sort of coolness on poisoning the large end in the hollow of the hand, because the liquid of the egg carries off a portion of the warmth of the hand. If, on the contrary, the egg is old, the air collected in the large end being a bad conductor, will not attract the warmth from the hand, and we shall not feel the coolness. It requires, it is true, a little practice and a certain delicacy of touch to avoid error in using this process, but that can be acquired much more promptly than may be imagined, and we have seen people capable of trying in this manner thousands of eggs without committing the slightest mistake, whilst the method of the *naïve* of the eggs by light gave deplorably fallacious results."

JOINT-STOCK NESTS.—My keeper, two days ago, found a nest containing seven pheasant's, three hen's, and four duck's eggs. The nest was some distance from the farmyard Query, which made the nest? A week or two ago I found a pheasant's nest with thirty eggs in it.—*Field*.

Entomology.

Burying Beetles.

To the Editor of THE CANADA FARMER.

SIR,—More than twenty five years ago, I read, in *Chambers' Journal*, of Herculean feats of grave-digging beetles, but fail to remember anything at all of the description given of the beetle themselves. The enclosed specimen I only suspect must be one of them, through its performing a feat that perfectly bewildered me to account for. On Tuesday morning (June 16th), I was crossing a plantation of cabbage when I met quite a large-sized milk snake, and because they have a bad character for sucking cows, I took its life by striking him at the back of the head with a pliant stick. He quickly died, bending himself to just about half his length, being fully a yard long. The place where he lay was between *broads*, and the ground was sandy. On passing that way next morning, I saw a large portion of the tail part was buried, and could see fresh earth being upheaved from beneath him. Next morning (Wednesday) I again visited the spot, and saw a large amount of work had been done. The head part (in length about eight inches) remained unburied, and was somewhat curved, and quite stiff. The ground below it was excavated to a considerable depth, and in form like the curve. And now, for the first time, I saw the performers, they both came out and walked on the top of the unburied part, and if I understood them aright (with their united weight) to press it down in the grave below; but this they failed to accomplish. On the score of humanity, I got a piece of clotted earth and pressed it down for them, and so left it covered. Excavations still continued till Friday morning, when they ceased. I now thought to leave them a while without disturbing them, but frequently took a look at the spot. No further change took place till Sunday, when the first thing I did after dinner was to stroll to this now interesting spot, when I saw one of the beetles having just emerged from below. He walked to and fro in a very undecided and awkward manner. At last he succeeded in climbing to the top of the ridge, taking a vacant stare, as though the world was new to him. His antennæ were about a quarter of an inch long, mounted with a tuft, something like a rosette. He now continued to comb with his brawny fore-legs (alternately) his antennæ, for about ten minutes, when the Lorry cases on his back began to move, and by slow degrees a pair of splendid gauze-like wings, which had been folded up in a very small compass by different hinges, made their appearance. I did not sufficiently suspect that he would really fly away and leave so much treasure behind, but, to my regret, he went off with a bound, with a melodic pitch to his wings, of about high C. I thought now I would like to know a little of the condition of the snake; and first I took up the rather large piece that I weighted the head part down with for them, and not doubting but that I should see it in nearly the same position as when I covered it; but no trace of it could I see, and concluded (with much regret) something had taken it away. I was about leaving, but thought I would just scratch a little more earth away, and found a place much softer, and carefully taking away the earth to about four inches deep, I found the other beetle in a torpid state, and swarming with very small but active and clean-looking insects. I took her out, and continued the search, when close by where the beetle was found, I discovered the mouth of the snake. I now found there was a round hole of about three inches in diameter and five inches still deeper. It was exactly in the following position:—Supposing a hole nine inches deep and three or four in diameter, and you took the dead snake (when quite lumber), holding him by the head, then letting him down tail first in the hole, with his mouth perpendicular.

The beetle that flew away was much the largest. The one I send you soon died, being confined in a flower-pot.

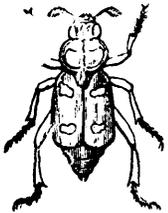
Is this the veritable Grave-Digging Beetle?

Secondly. How did they put the snake in the position described above?

A SUBSCRIBER.

NOTE BY ED. C. F.—The insect referred to in the foregoing graphic description is a specimen of the veritable Sexton, or Burying-Beetle (*Necrophorus vespillo*, Fabr.). The snake was probably placed in the position referred to by being gradually undermined in the direction of the head, until the tail was brought directly beneath it; had the beetles been left alone a few days longer, they would probably have sunk the snake much deeper in the earth.

We have often observed similar performances by these beetles, which are very curious and interesting. At the very time we received this communication we were watching the interment of the dead body of a toad, which had been accidentally drowned. We left it lying on a sandy piece of ground; two days afterwards it had been removed to the distance of a foot from its first position, and had only its hind feet sticking up in the air, the head being downwards; the labours of the beetles underground caused it to move about, and look as if it were diving into the sand, just as one sometimes sees the tail and feet of a duck sticking up above the water of a shallow pool, while their owner is seeking food at the bottom. Two days later the toad had quite disappeared. On digging with a trowel at the place where the ground had been last disturbed, the soil around being slightly crusted, no toad was to be found! We continued to dig, however, around the spot, and at last found the toad six inches below the surface, and about the same distance from the place where we had last seen his legs; the surface of the ground immediately above him being perfectly undisturbed. In this case also the grave had been dug in an oblique direction, and not directly downwards. Underneath the body we found the two Sextons—specimens of another species of the same genus of Beetles (*N. Orbicollis*, Say), which can be recognised from the annexed figure. There are at least ten species of



these grave-digging beetles in Canada, differing from each other in ornamentation and structure, but all possessing the same habits and instincts. Their office, though loathsome, is pre-eminently useful, it being their duty to remove from

the surface of the earth the dead bodies of animals which would otherwise soon become offensive and injurious to health. After they have buried a carcass the female deposits her eggs in it, which speedily hatch, and the larvæ at once set to work to devour the dead and putrid matter.

Dr. Hall's Curculio Catcher.

To make a "Curculio Catcher," we first obtain a light wheel of about three feet diameter, the axle-tree of which should be about ten inches long. We next construct a pair of handles, similar to those of a common wheel-barrow, but much more depressed at the point designed to receive the bearings of the axle-tree, and extending forward of the wheel just far enough to admit a cross-beam to connect the two handles at this point. Directly in the rear of the wheel a second cross-beam is framed into the handles; and two feet further back a third. The two last named beams have framed to their under side a fourth piece, say two or three inches in diameter, which is placed centrally between and parallel with the handles.

To the handles and to these last named pieces, our stretchers to support the canvas are to be fastened. The front part of the beam, connecting the handles before the wheel, is designed for a ram, and should be covered with leather and stuffed with furniture moss, a dozen or more thicknesses of woollen cloth, or other soft substance; care being taken to use no

more than is sufficient to protect the tree from bruising. The frame of our Catcher being finished, we next ascertain the elevation the handles should have in driving, and support them in that position. Having ready twelve stretchers or arms, (six for each side,) which are to receive and support the canvas, we place the long front arms in position. These extend from near the centre of the wheel on each side, and beyond the wheel in front about six feet; and are wide enough apart to receive the largest tree between them, on which it is intended to operate. The remaining stretchers are supported on the handles, and attached to the cross and parallel pieces in the rear of the wheel. These are so placed as to divide the space at their outer ends equally, between the first-mentioned stretchers and the ends of the handles.

We now have ready a strip of board, one-half inch in thickness and two and a half wide. One end of this is firmly secured to the forward end of one of the front stretchers; it is then secured to the end of the next, and in like manner to all the others on one side of the machine, and fastened to the handle. Both sides are made alike. The office of these two strips is to hold the outside ends of the stretchers in their proper position, and prevent the two front stretchers from closing. These outside strips also receive the outside of the canvas, which is fastened to them, as well as to the several arm supports. Three of these arms, on each side, may be cut and hinged so as to fold up, thus making the machine more convenient for housing. In this case two additional sets of braces would be required, and each of the outside rims would be made in three parts, instead of one, as first described.

From the description thus far given, it will be seen that the wheel occupies a central position, and is nearly in the centre of the machine. To avoid an opening at this point, a frame is fastened to the handles on either side of it, and brought together over the top of the wheel. This, as well as the stretchers, is to be covered with canvas. The arms or stretchers are so curved, that the jarring motion in moving from one tree to another brings everything falling on the canvas to the most depressed points, where openings are made into tunnels, to the ends of which the mouths of pockets or sacks are tied. These can be removed from time to time, and their contents destroyed by immersion in hot water. The whole machine, when completed, is about 10 feet in breadth by 11 or 11½ long; or at most 11½ wide by 13 or 13½ feet long. These are for large orchard trees. Smaller trees could be protected with a smaller machine. The frame-work, when covered, should be so nicely balanced, as to require scarcely any lifting to hold it at the proper elevation.—*Dr. Hall's Essay on the Plum Curculio.*

Insect Specimens.

We have received from Mr. J. M. Bristol, of Virgil, County of Lincoln, Ont., a very interesting specimen of a Snout Beetle or Curculio; it is about half an inch long, of a shiny black colour, covered with yellowish down, or short hairs. The species is quite new to us, and we have not been able to find it in any Canadian collection that we have access to; of course we have not the least idea upon what the insect feeds, or what is its natural history. Being so rare it cannot be considered injurious; we shall, however, endeavour to find out all about it.

We have also received two specimens of the large eyed spring-back beetle (*Alaus oculatus*, Linn.). Though it belongs to the dreaded family of wire-worms it may be considered as non-injurious, its favourite food being decayed wood. We have had another fine specimen of this insect sent us by Wm. Magrath, Esq., Erindale, Credit.

A raid upon cockchafers has lately been made around Paris, especially in the Bois de Vincennes. More than 15,000 litres have been killed. The trees are shaken in the morning early when the insect is in a state of torpor and easily detached. Collected immediately, they are thrown into tar water from the gas-works. This liquid kills them almost instantaneously. They are afterwards used as a manure. This "raid" is simply a result of the wholesale destruction of insectivorous birds that has been going on for several years in France, and should be a warning to the promoters of "sparrow clubs," and destroyers of crows, &c.

THE GRASSHOPPER PEST.—The *Chicago Post*, June 19th, says:—The grasshopper plague is devastating Western Iowa in a fearful manner. A friend who has just come in from Sioux City, informs us that of about one hundred and fifty miles wide, extending from south western Dakota—chiefly between the Des Moines and Missouri rivers—to the southwestern boundary of Iowa, there will be scarcely a wheat field left exempt from total destruction by these vermin. They fill the air and cover the ground, making a constant sound like that of a heavy shower. They sometimes gather over night in such myriads upon the track of the railroad as to stop the train by lubricating the track when crushed by the wheels. They devour wheat first, and afterwards take to oats and weeds, leaving grass and other crops comparatively unharmed.

SCARLET SPIDERS.—"One of our Readers" sent us the following note with the specimens therein mentioned. "The enclosed beautiful little scarlet insects we find crawling about on the ground, apparently very happy, and glittering like coral dust in the sunshine. We are curious to know the name and economy of these brilliant little creatures."

NOTE BY ED. C. F.—The tiny coral-red specimens are diminutive spiders, whose avocation, no doubt, is to destroy even tinier flies and other insects; we found them ourselves very early in the spring, and repeatedly since, in the sandy soil of our garden. They are exceedingly pretty little creatures, and probably useful as well; we do not know their name, but they are quite different from what is known as "the Red Spider," a tiny ground mite that is often troublesome in hot-houses, injuring vines and plants by spinning fine webs over their leaves.

