

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

Coloured covers/
Couverture de couleur

Covers damaged/
Couverture endommagée

Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée

Cover title missing/
Le titre de couverture manque

Coloured maps/
Cartes géographiques en couleur

Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)

Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur

Bound with other material/
Relié avec d'autres documents

Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure

Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

Coloured pages/
Pages de couleur

Pages damaged/
Pages endommagées

Pages restored and/or laminated/
Pages