DOES FROST KILL LARVÆ?—In a paper addressed to the Academy of Sciences by M. Reiset it is distinctly stated that the general belief held by agriculturists, viz., that severe frost kills noxious insects and larvæ that grub in the earth, is a fallacy. This proposition led to a discussion amongst the members of the learned body. M. Emile Banchard, after doing justice to M. Reiset's important researches, said that it would be wrong to suppose that naturalists had hitherto lived in ignorance of the habits of larvæ feeding on roots, and that it was a well-known fact that, while the temperature continued mild, they remained near the surface, and on the contrary descended to greater depths as the cold became more intense, so as always to escape the effects of frost. The idea, therefore, that a severe winter would rid agriculture of its greatest enemies, was utterly without foundation. M. Chevreul said that M. Reiset had no intention of passing himself off as the discoverer of the fact alluded to, but had done science a great service by instituting precise experiments for the purpose of ascertaining at what depths, according to the temperature, larvæ would be found in the soil, and this had not been done before. These experiments had been carried on for upwards of a year, and M. Reiset had ascertained that while the thermometer stood at 15 deg. cent. below freezing point in the air, the temperature of the soil at a depth of 50 centimetres did not fall below zero; this happened, however, on an occasion when the ground was entirely covered with snow. After these important experiments M. Reiset had told agriculturists that they were utterly mistaken if they trusted to frost for the preservation of their crops from insects, and that they must exert themselves if they wished to rid themselves of the impending scourge. In this M. Reiset had done his duty, without raising any pretensions to a discovery. Last autumn M. Reiset, knowing that the white worm was still quite near the surface, caused a field to be slightly ploughed and harrowed; two women followed the harrow with baskets, and collected 344 kilog. of white worms, at a cost of 12fr. per hectare (2½ acres.) This field produced an excellent crop, while that next to it, which had been let alone, produced nothing.—*Galligiani.*

The Plum Curculio.

To the Editor of THE CANADA FARMER :

SIR,—I send you half a dozen of what, by the description given by "Fruit Grower" in the CANADA FARMER of the 1st June, I take to be that abominable pest, the Curculio. I have carefully followed the plan adopted by "Fruit Grower" and have succeeded in destroying some three dozen. I may add that I consider his method the only one worth anything. The "binding of rags saturated in oil round the stem of the tree, and the subsequent use of chloride of lime and sulphuric acid, I have proved to be utterly useless. I am persuaded, if this be the "Turk," that "Fruit Grower's" remedy is thoroughly efficacious, and would venture to recommend it to all who at the "bloom" expect a good return, and at the gathering are sadly disappointed.

I have found white *hellebore*, used as recommended in a late number, an effectual destruction to the gooseberry caterpillar. A small teacupful well mixed with a little water will make a pailful; this I applied with a watering pot, chiefly in the centre of the bush, in the early spring, just when the leaves appeared, and I have not one caterpillar, whilst the garden the other side of the fence is swarming with them.

J. F. BROWNE.

Toronto, June 25th, 1868.

NOTE BY ED. C. F.—The specimens sent us were genuine "Little Turks," or Plum Curculios. We append illustrations of the insect magnified, (figs. 1



and 2); a punctured plum, (fig. 3); and the Curculio at work, (fig. 4). These figures, with the description



we gave in our last number, will, we trust, enable any one to recognize the enemy without difficulty. Bandages round the stem of the tree could not be of any use in keeping off the Curculio, because it flies with great activity, and does not require to climb up the trunk: but when properly applied they are effective remedies against the parents of the Canker Worms, (*Anisopteryx*), which come out of the ground, and in the female sex are destitute of wings. We are glad to find that Mr. Browne has tried the jarring process, and has found it useful; we believe it to be the only efficacious remedy.

From all parts of the South and Southwest come direful accounts of the appearance of the seven-year locusts, as they are popularly called, though they are in reality a very different insect from the locust, and should be called the Cicada.



Farmers' Clubs.

A CORRESPONDENT from Seneca, in Haldimand County, applies to us in reference to the organization of "Farmers' Clubs." "As we are about," he says, "to organize a Farmers' Club for this locality, and as I am inclined to think there are some prescribed rules for the government of such clubs, I therefore write to ask you to assist us by sending me a copy of the rules, if it is convenient for you to do so."

Not having any such document at hand, and knowing that the Herkimer Farmers' Club, in which Mr. Willard, if not an officer, takes a lively interest, was one of the most successful institutions of the kind, we wrote to that gentleman asking him to forward us the rules of the Society, if they were printed. The discussions of this Club are frequently reported in the *Utica Weekly Herald*, and are full of interest, and often elicit very valuable information. Mr. Willard very kindly and promptly replied, expressing his regret that, as the Constitution and By-laws of the Club were not printed, and he did not happen to have them at hand, he could not comply with our request, adding, however, that "the By-laws are of the simplest character, they merely rehearse the duties of President, Vice-President, Secretary and Treasurer. A fee of one dollar is required for membership. Discussions are held twice a month. The discussions are informal, members keeping their seats and talking—giving their experience—asking and answering questions, &c. We find this plan results in obtaining most information, as many farmers can not be induced to rise and make a set speech. It is preferred that the member appointed to open the discussion write out his remarks. Some do, and others do not."

We do not know that we can add any particular directions for the guidance of our correspondent. The constitution and rules generally state the name of the club, its objects, and its management. The objects are, to promote social intercourse among the farmers of a neighborhood, and give them an opportunity of comparing their experience, and thus adding to the stock of agricultural knowledge. This is done by meetings held at regular periods, especially during the leisure months of the year. The frequency of the meetings must, of course, depend upon local circumstances. The duties of the officers are few and simple—the office is usually held from year to year. An annual general meeting is held to elect officers, receive the report of the year's proceedings, and the Treasurer's financial statement, and to transact such other business as may be required. The regular and ordinary meeting should be made as pleasant and social as possible, but not, to our thinking, by the aid of tobacco and whisky, as we saw gravely recommended not long since in one of our exchanges. If the Club is made the means of taking the farmer from his own fireside to the ale house, it will be more mischievous than beneficial. We commend the example of the Brighton and Cramahe Farmers' Club, several of whose meetings are attended by ladies, who evince considerable interest in the proceedings, and must have a very beneficial influence upon the character of them. In the number of the CANADA FARMER for Feb. 15th, 1867, is a report from the Secretary, Mr. J. C. Squier, of the proceedings of the above Society. We should be glad to receive similar reports, and if any established Society would furnish us with a copy of their rules, they would be of service in answering enquiries like those of our correspondent.

GOAT WANTED.—A subscriber from Limehouse enquires:—"Can you or any of the readers of your journal inform me, through your columns, where a goat or two could be purchased, as near the township of Esquesing as possible, and at what price?"

Bath and West of England Society's Show, &c.

To the Editor of THE CANADA FARMER :

SIR,—During the past three weeks I have had many opportunities of attending exhibitions, fairs and markets in different parts of England; a few remarks in relation to some of which may not be devoid of some interest to your readers.

The Bath and West of England Society is among the oldest established in Britain, dating its commencement from 1777. It embraces objects similar to those of the Provincial Association of Upper Canada, making agriculture a primary, without its being an exclusive object, and affording encouragement to arts, manufactures and commerce. The show was held at Falmouth, being at the extreme Western point of the kingdom, a circumstance sufficient to account for the smaller number of entries in each of the departments, as compared with previous years and more favored localities. Notwithstanding this drawback, the *quality* of the stock, implements, fine arts and manufactures is said never to have been exceeded, and the weather being most favorable, the attendance was very satisfactory.

In this part of the country the Devons would naturally occupy the most prominent position, and the display was really very fine. The Devon is certainly a small animal compared with either the Short Horn or the Hereford, but for beauty and symmetry of form, as also for quality, it can scarcely be excelled. There is a decided difference both in size and expression between the true North Devon, occupying a high and broken range of country, and those of the richer plains of the South and East, the latter being larger and mostly somewhat coarser. I saw an extensive herd of Devons, comprising the largest animals that ever came under my observation, belonging to Mr. Stuckey, near Taunton, in Somersetshire. They have excellent points, denote careful breeding, and possess excellent constitutions. The Short Horns were much less numerous, but in point of quality decidedly good, and the same remarks will apply to the very fine specimens present of Herefords. I felt a little disappointment at not seeing any specimens of the ordinary cattle of this interesting section of England. In sheep, however, the local breeds, mostly horned, were well represented; the Dorsets and other varieties are certainly very pretty animals, some of them larger than I was prepared to find them. The Leicesters and Cotswolds were not very remarkable, but the Downs were excellent. The horses both for the saddle and draught appeared to be above par; the farm animals being evidently well suited to the requirements of the soil and the local wants of the district. The Exmoor ponies are small, hardy and free-working creatures, very useful for many purposes, and they are to be found more or less through the adjacent counties. The pigs were good, but not better, I think, than what we are accustomed to see in Canada on such occasions. Some specimens of the Lincoln breed, sent from that county, were certainly extraordinary for early ripeness and beauty of form. The Poultry department was exceedingly meagre. The large floral tent was well filled with exotics and flowering plants of much excellence. With the exception of ripe cherries and strawberries there was no fruit on exhibition, and no attempt made at a display of early vegetables, for which this district stands pre-eminent. In various parts of the Cornish coast large belts of land are put under cultivation for the raising of various kinds of garden produce, and many thousands of tons are sent by rail to London and the northern towns, which are supplied with cabbage, cauliflower, peas, rhubarb, asparagus, &c., several weeks earlier than they could be from their own localities. Sea-weed and sand, the latter consisting largely of comminuted shells, with carbonate and phosphate of lime, are extensively employed for manuring purposes.

The display of implements, &c., considering the remoteness of the situation, was very good, several of the principal manufacturers being represented. There was nothing particularly striking or novel in this department, but to a stranger the improvements made in recent years are strikingly apparent. The two halls devoted to the fine arts and manufactures were well filled, chiefly with original contributions, many of them of great merit, from various parts of this western section. I may just observe that a dog show was held outside the Society's grounds, comprising about 400 specimens of the different breeds, varying in size, forms and habits, in a most extraordinary degree. The race among half a dozen life-boats in the channel could be distinctly seen from the grounds, which for natural beauty and adaptability to the purpose, far exceeds anything I have yet seen in any part of the world.

The Horse Show at the Agricultural Hall, Islington, was an eminent success. There were hundreds of animals, many of them of first-rate excellence, of all breeds, competing in various ways in well-defined classes with each other, with the exception, perhaps, of draught horses. The Hunter classes were decidedly good, better, it was said, than had ever appeared in this place before. The Arabs, too, excelled; such splendid specimens of this noble breed I never before witnessed. Hacks, roadsters, ponies of almost every description, appeared in great numbers, and to all lovers of the horse the sight must have been magnificent. The immense building was erected a few years ago for the accommodation of the Smithfield Cattle Show, but it is used for similar purposes at different periods of the year. The show of implements and machines, manures, &c., was of itself well worth a visit. The order and systematic attention to details through all the proceedings must have commanded the highest admiration.

I had an opportunity of attending the annual exhibition of the Hunts and Bucks Agricultural Society, held in the ancient city of Winchester. The show was not so large as I anticipated, but there were many good specimens in the different departments, few, however, worth particularizing. The Hampshire Downs appeared to great advantage, as the Sussex and Shropshires, Leicesters and Cotswolds were by no means up to their usual mark. There can be no doubt that the Down, in some of its varieties, is naturally best adapted to the high chalk pastures of this part of England, but on the heavier and richer soils the long-wooled breeds are the more profitable. The cattle and horses called for no particular remark, but the display of poultry was really magnificent, exceeding both in quantity and quality anything of the kind I have ever seen.

It is worth mentioning that I have now been travelling six weeks through several of the midland, southern, and western counties of England, and up to the present date have not experienced a single shower of any importance. A few thunder showers have occurred in some places, but generally the weather has been almost unprecedentedly hot and dry, with no immediate prospect of a change. The hay crop is mostly light, but cured in excellent order. Wheat is in bloom, and gets through the drought the best of any crop. It is in some places thin on the ground, and anything but luxuriant. It may, however, come up to an average. Spring grain of all descriptions must be light, and turnips, mangels, &c., unless the weather changes soon, must prove a failure. Hops are universally good. Grass being deficient, all kinds of live stock meet with a heavy sale, and graziers are experiencing great losses. All are heartily wishing for rain.

GEO. BUCKLAND.

Basingstoke, June 19th, 1868.

"Dry Earth System &c."

To the Editor of THE CANADA FARMER:

SIR,—A great deal has been said and written lately of Revd. H. Moule's "dry earth system." Can you or any of your readers inform me how the plan can be worked in this climate, as it is next to impossible to obtain fresh supplies of dry earth from October until June? A most valuable manure is in almost every case thrown away for want of some economical system of management.

2nd. Which is the simplest plan of burning clay for manure?

3rd. Not having been trained as a practical farmer, and having frequently had fields of grain ruined through carelessness in the man sowing—can you tell me of any inexpensive implement which can be used for sowing grain?

NOVA SCOTIA.

June 6th, 1868.

NOTE BY ED. C. F.—Those who have adopted the "dry earth system" in this country do not experience any difficulty in carrying it out. They collect their supply of dry earth in August and September, and store it in any convenient place. A barn will do; a cellar might be preferable. It is of the greatest importance that the earth should be perfectly dry, its efficacy depending principally on this condition; a sandy loam is the best kind for the purpose.

The plan is found in practice to be perfectly inexpensive and cleanly, counteracting all offensive odour, and furnishing a most valuable manure, which proves beneficial to almost any kind of crop.

In reference to the second question, the following extract from a lecture by Mr. Mechi may supply a hint:—

"The physical condition of the soil is entirely changed by burning. The bird-lime, or putty-like soil, previously almost impervious to air or water, becomes loose and friable, permitting the free circulation of plant roots, and making the land work so much easier, and leave the plough breast readily. There is no safer investment on stiff clays than burning the sticking, dense, unmanured subsoil—where coal is dear it must be dried by the atmosphere before burning, and is of course summer work. One old stump of a Pollard will start and burn 140 cubic yards. The most notable and successful instance of earth-burning on a large scale is that of Mr. Randall, near Evesham. He has continued burning, winter and summer, for twenty years. Coal-dust is there very cheap, and one ton will burn twenty tons of earth."

With regard to the last query, our correspondent would doubtless find advantage in the use of a seed drill. Almost any of the agricultural implement makers furnish them. Messrs. Maxwell and Whitelaw, of Paris, manufacture a thoroughly good implement for the purpose.

The Canada Farmer.

TORONTO, CANADA, JULY 15, 1868.

The Weather and Crops.

It is now quite safe to speak pretty confidently in regard to the season of 1868, as most of the crops are so far advanced as to be secure from injury, and it would be hardly possible to paint too glowing a picture of the promising state of things that prevails, with scarce any exception, from one end of the country to the other. The weather, with the exception of the recent heat and drought, has been all that could be desired to bring on crops of all kinds. Of late, gardens and field roots have suffered from the dry, hot weather, but the turnips are unharmed, and will start vigorously so soon as we have showers. There is an abundant yield of hay, and it is well cured. Hay-making is about over, and wheat harvest has fairly begun. We hear very favourable accounts of the wheat from various quarters. There is but little complaint of midge, and a very intelligent Vaughan farmer with whom we have conversed, is quite satisfied in his own mind that this insect pest is "played out," as the boys say. He is convinced of this, not only because of the limited depredations noticed the present year, but also because he believes the long-hoped-for parasite has come. At the usual time for midge, instead of it, a strange fly of the ichneumon class hovered about his evening lamp, and this he has little doubt is the midge destroyer, "long looked for, come at last!" Myriads of voices will respond, "so mote it be!" Spring grains look well. The dry

weather has checked the tendency to an over-growth of straw, which was apparent earlier in the season, and if not too long continued will be favourable to the filling of the ear. Potatoes will be a light crop, unless the latter part of the summer should be wetter than the early part has been. Fruit still promises well, though there is much complaint of insect ravages in the orchard and garden.

British Versus American Farming.

OUR able Scottish contemporary, *The Farmer*, in a recent article on "the Grain-producing States of America," institutes, apparently without intending to do so, a series of comparisons between the styles of farming in vogue on the Eastern and Western sides of the Atlantic, which by no means redounds to the credit of trans-Atlantic agriculture, and the mention of which may perhaps act as a stimulus in quarters where that sort of influence is needed. After advertising to the enormous aggregate yield of wheat in the far-west, *The Farmer* observes:

"We do not at present wish to enter upon the discussion of the character of these soils and the manner in which crops are grown and harvested; but this we may remark, that the soil is of course virgin and rich, that 99 per cent. of the farming community are in total ignorance of scientific agriculture, that the air is innocent of the smell of guano, and broken British weather seldom worries the life of the prairie farmer as he reaps his autumn yield."

Here are found points in which it is either stated or implied that the new-world farmer appears to a disadvantage as compared with the old-world farmer. 1. Inferior tillage of a soil virgin and rich. 2. Ignorance of scientific agriculture. 3. Neglect of manuring. 4. Poor improvement of splendid harvest weather. Our contemporary feels assured that though the British farmer has to some extent a rival in the western grain-grower, he has not much to fear from such rivalry, and when the farmers of Britain cannot compete, and that remuneratively, with proprietors of small holdings in the far-west, "the sooner they turn to some other occupation, the better for themselves and the agricultural world." The grounds of this assurance are the scientific and systematic farming practised in Britain, comparative command of labour, use of improved machinery, artificial manures, and a ready market. *The Farmer*, waxing warm with his theme, indulges in a glowing and eloquent peroration, which more forcibly than any other portion of the editorial in question rebukes the short-comings of trans-Atlantic agriculture, while it betrays a pardonable if not justifiable pride in view of the comparative certainty to which the science of agriculture has been brought in the old world.

"The East-Lothian farmer, who can enjoy the pleasure and deep satisfaction of viewing the level field of full-eared wheat, swaying in the undulating waves beneath a bright sun, giving to the grain a last golden tinge before the reaper enters on its clattering work, can almost to a nicety tell you that he will thrash from that field his fifty or his sixty bushels an acre. And so long as he can do that, with even a tolerably high rent, he is able to set at defiance all the competition of the Baltic or Black Seas, as well as the not less formidable rival of a young western world, where many will perhaps be astonished to learn that the average yield per acre, over the whole wheat-producing breadth, is only about fifteen bushels per acre."

The homily to careless agricultural sinners, of which we have given in the foregoing paragraphs a few "heads and points," carries its own lesson without need of application from us, yet we cannot forbear a remark or two. It is undeniable that farmers in the United States and Canada are far outdone by their British brethren. With a soil nearly in its native freshness to till, we grow but a small average to the acre, and with magnificent harvest weather, we do not excel in the quality of the grain we produce. We are beaten mainly because old-country farmers give the land better tillage, and more manure than we do. Drainage and repeated deep ploughing, weeding, loosening of the soil, to-

gether with unstinted use of natural and artificial fertilizers, are the characteristic points of excellence in British agriculture, and of defect in ours. For want of acquaintance with the scientific principles which underlie their calling, too many among us have a prejudice against high farming, and fear to venture upon outlays which are in truth essential to great success. Here and there are to be found those who from want of capital are unable to farm better, but we have multitudes of farmers who have made money by pursuing a system of exhaustive agriculture, and who would rather let out their gains at eight per cent., or tie them up in an old stocking, than they would invest them in land improvement, well-bred cattle, or labour-saving machinery. The probabilities are that we shall go on thus until small holdings no longer yield even a meagre subsistence to their proprietors, and then capital will come in, convert a multitude of small holdings into a few large estates, and after some outlay in land improvement, astonish the natives by doing what the "East Lothian farmer" is doing to-day, namely, surveying in the golden radiance of the July sun "level fields of full-eared wheat," good for fifty or sixty bushels an acre when the reaping and threshing machines come to do their work. With an equally fertile natural soil, no rents, hardly any taxes, the best of agricultural implements at command, a climate unsurpassed for grain-growing, and only the one drawback of scarce and dear labour, we ought not to be so far behind the British farmer in actual achievement, as truth compels us to confess that we are.

The Wool Market.

THERE has been a good supply of wool the present season, but as was to be expected, prices have been moderate, and there has been no speculation. The business has been chiefly done by local buyers on their own account, and in changing hands purchasers have only looked for a fair commission for their trouble and risk. The market opened at about 25 cents, and in some instances, we believe, even a cent or two less. It has not advanced beyond 28 cents so far as we are aware, and perhaps 26 cents has been about the average. Low as these prices are compared with what has been realized sometimes of late years, they are better than some of the United States flock-masters have obtained, even with the aid of high protective tariffs, as will be seen by a paragraph elsewhere in this impression. A few American buyers have been in the Canadian market in order to purchase the long combing wool, which they require for their worsted manufactures. A certain quantity of long wool they must have, at any price, tariff or no tariff. The *Trade Review* says there is marked improvement in the quantity of Canadian wool. It is better washed, better put up for market, and there is a less proportion each season of dirty and "burry" wool. This is gratifying.

Notices of Books.

A GUIDE TO THE STUDY OF INSECTS, AND A TREATISE ON THOSE INJURIOUS AND BENEFICIAL TO CROPS.—For the use of Colleges, Farm-schools, and Agriculturists. By A. S. Packard, Jr., M.D., Salem: Press of the Essex Institute. Part I., June, 1868. Price 50 cents.

THE BUTTERFLIES OF NORTH AMERICA: with colored drawings and descriptions, by Wm. H. Edwards. Philadelphia: The American Entomological Society. Part I., April 1868. Price \$2.

TRANSACTIONS OF THE AMERICAN ENTOMOLOGICAL SOCIETY. Philadelphia: Printed by the Society, Volume I., number 4, January 1868. \$3 per annum.

Nothing can better attest the progress that is now being made on this Continent in Entomological science than the simultaneous publication of three such serials as those whose titles are given above. Twelve years ago, when we began the collection and

consequent study of Insects, we were for some time unable to procure any works on American Insects except Gosse's Canadian Naturalist, and a few scattered papers in the Canadian Journal. By and by we succeeded in borrowing copies of Harris' Injurious Insects, Say's American Entomology, and Emmon's Insects of New York. These were very difficult to obtain, the two former being out of print, and the latter much more costly than it was worth; and these, with the exception of numerous papers scattered about in divers scientific periodicals, very expensive and not easily procured, were all the Entomological works extant in America. Soon, however, the Smithsonian Institution commenced its valuable series of publications on this branch of Natural History, and gave an immense impetus to the study of Entomology; and now we have magnificent reissues of Say's and Harris' works, and the press begins to teem with practical reports from State Entomologists, proceedings of Societies, lively popular papers in Magazines, and no end of articles and paragraphs in Agricultural Journals. A striking type of all this improvement is presented in the works before us, to which we now desire to draw the attention of our readers. We have placed them in the order of popularity in their intention, rather than in the order of merit, as they do not admit of comparison in the latter quality—all three being thoroughly excellent in their several ways.

Dr. Packard's *Guide* is a work which we trust will find its way to all who take any interest, scientific or practical, or both, in the world of insects. It is designed to assist the student in learning the structure, transformation and development of insects, to direct him in their collection and preservation, and to help him in the identification of his captures; it is also intended to afford a useful account of those classes of insects that are especially injurious to vegetation, and at the same time draw attention to those that are beneficial. The name of the author, whom we have long known and esteemed as a thorough Entomologist, is a sufficient guarantee that the work will be faithfully carried out. The part before us, which consists of sixty well-printed pages, and more than that number of accurate illustrations, presents us with a concise and clear description of the whole anatomy of insects, and begins to trace their transformations from the egg state. This will be completed in the next part, which will also contain notices of the Geographical Distribution, Geological History, and Diseases of Insects, with a list of the chief works on Entomology, and directions for collecting and preserving specimens. Subsequent parts will treat of special groups of insects, and afford much useful information in a popular manner. The first parts are necessarily of a less generally interesting character, though very valuable for all who desire really to study insects, and learn their actual nature. We can most cordially recommend the work, and wish the enterprise every success.

The next work on our list—Mr. Edwards' *Butterflies*—is of a most beautiful and sumptuous character, being fitted to adorn the drawing-room table as well as delight and assist the student in his closet. The part before us contains life-like and life-size figures of five different species of Butterflies, all of the genus *Argynnis*—popularly known as Fritillaries or Silver-spots. The drawings are most exquisitely done, and beautifully colored, and must delight even those most insensible to the loveliness of nature, and her gay animated flowers. While it is a work that appeals to the wealthy patrons of literature for its support, it is yet one which the Lepidopterist can hardly afford to be without; its publication at intervals of three months prevents its cost proving too serious an outlay.

To the remaining publication it is hardly necessary for us to draw attention; the *Transactions of the American Entomological Society* have been so long

known and highly esteemed under their former title of the *Proceedings of the Entomological Society of Philadelphia*, that they need no words of commendation from us. They are designed, of course, only for the student of Entomology, and would prove almost unmeaning jargon to those who had not already mastered the rudiments of the science; to Entomologists, however, who desire to keep up with the progress of their favourite pursuit, they are an absolute necessity. The present number, which completes the first volume of the new series, contains descriptions and figures of several new species of Canadian Lepidoptera, amongst those of a large number of insects from all parts of North America.

Of Entomology, as well as of other sciences, it may now be truly said that its course is "onward, ever onward." What is its goal to-day is its starting-point to-morrow, and soon is left far behind!

DISCONTINUANCE OF THE "FRUIT CULTURIST."—The useful and ably conducted Horticultural Journal which has been favourably known by the above name, will, we are sorry to learn, be discontinued after the present month. In its place subscribers will receive the *Journal of the Farm*. We shall miss the welcome visits of the *Culturist*, which has been one of our much-valued American exchanges.

Agricultural Intelligence.

Traction Engine.

THE new Traction Engine recently consigned to Mr. W. Sutherland Taylor, by the makers, Messrs. R. Garrett & Sons, Leiston Works, Suffolk, England, was exhibited in practical operation on the streets of Toronto on Tuesday afternoon, July 7th. The success of the experiment demonstrates, as far as any ordinary judgment can anticipate results, the adaptability of the machine for practical purposes in this country, and the many different forms of labour to which it could be put, were suggested forcibly by seeing it work. The Engine was attached to two trucks loaded with seven tons of cast iron pillars from the foundry of Messrs. Hamilton & Son, Palace Street. In consequence of the trucks ordinarily in use with such machines not being ready, those belonging to Messrs. Sheddon & Co., Grand Trunk teamsters, were used, and after being filled with iron were loaded with an additional cargo of men and boys, the iron being completely hid from sight by the number of the aspirants after a free ride behind this novel mode of locomotion. A third waggon was also put into requisition, and filled with between forty and fifty people, and with this load—in all between twelve and fourteen tons—the engine started along Palace and Front Streets at a pace of about four miles an hour. This was accomplished to the utmost satisfaction of all the spectators, among whom were gentlemen from the neighbouring counties and at a distance, who had come to town specially to see the test made. The streets through which the novelty passed, were also lined with large numbers of people who evinced a lively interest in the proceedings. The powers of the engine were fully tested in ascending and descending even steep grades, and also in turning with its line of trucks in comparatively confined space. The engineer also showed, by stopping the engine in the middle of an ascent, his complete control over its movements.

The trial was in every way satisfactory, and afforded ample proof, not only of the advantage of such machines, but their adaptability to the necessities of this country. Had the load been larger, we are informed, its pace over the level road would have been even steadier than it was. On such a road as Front Street, the engine could conveniently carry twenty tons; but where hills intervene this would have to be somewhat reduced. In regard to the danger of frightening horses, anticipated by many as an objection to the use of these machines, we may

say that, although a great many horses were met on the streets, only one or two standing loose at shop doors were frightened—and even these regained confidence when held until the engine passed. With the same speed as on Tuesday, the engine could pass with equal safety through our most crowded thoroughfares. The smoke appeared a smaller grievance than could possibly have been anticipated, scarcely being seen outside the smoke-stack at all. We hail the successful inauguration of this important experiment with much satisfaction, and trust it will be followed by other similar engines, to the immense advantage of the traffic of the country.

Large sums of money have been expended in Texas this spring for beef cattle for the Northern markets, and extensive droves are now en route through Arkansas.

A beet-root sugar manufacturing company has just bought four hundred and eighty-five acres of farming land in Illinois, for the purpose of raising beets.

The Goderich salt company have reduced the price of salt to \$1.30 per barrel. This now places it on the same basis as the Onondago salt, while it is of superior quality.

FALL SHOWS.—The exhibition of the Agricultural Societies of the South Riding of Oxford and South Norwich, will be held at Otterville on Thursday and Friday, 7th and 8th Oct., next. The Durham Fall Show will be held at Tillsonburg on the 15th October next.

WESTERN WOOL.—The Illinois Wool market has been passing through a panic, and the sheep men have been insulted almost beyond pacification by the offer of 20 to 25 cents cash for wool. One farmer took a few dozen fleeces to market, and was offered 20 cents cash or 40 cents trade at the factory. Having a pretty fair stock of strong language at command, he "delivered a short but pointed oration at the head of the factory man, and took his wool home." Enormous tariffs do not always secure high market prices for a commodity.

The fires recently kindled in the process of clearing the woods in the county of Kamouraska, have caused great ravages. Many houses have been consumed, and the fields newly sown have become the prey of the devouring element—all resulting from want of foresight, or, in other words, gross carelessness.

SALMON.—The Quebec Gazette says salmon are entering the bays and streams of the St. Lawrence and Bay of Chaleur districts this season in great abundance. The fish are also unusually large sized, numbers being caught from 36 to 44 pounds weight each. These results are ascribed to the careful protection of the breeding grounds, and the restriction of netting, under the fishery laws.

TREE PLANTING.—If a farmer in Wisconsin plants a row of trees along the road, he is exempt from working on the road. Whoever hurts one of these little trees is fined \$5; and the State Horticultural Society offers a premium of \$100 for the best ten acres of forest trees, and \$50 for the second best. Might not we in Canada take a hint from the above commendable example?

PREVENTION BETTER THAN CURE.—The Illinois Legislature has passed a law providing that any person bringing into the State seed of the Canada thistle, in the packing of goods, grain or grass seeds, or otherwise, and permitting the same to be disseminated and vegetate, shall be liable to a fine of \$400; and any person allowing this thistle to mature and disseminate its seed upon his lands shall be subject to a fine of \$75.

EXPORTS OF BEETROOT SUGAR FROM FRANCE.—The total exports of raw beetroot sugar from France in 1867 were 27,872 tons, as compared with 26,578 tons, in 1866, and 28,279 tons in 1865. In these totals the exports to Great Britain figured for 24,223 tons, as compared with 22,076 tons in 1866, and 27,103 tons in 1865. The exports of refined beetroot sugar from France in 1867 were 87,592 tons, against 90,063 tons in 1866, and 112,230 tons in 1865. In these totals the exports to Great Britain figured for 17,994 tons, as compared with 9522 tons in 1866, and 14,142 tons in 1865.—*Grocer.*

THE OHIO STATE FAIR will be held at Toledo from the 21st to the 25th days of September.

PEAT.—The *Welland Tribune* learns that the company which has undertaken the work of developing the peat beds in this county have had a number of men employed for some weeks past in laying tramways from the bed to the banks of the Welland Canal. We learn that it is the intention to begin the work of excavating the fuel as soon as the pressing machines can be got on the ground, probably some time during this month.

The Apiary.

The Bee Moth

This insect is justly regarded as one of the worst enemies of the honey-bee, as its depredations involve the destruction of combs, brood, and stores. Happy the bee-keeper who knows how to exclude it from his hives, or arrest and prevent its devastations.

The scientific name of this pest is *Tinea mellonella*. There are said to be three kinds of it, one of which has been called *Tinea cereana*; but it seems probable that two of these are mere sexual varieties. That of medium size is regarded as the most destructive. The smaller kind is often seen at dusk in summer evenings, hovering about in front of the hives, seeking entrance. The bees evidently become excited on noticing its approach, and angrily resist it. When successful in effecting an entrance, these moths deposit their eggs in the droppings and refuse-matter on the bottom-board, if any be found there; and from it the larvæ, when hatched, derive their nourishment. The larger kind does not usually make its way into the hive till after the smaller kind have effectually secured possession and made extensive progress in the work of devastation. The color of the medium kind is grey. The egg greatly resembles that of the queen-bee. The fullgrown moth may often be seen sitting quietly on a hive, near its entrance or on some projecting ledge or corner. It frequently deposits its eggs in cracks or crevices through which the heat and odor of the hive escape.

As soon as the larvæ are hatched, they endeavor to crawl into the hive through some opening or cranny, however narrow; and if successful, at once take pest in and live on the offal and particles of wax they may chance to find on the bottom. They grow very rapidly, mount the combs as soon as they can reach them, and enter the cells. Arrived there, they speedily construct their galleries, tunnelling passages along the common base of the cells, and extending their devastating course towards the centre of the comb, in quest of cells containing pollen. These appear to be their favorite resort, whence they advance revelling in the delights of havoc and destruction. Nor do those portions of comb which contain brood escape attack. The defenceless larvæ perish when the side-walls of the cells are broken down or undermined; and the ruin of the colony is sure to follow quickly, if the bee-keeper do not come to the rescue. Even though a worker occasionally lays open the gallery, the passage is too narrow to permit her to enter and dislodge the insidious foe, which, moreover, quickly retires to a safe distance.

Since only feeble stocks are overpowered by the worm, or such as, not being very populous, are at the time engaged in rearing a queen, and are consequently daily growing weaker, it occasionally happens that the bees are literally crowded out and constrained to abandon their mansion. The inexperienced and inexpert bee-keeper, seeing numbers of workers constantly massed at the entrance, fancies he has a strong and growing colony, till suddenly, on some fine afternoon, the bees come tumbling out helter-skelter, and hastily take French leave of their astonished owner. If such absconding colony was well supplied with comb, a strange spectacle of universal ruin will present itself when the hive is opened. A mixed multitude of larger and smaller cream-coloured worms with brownish heads, will be seen hastily wriggling into their hiding-place—a dark, web-strung pile of mingled excreta and crumbling comb. Hosts of fluttering moths, too, hover like harpies on dusky wing, and a nauseous odor exhales from the filmy and cocoon-spangled mass. All this is disheartening; but if the dismayed bee-keeper would have his good humor restored, and himself put in the mood of paying more heedful attention to what may thenceforward be going on in his hives, let him carry the non-moth-proof box or basket to his hen-yard, and present its contents as a *bonne bouche* or tit-bit to his Shanghais and Brahma Postras, and he will see such an eager rush and scramble and hasty gobbling up of the multitudinous host that worked him harm, as well may mollify his temper, and restore his equanimity—so far as a hearty laugh can thereto contribute.

Then, for prevention.—1. Watch your hives closely, especially those that have swarmed, or that are rearing queens. 2. Frequently cleanse the bottom-boards of your feeble stocks, and inspect the combs. 3. See whether there are any black droppings under the combs, or whether the bees are carrying such out. If so, search for and remove the worm.

For preservation of combs.—1. Suspend them singly in a high and airy chamber. 2. Insert them at times for cleaning in the hives of your stronger colonies; and 3, keep them in an air-tight box, and fumigate them every two or three weeks with fumes of burning sulphur.

In elevated mountainous districts, moths are not apt to be troublesome, but in lower level and warm districts they will, without great care, be found a numerous and intrusive pest.—*Bee Journal.*

How do Bees Track Honey?

In the second edition of "The Bee Flora of Germany and Switzerland," its author, Dr. Alefeld, undertakes to show, by very plausible reasoning, that bees, when in quest of honey or pasturage, are guided not by the sense of smell, but by that of sight.

Little as might be objected to this theory so long as it regards only individual bees in search of honey, there still remains the query, how do other bees become apprised of the discovery, and by what means are they guided to the spot where the blossoming field, or the accessible honey-pot is found? In my view, Dr. Alefeld should have answered this query; and as he has not done so, I submit the following solution:—

Every observant bee-keeper is aware that the returning honey-laden bee is bee-sniffed as she drops on the alighting-board, or passes through the crowd at the entrance of her hive, and is at times even very officiously overhauled and pertinaciously detained by the vigilant guards there stationed. Whether or not she gives up to them any portion of her gleanings, matters not. She is examined and diligently watched, and when she re-issues, after storing away her contributions to the common fund, the guards, now on the "qui vive," eagerly brush the dust from their eyes with their front feet, and keenly scrutinize the direction of her flight. Before losing sight of her, one of the guards follows in hot haste; a second pursues in the same airy path, and is rapidly succeeded by a third and fourth; and thus, in due order and succession, they arrive at the place where the first prospecting explorer accidentally discovered the coveted nectar or exposed honey-pot.

This view is sustained by the facts—

1. That the bee of one colony in an apiary will sometimes alone frequent a spot, or even rob a hive, before those of a neighbouring colony will seem to be conscious of the game or participate in the spoil. There must consequently be some mode by which the bees of the same colony are conducted to the place frequented. And the explanation I have given seems to be the most simple and natural.

2. That during the gathering season, the bees do not leave their hives in masses in the morning, but separately, one after another, in Indian file, passing on in a sort of "goose march" in the air to their journey's end; and the line of march being once established, bees of other colonies not yet conversant of the way, may join in the procession to the quarry, and become partakers of the common spoil.—*Id.*

Bees in Cities.

SHIRLEY HIBBARD tells us that in London all the honey made by the city bees is more or less contaminated with soot. One cup of honey gathered in 1858, was so discoloured with soot that it took two months to settle, and then the bottom of the jar was coated with a black deposit, although the honey itself became comparatively clear.

Fortunately for us in America, this is a result which is very rarely met, and in almost any of our cities bees may be kept, and will produce clear and beautiful honey. We know a young artist in one of our cities, who kept a hive of bees in his studio. A window was devoted to their use, one of the lower panes of glass being about an inch and a half too short, so that an opening was left, through which projected a funnel-shaped tube made of thin wood. This tube was attached to the hive, so that the bees had perfect egress without interfering in any way with the other occupants of the room. In winter, the hive with its occupants was removed to a cool garret. The hive was very large, and we understood that in three years it had out-swarmed.—*Cor. Co. Gent.*

Horticulture.

Garden Culture of Native Wild Flowers.

Our attention was arrested the other day by a wagon-load of Moccasin plants exposed for sale in the streets. To those who were unfamiliar with these most lovely natives of our woods it must have caused no small surprise to see so much beauty and delicacy of form and colour in a wild flower; indeed, we could hardly persuade some that they were not hot-house plants. But in truth, and the lover of nature knows it well, there are numbers of our native plants that far exceed in grace and elegance their much prized sisters of the garden. In Floriculture, as alas! in everything, fashion reigns supreme; and here, as everywhere, her mandates are not always those of common sense or of good taste. Every herb and tree is in its own way beautiful, but there are degrees and varieties of beauty, and the meed of popular favor is not invariably given to the most beautiful. The changes which artificial treatment produces in flowers are besides not always improvements. The doubling, for instance, of daffodils, violets, and tulips, is, to our mind, a questionable gain in the mere mass of colour at the sacrifice of beauty and elegance of form. Perhaps our taste is peculiar, but we venture to think the garden Balsams unworthy of comparison with their rustic cousin, the yellow Touch-me-not. We confess to a very qualified admiration of Petunias, China Asters, and some other staple favorites, and are quite unable to discover the principle on which, while Hollyhocks are excluded as vulgar, the most assiduous attention of the gardener and the most honorable place in the flower show are awarded to the Dahlia. Why should a certain class of garden flowers monopolize our regard, and be considered by some as almost alone worthy the name of flower, whilst others, native to our soil and equally lovely, are passed by or perhaps looked upon merely as weeds? Is a plant less beautiful because it grows spontaneously in our woods? Must it be far-fetched and foreign before we condescend to prize or admire it? The Hepatica and the Dog-tooth Violet, so common here, are assiduously cultivated in English gardens, and some of our more beautiful native species bring high prices in the market there; as an example, we may mention that a number of Moccasin plants sent out from this country were sold in England for twelve shillings apiece, and specimens of our Pitcher-plant for as much as a guinea each. Are these unworthy of culture here? We have seen and often admired cottage gardens that owed all their attraction to a tasteful arrangement of Ferns and native wild flowers.

Comparatively few of our farmers, we are sorry to say, have any portion of their land devoted to mere ornamental purposes; many have given up even the pretence of a flower garden, whilst the attempts of others

have resulted in failure. Some have no love for such foolish trifles, and some have no time to spare for this object. With the first we can hardly reason, and can only hope that their children may be better taught. To the other class we would suggest that perhaps they have attempted too much. They have begun, it may be, on too large a scale, and have been really unable to devote sufficient time for keeping so much ground in good order. But if they would curtail their ambition somewhat, they might perhaps succeed better.

Suppose, now, a plot of ground of moderate size



has been set aside and prepared for a flower garden, what, it may be asked, shall be planted? We would strongly urge the farmer, who has such peculiar facilities for the innovation, to try at least the effect of substituting for those plants which he can only procure for money, or at least of adding to them, a few of our native wild flowers. There are some common cultivated flowers that have for centuries been deservedly universal favorites. First among these is the Rose. This queen of flowers affords an instance where native beauty has been enhanced by cultivation. The wild roses of our land, charming as they are, would be preferred by few to that glory of our

gardens, a perfect double rose. The same advantage of cultivation must be conceded in the case of Pansies and many other triumphs of the horticulturist. But, as we have already remarked, there are not a few cultivated flowers decidedly inferior to the wild species of the same genus. The wild Columbine (*Aquilegia Canadensis*) is a much more graceful flower than the Columbine of the garden, and many other similar instances could be adduced.

It is often said that wild flowers will not grow in gardens, or at least will not thrive. They may grow, we are told, for one season, but after that they will die away. This result arises, no doubt, from inattention to the natural condition of the plants in question. If a plant is taken from the recesses of a deep swamp, and placed in the light and dry soil of a garden, exposed to the full glare of the sun, we can expect no other result than a speedy death. But where proper attention is paid to the natural habit of the plant, and pains taken to supply conditions of soil and shade and moisture similar to those by which the transplanted flower was surrounded in a state of nature, success will generally reward our care. When the Victoria Regina was first introduced into England, the hopes entertained of its flowering were repeatedly disappointed; numerous experiments were tried, until by a careful study of the habits of the plant in its natural state Sir Joseph Paxton was enabled to follow these so closely as to obtain complete success. Sir Joseph aimed carefully to reproduce the natural conditions even in such minute particulars as the slight undulation or rippling of the water which takes place in the native rivers of this magnificent and royal water lily. Such refinements as these are, of course, impossible to the ordinary horticulturist, nor are they necessary. All that is required in most cases are the conditions already specified, namely, to place the plant in a soil as nearly resembling that from which it was taken as possible, and in a similar situation as respects light and shade, and the degree of moisture usually present.

Among our native flowers suitable for cultivation may be mentioned one of the commonest, earliest, and handsomest of Canadian spring flowers, the Trillium of the woods. These will thrive well in a garden. Many species of Violet will also repay cultivation, although our native species are destitute of the delightful perfume of the English Violet (*Viola Odorata*). Some of our indigenous Orchids are especially handsome. Of these the Moccasin plant, of which we give an illustration, is perhaps the most superb, and would be justly prized in any conservatory. This species is the showy Lady's Slipper (*Cypripedium spectabile*). Less brilliant in colouring, but, if possible, even more elegant in form, is the common yellow Lady's Slipper (*C. pubescens*). These would form the most lovely additions to a garden that can be imagined, and we have known them thrive in such a situation. Our wild Phlox (*Phlox divaricata*) flourishes very well, and equals in beauty any of the cultivated varieties;

and the tall Anemone. (*Anemone Pennsylvanica*) when in a rich cluster is a very effective ornament. Few plants surpass in elegance the various species of Fumatory, of which we have some choice representatives, for example that known by the name of Squirrel Coon (*Dicentra Canadensis*), or the Climbing Fumatory (*Achillea terrosa*), a most elegant trailing plant of rapid growth and singularly graceful character, especially adapted for rock work. These are of easy cultivation. Many others besides these above mentioned will be readily found in any rural neighbourhood.

While we would recommend the introduction of these ornaments of our native wilds into the garden, we cannot close this article without a protest against the barbarous practice sometimes indulged in by collectors - never by the genuine naturalist - of carrying off by the roots every specimen of a rare plant to be met with in any particular locality. The man who has thus extirpated perhaps, some beautiful and rare flower, has perpetrated a wanton act of spoliation which no ordinary scientific gain or horticultural success can excuse or cancel, and must be written down a Goth by all true lovers of nature.

Coal Oil as an Insect Extirpator.

We mentioned briefly in our last, that a correspondent had warned all gardeners against the use of oil as a remedy for insect pests, as it was death to all the plants touched by it. Since then we have received like testimony from several parties who have tried the same experiment, and one correspondent reflects rather severely upon us for giving publicity to so mischievous a recipe. We can only say that we copied the article from one of the ablest and most trustworthy horticultural publications in the world, the "*Gardener's Monthly*," and duly credited it to the source whence we obtained it, so that the recipe was given on the responsibility of another journal. Having reason to yield entire credence to the statements of our correspondents, we beg to call the attention of the "*Gardener's Monthly*" to this matter, and shall be happy to lay before our readers any explanation or item of additional information that may come to hand from that respectable source.

Timely Hints to Fruit-Growers.

As soon as a plum or cherry knot can be discerned swelling out, cut it away and burn it. When you see any sign of change in colour on the bark of your pear trees, cut away and burn that also. And when you see any black marks on the leaves of apple trees livid spots on the grape foliage, or any other change whatever from the normal hue, cut away and burn the whole thing. By this means shall you prevent their seeding - and thus only can you ever keep in check a scourge which is really, in some neighbourhoods, a mighty obstacle to success.

So with insects; as a soldier would say, they must be attacked directly in front. Strategy is not of much use. Hand picking, tree shaking, and collecting grubs and lava, must be the chief reliance of the practical man. He who has not "time" to attend to these things, will have to buy his fruit of those who have. It seems hard-hearted to pronounce such a doom, but we feel it to be a truth; and the sooner all realize it the better, if it must be - *Gardener's Monthly*.

A correspondent of the *Iowa Homestead* says that when he wants to prepare labels for his trees and plants he makes them of cedar, then takes a Faber No. 1 pencil, rubs a little linseed oil on the place where he intends to write, and writes before it gets dry. By this means the name will remain indelible for many years.

Summer Meeting of the Ontario Fruit Growers' Association.

The Ontario Fruit Growers' Association held their summer meeting in the Agricultural Hall, in this city on last Wednesday. There was a very large attendance of members and others interested in the objects of the Society. The chair was occupied by the President W. H. Mills, Esq., of Hamilton. Among those present there were besides the secretary, D. W. Beadle, Esq., of St. Catharines; Hon. W. Allan, Messrs. Geo. Leslie, senr. and jr., John Gray, John Fleming, James Gibson, H. Brown, and W. Vain, of Toronto; Rev. R. Burnet, W. Halton and L. Springer, of Hamilton; N. Hamilton and C. Arnold, of Paris; Dr. Cross and W. Eccles, of St. Catharines, F. Chisholm, of Milton, W. Reid, of Port Dalhousie, D. Caldwell, of Calt, W. W. Cook, of Cooksville, P. T. Springer and S. M. Dunlop, of Wellington Square; S. Lewis, Winona; L. Bishop, St. Thomas; A. M. Smith and D. Van Duser, of Grimsby.

Some very splendid specimens of fruit were exhibited, among which, as might be expected from the season of the year, strawberries predominated. Mr. George Leslie sent some really magnificent samples, of the following varieties: - *Agriculturist*, *Jucunda*, *Trollope's Victoria*, *Russell's Prolific*, *La Constante*, and *Dr. Nicaisse*, the latter a new variety, now first fruited in Canada. Mr. J. Gray sent specimens of *Triomphe de Gand* and *Wilson's Albany*. Mr. H. Brown, of this city, exhibited a dish of remarkably fine *Trollope's Victoria*, the size and quality of which were much admired. A new seedling strawberry, called *Bishop's Canada Seedling*, was shown by Mr. Luke Bishop, of St. Thomas. There were also on the table a few plates of cherries, Mr. Gray exhibiting the variety known as *Governor Wood*, and Mr. Leslie the *Brookport Biggareau*. A plate of early ripe apples, nectarines, apricots and peaches, grown in an orchard house, were exhibited by C. S. Gzowski, Esq. There were very fine specimens of the fruit, fully ripe and of excellent flavour. A few hybrid seedling raspberries, very early, for they were already ripe, were shown by Mr. C. Arnold. Nearly all these specimens formed subjects of discussion in the subsequent proceedings.

The business of the meeting commenced by the Secretary reading the minutes of the last meeting held at Hamilton, which were confirmed. The Directors then submitted to the Association the following report of the Committee appointed to examine Mr. Luke Bishop's seedling strawberries.

To the Board of Directors of the Fruit Growers' Association of Ontario.

The Committee appointed to repair to St. Thomas and there personally inspect the new seedling strawberry growing upon the grounds of Mr. Luke Bishop of that place.

WORLD RESEMBLY REPORT:

That they have examined the seedling strawberry raised by Mr. Luke Bishop, of St. Thomas, at his grounds:

That they find the plant to be a strong and vigorous grower, coarser in foliage and more rank than the *Triomphe de Gand*; in habit reminding one of *Russell's Prolific*:

That the flowers are hermaphrodite, but only six or seven berries are formed upon each foot-stalk, and these very evenly developed in size:

That the berries may be justly said to be of large size, but not monstrous, in color they are bright red, and make a very handsome appearance. The flavor is particularly agreeable, not too acid like the *Wilson*, but more decided than the *Triomphe de Gand*, an unusual mingling of the *Pine* and *Hautbois* flavors without the excessive distinctness of the latter; while the fragrance is more than usually abundant, filling the room from a plateful of fruit. The berry is not as firm as the *Triomphe de Gand*, and will not bear transportation over long distances as well as that variety:

That in productiveness it is not equal to the *Wilson*, though the fruit is more uniform in size, while the crop seemed to be fully equal to the *Triomphe de Gand* under most favourable culture. The plants set last August showed a very good amount and size

of fruit, particularly those from which the runners were kept off; plants allowed to run together so as to form a thick bed were deficient in fruit. No doubt this variety will succeed best cultivated in hills.

That the Committee can not speak of the healthiness of the plant further than to say that the plants upon Mr. Bishop's Grounds were very healthy, and that the better to test the qualities of this seedling, Mr. Bishop has already placed some of the plants in the hands of the Directors, with Mr. Arnold at Paris, President Mills, at Hamilton, and the Secretary at St. Catharines.

That we commend this new seedling strawberry to the attention of amateurs on account of its fine flavor, delightful perfume, handsome appearance and general uniformity of size.

Your Committee take the liberty of suggesting to the Directors the propriety of establishing a rule that before appointing a Committee to examine seedling fruit on the grounds of the producer, such fruit shall have been exhibited at least once at some meeting of the association; also to state that they were deeply impressed with the importance of diffusing popular entomological information by witnessing the entire defoliation of nearly every orchard between London and St. Thomas, and to suggest the propriety of appointing a suitable person Entomologist to the Association, to whom can be referred all matters relating to insects injurious to fruit culture as they may arise, and who will be able to investigate their habits and report thereon.

All of which is respectfully submitted.

WM. H. MILLS.
D. W. BEADLE.
WM. SAUNDERS.

July 1st, 1868.

A committee was next appointed, consisting of Hon. W. Allan, C. Arnold, W. Halton, and Geo. Leslie, senr., to prepare a programme of subjects for discussion. These gentlemen having retired for consultation, shortly returned with their recommendations, embracing the following topics: -

1st. The merits of the different varieties of strawberries at present on the table.

2nd. The merits of any new varieties of strawberries, and whether any of them can be specially recommended, either as an earlier sort than those at present in general cultivation, or as coming in later and supplying the market between the general strawberry crop and the ripening of the raspberry crop.

3rd. The best six varieties of cherries for general cultivation, and if any and what varieties succeed best as dwarfs.

4th. The best four hardy varieties of raspberries for general cultivation.

5th. On insects injurious to plants, and the best mode of exterminating them.

The first of the foregoing subjects was at once taken up.

Mr. G. Leslie, senr., spoke very favourably of the *Agriculturist*, having found them, especially on a clay soil, very productive, even more so than *Wilson's*. He considered the variety worthy of more extensive cultivation. The *Jucunda*, also grown by him on stiff clay soil, had proved a fine berry, though less productive than the preceding; in flavour not quite equal to the *Triomphe de Gand*, but of good quality for carriage. *Russell's Prolific* he considered should be struck off the list, as it does not set its fruit well, and is in many respects inferior to other varieties. *Trollope's Victoria* yielded a very large fine fruit, well suited for the table, but was a poor bearer and rather tender, and altogether fit only for amateur cultivation. *La Constante* had the advantage of being a late bearer, the specimens shown being the first gathered and not yet quite ripe, but he had found it a poor bearer, and could not recommend it for cultivation. The few specimens of the new variety, *Dr. Nicaisse*, he could not say much about, as this was the first occasion of their being fruited in Canada.

Mr. C. Arnold had not a very high opinion either of the *Agriculturist* or the *Jucunda*; indeed he had not found any variety equal to the *Wilson*.

Mr. N. Hamilton, of Paris, had found the *Triomphe de Gand*, taken all together, the best variety for his own use, though the *Wilson* was perhaps a better market berry.

Hon. G. W. Allan had formed a very favourable opinion of *Trollope's Victoria*, and considered it a very suitable variety for the amateur. In rich clay loam he had found it bear well and the fruit was of fine size and delicious flavor.

A number of the members present expressed their opinions on the varieties under discussion. The *Wilson's Albany* was admitted by all to be the best market berry, though some objected to its acidity, which was, however allowed to be in some measure due to its being often gathered before it was fully ripe. The *Agriculturist* was highly spoken of, Mr. Read, of Dalhousie, remarking that it had one proclivity and

excellence in its habit of stooling rather than making runners. He had also found it best adapted for clay soil. In this opinion Mr. Smith and others fully agreed. Next to the Agriculturist and the Triomphe de Gand the Jucunda received the commendation of those who had grown it. Mr. Gray confines his cultivation to two varieties, Wilsons and Triomphe de Gand. The latter he considered the finest flavoured strawberry we have, the former he had found an enormous bearer. He cultivated in hills, carefully taking off the runners. Dr. Cross, of St. Catharines, after having tried most of the varieties under discussion, now only grew Wilson's, Hovey's, and Triomphe de Gand.

After a short recess the second subject was taken up for discussion, and in connection with this topic Mr. Bishop gave some account of his new seedling strawberry, a cross between Triomphe de Gand and Wilson's Albany. He had now had it three years. It was, he said, rather earlier than Wilson's and will last longer; he considered it also as hardy a variety as any that we have in cultivation. In crossing to procure the hybrid, he had fertilized sometimes with the Triomphe de Gand, and sometimes with the Wilson.

Mr. Beadle said that he considered the flavor of Mr. Bishop's seedling to be its chief excellence, in which respect it was superior to most of the varieties generally cultivated.

Mr. Mills fully endorsed what was said by Mr. Beadle, and spoke in addition of its peculiar and delightful fragrance.

The specimens on the table were exhibited under the disadvantage of having been gathered on the day previous and being over ripe. Notwithstanding this drawback, the flavor was to our taste very agreeable, and we were favourably impressed with the general excellence of the seedling, and considered it deserving of a careful trial.

The following resolution, moved by Mr. C. Arnold, seconded by Mr. Gray, was carried unanimously—

"That the thanks of this Society be given to Mr. Bishop for his efforts in producing a new seedling strawberry, and that it be recommended for further trial."

At this stage of the proceedings the following resolution was moved by Mr. Leslie, Junr., seconded by Mr. Gray, and carried—That the recommendation of the Fruit Committee contained in their report on Mr. Bishop's Seedling Strawberry, viz: "that before appointing a committee to examine seedling fruit on the grounds of the producer, such fruit should have been exhibited at least once at some meeting of the Association," be adopted as a rule of this Society.

The next subject in order, namely, the best six varieties of Cherry, was then taken up, and after some discussion, a vote on the question was taken, resulting in the recommendation of the following in the order named, the first three receiving each an equal number of votes: Governor Wood, Black Eagle, Elton, Black Tartarian, and Black Heart.

Mr. Gray spoke well of the wild cherry of the country as a stock for grafting the cherry upon; not the bird cherry or choke cherry, but one bearing clusters of red berries in the same manner as the cultivated kind.

The fourth topic for discussion was then introduced by Mr. Arnold, who exhibited some white raspberries, ripe at this early season. They were a hybrid between the White Marvel of four seasons and the White Cap. Mr. Beadle thought the Franconia, Philadelphia, Arnold's red, and Arnold's white hybrids to be the most hardy. Mr. Chisholm found the Black Cap to be the hardiest. Mr. Eccles considered the Fastoff the most excellent in this respect. Mr. Gray preferred the Brinckle's Orange and the red Antwerp. Mr. Read grows successfully Brinckle's Orange, Fastoff, Franconia, and Doolittle's Black Cap. Mr. Arnold finds Franconia and Belle de Fontenay the hardiest European sorts, but none of them can be depended upon, while the Philadelphia is perfectly hardy, and is among raspberries what Wilson's is among strawberries. Mr. Caldwell, of Galt, finds the Franconia and Philadelphia the hardiest. Dr. Cross prefers the red and white Antwerp and Franconia.

The fifth and last subject came up too late in the day for any prolonged or adequate discussion. Mr. Beadle stated in answer to enquire that the caterpillar which had proved so destructive to the orchards between London and St. Thomas, was a species of tent caterpillar, not the common variety, *Clioscampa Americana*, known by its large webs or tents, but a closely allied species, *Clioscampa Sylvatica*, which does not make so large a web, and is therefore in its early stages not so easily detected. In the district alluded to they occurred in countless myriads, and had been mistaken by some for the army worm, probably because "their name was legion." A few remarks were made in reference to that ubiquitous pest the Curculio, the majority of the members present concurring in the opinion that jarring the trees, col-

lecting the beetles, as they fell and destroying them, was the only effectual remedy. Mr. Arnold, however, stated that he had failed to make any impression on them by this method, and had found liming or white-washing the ground about the trees more efficacious.

Mr. Beadle presented a report on the Fruit Prospects of the Niagara District, but said that he would not detain the meeting by reading it then, but would leave it with the Editor of THE CANADA FARMER for publication in that journal. We append the document to this report. The observations on the strawberry may be deemed now beyond their season, but are valuable as a record of experience.

After a very interesting session the meeting adjourned.

During the latter part of the proceedings, the chair was occupied by Mr. Leslie, senior, Mr. Mills having been obliged to return to Hamilton early in the afternoon. The thanks of the meeting were voted to the chairman.

THE FRUIT PROSPECTS IN THE NIAGARA DISTRICT.

To the Fruit Growers' Association of Ontario.

When the spring opened, and the fruit trees put forth their buds and blossoms, there seemed to be a promise of an abundant crop of fruit, and expectations were entertained of a more than usually large supply. But as the season advances we find that many of our fruit trees are but very sparsely set with fruit, and that from one cause and another the quantity of fruit is likely to fall far short of our previous expectations.

At the time that our apple and pear trees were opening their blossoms we were visited with a season of protracted rains, the prevalent wind was from the north-east, and was very bleak and chill. Owing to this circumstance, the pollen of the flowers was but imperfectly developed and was washed to the ground. Had the air been usually dry and warm, the delicate grains of the pollen would have been carried by the currents of air, and by the busy insects, to the stigmas of the flowers, resulting in an abundant fertilization; but on the contrary, during the period of fructification the pollen was kept wet and paste-like, so that it could neither float in the air nor adhere to the hairy legs of the bees and other insects, and so failed of reaching its nature-intended destination. Hence but a small proportion of the fruit is set, and our apple trees and pear trees, so loaded with flowers, will yield but little fruit.

To this cause may also be attributed the curled leaves on the peach. Any one who has grown the peach under glass knows how sensitive the foliage is, when it is just putting forth, to any chilling draught or current of air, and has seen the leaves curl and at length drop off from this cause, just as they have curled and dropped off in the open air this spring. It may be that of late years we have been much more subject to the chilling easterly winds in the spring, that from the clearing up of the forest those winds have a longer sweep and greater power, and that our peach trees, from continued exposure to debilitating influences, are become less vigorous and more sensitive to atmospheric changes. Be this as it may, the unpleasant fact remains that for a number of years our peach trees have more or less been afflicted with this curl of the leaf in spring, resulting in the loss of the first foliage and a dropping off of the fruit.

As the season has advanced the pear trees have again been afflicted with the blight, large branches have turned black in the bark, the leaves have withered and turned black, the fruit on those branches shrivelled and dried up, and the trees look as though they had been scorched with fire. It is not necessary to offer any speculations upon the nature and cause of this disease; as yet it is shrouded in mystery, and he who shall be able to discover a preventive or a cure for this destructive disease will confer a boon of no ordinary value upon the cultivators and consumers of the pear.

The strawberry crop has not been as large as usual this season. The deficiency is probably owing to the long-continued drought of last summer. Plantations that were carefully covered during the winter fell short full as much as those that were left unprotected, and of all the varieties usually grown in this Township, the French's Early and the Wilson seemed to show the greatest deficiency, as compared with their usual yield, while the Triomphe de Gand came more nearly up to its usual standard.

Of the newer varieties not one has been able, under the treatment given, to equal the Wilson for general cultivation and productiveness. The "Agriculturist," with special care and high feeding, will yield some monstrous berries, but beyond that has nothing to commend it, and in that respect must yield to the "Dr. Nicaise," whose monstrous fruit astonishes the natives. The celebrated "Tribune Straw-

berries" have failed to exhibit any special excellencies, and will soon be dropped from cultivation. The "Jucunda" has so far done the best of the newer sorts; its berries are large, more nearly uniform in size than the Wilson, of a better colour, and the crop is larger than that of the Triomphe de Gand. The "La Constante" has not yet been sufficiently grown here to judge of its merits. The "Russell's Prolific" fails to fertilize itself, requiring Longworth's Prolific, or some other variety abounding in pollen and flowering at the same time, to be planted near it, in order to perfect its fruit. The writer is disposed to believe that the "Russell's Prolific" and the "Jucunda" flourish best in a strong clay loam. The strawberry cultivator is not likely to lack new varieties with which to experiment for some time to come. Not less than fifty new seedling berries were exhibited at the last meeting of the Western New York Fruit Growers' Society, held on the 24th June, each one supposed to possess some new excellence and special claim upon the attention of the public. There is, however, yet wanted a strawberry of vigorous habit and hardy constitution, as productive as the Wilson, berries large and more nearly uniform in size, bright colour, high flavor, sufficiently firm to bear transportation well, and ripening after the Wilson is gone.

Our cherry crop was thinned from the same cause which lessened the apples and pears, but the Heart and Bigarreau Cherries have thus far suffered less from rot than they did last year, so that we have more fruit than we realized last season. The "Reine Hortense" and "Belle Magnifique" and "Late Duke" varieties are yielding little or no fruit, but the "Mayduke" has an abundant crop.

The currant worm and gooseberry saw-fly are much less numerous this season, whether owing to the use of White Hellebore, or to one of those unaccountable disappearances which every student of entomology has noticed, it may not be easy to determine. The fact is none the less gratifying, and our gooseberry and currant trees are yielding a good supply of fruit. Even those who continue to cultivate the English varieties (with a perseverance worthy of better success) are hoping to escape the fatal mildew this season, at least in a good degree.

Of the raspberries, several varieties passed through the winter either wholly uninjured or but slightly hurt, while even the tenderer sorts will yield some fruit. The "Hornet" and "Pilate" suffered but little, "Brinckle's Orange" and "Franconia" still less, and the "Philadelphia" and "Arnold's White" and "Arnold's Red" not injured at all. The "Naomi," judging from two years' trial, is but little more hardy than Franconia. "Souchetti" is as tender as the old White Antwerp. There is every promise of an abundant yield of Raspberries, and if we are succeeding in obtaining a class of raspberries that will endure our winters without protection, with juicy, high flavored, and large sized fruit, a new impetus will be given to raspberry culture. Of the "Clarke" and "Davison's Thornless" varieties it is too soon to speak.

Blackberry culture is as yet very limited in this vicinity. The "New Rochelle" is large and very productive, but the plants sometimes are a good deal killed back in winter, and the fruit, unless left on the vines until ready to drop off, quite too acid. Experiments are being made with the "Wilson's Early" and the "Kittatiny," in hopes of finding something more desirable.

Those who have been faithful in carrying on the war with the curculio, or plum weevil, are reaping the reward of their labour in a fine crop of smooth, uninjured plums; several have found that a little well directed labour in jarring down the insects, and destroying all fruit stung by them, secures a fine crop of plums at but little cost.

The grape vines have bloomed freely, and are setting their fruit well, so that there is every prospect that when the Association holds its October meeting in St. Catharines, the Niagara District will be able to exhibit an abundance of grapes.

From this hurried survey of the fruit crop in this vicinity, we can see that the Fruit Grower has his difficulties to meet, but that on the whole he has much to cheer and stimulate him to careful experiment and untiring zeal.

D. W. BEADLE.

Grantham, July 7th, 1868.

Hamilton Horticultural Show.

To the Editor of THE CANADA FARMER:

SIR,—As it may be interesting to many of your readers to note the progress that horticulture is making in Canada, I send a brief report of the recent Hamilton Fruit Show. The Directors of the Hamilton Horticultural Society held their second show of

the season in the large and commodious Drill shed on the first of July (Dominion Day). The entries were over 800, embracing many fine varieties of flowers, fruits, and vegetables, amongst which I noticed a very fine collection of orchard house trees, figs and peaches, loaded with fruit; also some grape vines, grown in pots, and very well fruited. Next in order were very fine collections of greenhouse and stove plants, many of them in full bloom. The growers certainly deserve great credit for the skill and care bestowed in producing such fine specimens.

In Fruit, the strawberries being in the greatest perfection at this season many fine dishes were shown. Wilson's Albany and Triomphe de Gand seemed to take the lead. There were also some very fine samples of the Jucunda and the Agriculturist, with some other varieties not so well known. Of cherries I noticed two fine dishes of black hearts, but the general crops not being ripe, the show in this department was limited. In apples a few specimens of well-kept Roxburg Russets were on the table. In the Vegetable assortment the show was extensive and fine, embracing collections of cucumbers, tomatoes (ripe), cauliflower, very fair onions, carrots, cabbages, lettuce, radishes, and many other varieties in great perfection. I would notice particularly the collection of potatoes. The kidneys were very fine. In sound potatoes the early Goderich will no doubt take the lead.

In concluding these brief remarks, I would just say a word to other Horticultural Societies—Our Great Exhibition takes place at Hamilton this fall, and it behooves all the Horticultural Societies of the province to stir up their members to send up their very best productions on the occasion, so that Canada, and the Province of Ontario, may show to the world what we can produce.

HORTENSIS.

Western New York Horticultural Society

The Annual Summer meeting of the above Society was held in Rochester, June 24th. Strawberries were shown in great variety, and a parcel of Corvella grapes preserved from last autumn's vintage, and retaining their freshness to such a degree that they bid fair to show well for some weeks yet. Reports in reference to fruit prospects were not flattering; apples and pears especially are likely to be a light crop. The following questions were reported for discussion by the business committee, and most of them were taken up by the meeting.

First—What are the best varieties of fruit for canning, and what is the best manner of doing it?

Second—What is the best size of can for keeping fruit, and the best material to make cans from?

Third—Is there any method of preventing the ravages of the army worm in apple trees?

Fourth—What is the best remedy for the steel-colored grape beetle and grape worm?

Fifth—Is there any remedy for the insect that preys upon Arbor Vitæ?

Sixth—What new varieties of strawberries promise well?

Seventh—What are the three best varieties of currants?

The peach, pear and quince appeared to be the favourite fruits for canning. Glass cans were preferred for domestic use, tin ones for transportation, and the gallon size found most favour. Much discussion was had on the insect queries, without eliciting anything of special interest. Copperas water was recommended by one member as an effectual remedy for the grape pests: four ounces of copperas dissolved in a quart of hot water, and then another gallon added. Jucunda and New Prolific were mentioned as promising new strawberries. The currant question was not discussed.

Caterpillars on Gooseberry Bushes.

We give the following method of destroying caterpillars, on the authority of the Farmer (Scottish):— "This season, as usual, the appearance of caterpillars on gooseberry bushes has caused considerable anxiety in several parts of the country. In many districts in Fifeshire, and particularly at Newburgh,

a famed and very extensive fruit-growing strath, this pest is doing much mischief. As in the case of other plagues, cundry remedies are being suggested, and applied for the purpose of getting rid of the vexation, a visitation, some of which savour not a little of the superstitious. For instance, one party has had twigs of *Yucca* stuck in amongst the branches of the bushes; another has planted rue (*Ruta graveolens*) and chamomile (*Maticaria chamomilla*) plants at their roots, for the purpose of getting rid of the pests. These, nevertheless, may tend in some way in making the caterpillars less voracious on the bushes so treated, for the smell as well as the bitter tastes of such are, doubtless, detested by insects. Hellebore powder, lime and soot have also been applied, but nothing so effectually destroys the vermin as soot, which is, independently, the cheapest cure and the most certain preventive. When dusted on the bushes after a slight shower has fallen, or after the leaves have been wetted, the vermin will soon drop off the leaves and perish. The application of a sprinkling of dry soot round the roots of bushes, when early digging operations are being proceeded with in spring, will act most successfully in preventing their appearance, and this resorted to in successive seasons will entirely extirpate the pests. In doing so, however it is necessary at every application to remove the soil slightly round the roots of the bushes, and supply fresh soil in place of that removed. This has been tried with best results for many years.

The Household.

How to make Spruce Beer.

As the season is here when pleasant summer drinks, free from alcoholic influence, are frequently brewed by the house-wife, or the well brought up daughter—who ought to be taught a little of everything in the way of household duties—we append the following recipes, which are claimed to be excellent:

1. Take three gallons of water of blood warmth, three half pints of molasses, a table-spoonful of essence of spruce, and the like quantity of ginger, mix well together with a gill of yeast; let it stand over night, and bottle in the morning. It will be in a good condition to drink in twenty-four hours. It is a palatable, whole-some beverage.

2. Those who prefer *mead* have only to substitute honey for the molasses named above, and for one-third the ginger use all-spice. Half the quantity of yeast will be sufficient, and the bottling should occur the second day instead of the next morning. It will be fit to drink in four days after being bottled, and will keep for many weeks. A small quantity of alcohol is formed during the fermentation, and this prevents the acetous fermentation so common to spruce beer. The essence of spruce is of course left out in the making of mead. The alcohol formed from the fermentation of honey resembles that found in *metheglin*, while the alcohol formed from the fermentation of molasses is *rum*. Those who imagine that they can make their spruce beer or mead without entirely forming any alcohol are mistaken; but it is present in so slight a proportion as not to be sensible to the most delicate temperance nerves. *Selected.*

To Cure Meat.

To 1 gallon of water take 1 1/2 lbs. of salt, 1/2 lb. of sugar, 3/4 oz. of saltpetre, 1/2 oz. of potash. In this ratio the pickle to be increased to any quantity desired. Let these be boiled together until the dirt from the sugar rises to the top and is skimmed off. Then throw it into a tub to cool, and when cool pour it over your beef or pork, to remain the usual time, say four or five weeks. The meat must be well covered with pickle, and should not be put down for at least two or three days after killing, during which time it should be slightly sprinkled with powdered saltpetre, which remove all the surface blood, etc., leaving the meat fresh and clean. Some omit boiling the pickle, and find it to do well, though the operation of boiling purifies the pickle by throwing off the dirt always to be found in salt and sugar. If this receipt is properly tried it will never be abandoned. There is none that surpasses it, if so good. *Journal of Agriculture.*

A WITTY REPLY.—"Did you ever see a lunar bow, miss?" said an astronomer to a bright-eyed girl, when talking of rainbows. "I have seen beaux by moonlight, if that's what you mean," was the sly rejoinder.

Sydney Smith wrote to a friend. Unfortunately the house is full of cousins; would they were once removed!

DOING IT MILD!—The funniest incident that has lately transpired is the case of a doting mother, who, being satisfied that her child merited a flogging, insisted on his previously being put under the influence of chloroform.—*American Paper.*

AS OUR MOTHERS DO.—We were considerably amused the other evening at three little girls playing among the sage brush in a back yard. Two of them were "making believe keep house" a few yards distant from each other—neighbours as it were. One of them says to the third little girl: "There, Mrs. Nelly, you go to Sarah's house, and stop a little while and talk, and then you come back and tell me what she says about me, and then I'll talk about her; then you go and tell her all I say, and then we'll get mad and won't speak to each other, just as our mothers do, you know. Oh, that'll be such fun."—*American Paper.*

HOSPITALITY.—There are some people who would like to make their friends welcome, but spoil their pleasure by over-exertion. The guests are made to feel uneasy by the visible effort put forth to entertain them. The whole secret of putting our friends at ease, is to be at ease ourselves. And in order to be thus, we must not misinterpret their visit. They have not come to see our furniture, our equipage, our dress, but ourselves. Courtesy, then, rather demands our society and conversation than our silver ware and cookery.—*Anon.*

Advertisements.

First Prize Cheese Vats!

TO THE DAIRYMEN OF CANADA.

THE UNDERSIGNED keeps constantly on hand the following articles, Cheese Vats and Heaters of all sizes and styles, Red Cherry Press Hoops and Followers, (turned), Screws of all sizes and patterns, Carrying Cans and Dairy Pails, of the best material, Bleached Cotton Bandage Cloth, imported expressly for the trade, and everything required in the manufacture of Cheese.

AT LOWEST REMUNERATIVE PRICES.

My Vats took First Prize and Diploma at last Provincial Exhibition.

Address H. PEDLAR, Box 100 Oshawa, Ontario.

MILLER'S

INSTALBLE



TICK DESTROYER FOR SHEEP!

DESTROYS the TICKS, 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 3/6, 7/6, and \$1, with full directions on each package. A 3/6 box will clean twenty sheep.

HUGH MILLER & Co., Medical Hall, Toronto. 167 King Street East. v4-14-1f

TO FLAX GROWERS.

THE undersigned will have, the present season, a supply of FLAX-PULLING MACHINES, which we can guarantee to do good work, having been fully tested last season. New improvements added this year. Send for cut of Machine and Price List.

OSWOLD & PATERSON, Woodstock Iron Works, v5 9 0f.

SMALL CHEESE VATS!

H. PEDLAR, Manufacturer, will send to any Railway Station in the Province of Ontario, (free of charges,) a first class Cheese Vat, all complete, in running order, suitable for twenty to thirty Cows, on receipt of \$50.

All work warranted to give satisfaction. Address H. PEDLAR, Box 100, Oshawa, Ont. v5-10-1f

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. MARK, Port Dover, Ont. v4-20-1f

Paxton, Tate & Co., Port Perry, Ont.,



MANUFACTURERS OF THE MARSH HARVESTER!

AGRICULTURAL IMPLEMENTS

OF ALL KINDS, STAVE & SHINGLE MACHINERY, OSCILLATING MULLEY SAWS, TURBINE WATER WHEELS, MILL CASTINGS, etc., etc., MADE TO ORDER.

Repairing of all kinds promptly attended to.

WARRANTY.

We warrant the Marsh Harvester to be well made, of good material, and when properly used, not liable to get out of repair; to be a good grain-cutting machine upon which two experienced binders can bind in average grain, on suitable ground, from eight to twelve acres in twelve hours; and that it will work on as rough ground as any other Reaper

PAXTON, TATE & CO. v5-7-1f

Port Perry, March 28, 1868.

Farm of Prospect Hill

TO LET, for a lease of 10 or 12 years, from and after 1st October next:

Being Lot 16, Con. 12, East Zorra, Oxford, 200 acres, occupied by the heirs of the late W. Dawson, Esq.

This is a first-class farm either for cropping or dairy purposes, and is in a high state of cultivation; 160 acres arable; well watered and fenced. Excellent Dwelling House, large Orchard, and extensive Farm Buildings, suitable for dairy purposes. By gravel road, 6 miles from Woodstock; 1 mile from Strathallen cheese factory.

Should an intending tenant take the stock and crop, by valuation, he could have immediate possession. Apply on the premises, or by letter post paid, to

MRS. DAWSON, SOUTH ZORRA, ONTARIO.

Prospect Hill, 26th June, 1868.

v5-14-2f.

J. H. THOMAS'

FIRST PRIZE BEE HIVES!

Persons desirous of purchasing territorial rights for my Hives, would do well to apply at once, as I will sell for the next two months. Townships at from \$20 to \$30, and Counties from \$50 to \$150.

J. H. THOMAS, Brooklin, Ontario.

N.B.—Parties residing in the Counties of Carleton, Russell, Ottawa, Pontiac, Renfrew, Lanark, Leeds, Dundas, Stormont, Glengarry and Prescott, and desiring to purchase my hives, must in all cases address their orders to JOHN HENDERSON, New Edinburgh, Ont. v5-6-1f

ITALIAN QUEENS.

HAVING made arrangements for BREEDING a large number of Italian Queens, I will be able to fill all orders for the same, guaranteeing their purity and safe arrival by express. Have obtained two very fine Queens through Mr. Gray, of Ohio, for breeding purposes, and therefore prepared to furnish Queens of a bright color, and producing fine workers. Price \$5 Each. Bee keepers would do well to send their orders at once.

J. H. THOMAS.

JONES & FAULKNER,

(Late J. Jones & Co.)

Dairymen's Furnishing Store!

—AND—

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.

No Duty on Annatto purchased in the United States.

Special attention given to Canadian orders. v4-19-1f

FOR SALE,

THE thorough-bred short-horn BULL "Desdichado," A. H. B. 5501 C. H. B. 836 White; calved 26th April, 1863. Price \$250. Apply to J. B. LEWIS, Farrister, &c., Ottawa. v5-14-1*

GEO. A. DEITZ, The Great Seed Wheat Grower,

CHAMBERSBURG, Pa., sends free a Descriptive List of the best Seed Wheats in the world. v5-11-6t

Markets.

Toronto Markets.

"CANADA FARMER" Office, July 13th, 1868.

FLOUR AND GRAIN.

The produce market continues quiet. There is rather more firmness in the market, and an advance on flour has been established.

Flour—The market is firm, with an advancing tendency. The demand has improved, and stocks being light, prices have advanced. To-day 100 bbls No. 1 super. sold at \$6.40, and 300 barrels do. sold at \$6.56. Holders generally are now asking \$6.50 for No. 1 super. A 100 barrel lot of spring wheat, extra, sold at equal to \$6.60 here.

Wheat—There is more firmness in the market, and holders have finally advanced their prices. For spring wheat \$1.45 is now generally asked. We heard, however, of no sales at that figure. Fall wheat is offering at from \$1.43 to \$1.53 according to quality. \$1.53 was offered to-day for a lot of choice fall, and refused. We heard of no sales of wheat to-day.

Oats—The market has advanced. For retail lots 55c. is now asked.

Barley.—Nothing doing.

Peas.—The market is firm. We heard of no sales to-day. Worth nominally from 85c. to 88c.

Eggs—Scarce, and in good demand. Selling at from 14c. to 16c.

Butter—Dairy tub per lb. 13c. to 14c.; store packed 11c. to 12c.

Cheese—10c. to 11c.

Pork—Mess, per bbl. \$22 to \$23; prime mess, \$17 to \$18; extra prime, \$15.50 to \$16.50.

Bacon—Cumberland cut, 10 1/2c. to 11c.; roll, 12 1/2c. to 13 1/2c.

Hams—12 1/2c.; covered, 13c. to 13 1/2c.

Shoulders—Smoked, 10c. to 10 1/2c.

Lard—In kegs, 13 1/2c. to 14c.

Eggs—Packed, 16c. to 17c.

Beef Hams—13c.

Tallow—7c. to 8c.

Hides and Skins.—Hides, green, rough, per lb. 5 1/2c. to 6c.; green inspected, 7c.; cured and inspected, 7 1/2c. to 8 1/2c. Calfskins, green, 10c.; cured, 12c.; dry, 18c. to 20c.

Wool—Per lb. 26c. to 27c.

Hops—Inferior, per lb. 10c. to 15c.; medium per lb. 15c. to 20c.; good per lb. 20c. to 30c.

CATTLE MARKET—There has been a complete stagnation in the cattle market during the past week, the hot weather and strawberry season having lessened the demand for meat. The prices are considerably lower, having declined 1 1/2c. per lb. since our last report. We quote per 100lbs. dressed weight:—1st class cattle, \$6; 2nd do. \$5; 3rd do. \$4. Sheep have been in plentiful supply, but have not been in good demand. It was difficult to effect sales. We quote:—1st class \$4; 2nd do. \$3; 3rd do. \$2.50. Lambs have been scarce and in demand. We quote: 1st class \$2.50 each; 2nd do. \$2; 3rd do. \$1.50. Calves have been more plentiful and are lower. We quote: 1st class \$6 each; 2nd do. \$4; 3rd do. \$3.

Montreal Markets, July 13.—Flour, superior extra, \$7.50; extra, \$7; fancy, \$6.60; Welland Canal superfine, \$6.60 to \$6.70, superfine No. 1, Canada wheat, \$6.60 to \$7; superfine No. 1, Western wheat, \$6.25 to \$6.60; No. 2 do, \$6.20 to \$6.30; bag flour, \$3.40 to \$3.50. Wheat—Canada Fall, \$1.50; Canada Spring, \$1.55 to \$1.56; Western, \$1.50 to \$1.52. Oats—Per 32 lbs. 42c to 43c. Barley—Per 48 lbs. 90c to 95c. Butter—Dairy, 15c to 17c; store packed, 13c to 16c. Cheese—9c to 10c. Ashes—Pots, \$5.65; pearls, \$5.45. Pork—Mess, \$24; Prime Mess, \$16.25; Prime, \$15.25. Peas—\$1.50 to \$1.10. Rye Flour—\$5.75 to \$6.

Milwaukee Markets, July 11, noon.—Wm. Young & Co.'s report.—Wheat—Receipts, 5,000 bushels; shipments, 37,000 bus. No. 1 wheat quiet at \$1.86; No. 2 do. at \$1.78. Flour unchanged. Pork firm at \$28.25. Freight nominal.

Chicago Markets, July 11, noon.—William Young & Co.'s report.—Wheat—Receipts, 8,000 bushels; shipments, 18,000 bushels. No. 2 wheat inactive at \$1.80. Corn easy at 93c; receipts 181,000 bush.; shipments, 337,000 bush. Pork firm at \$28.50.

New York Produce Market.—July 11.—Flour—Dull and drooping; receipts 3,700 bbls; sales 7,800 bbls at \$6.75 to \$7.20 for super. state and Western; \$8.00 to \$8.70 for common to choice extra state; \$8.75 to \$10 for common to choice extra Western.—Rye Flour—Steady at \$7.75 to \$9.80. Wheat—Dull; receipts, 85,000 bush. Rye—Quiet; sales 4,000 bush. Western at \$1.86; Canada at \$1.87.

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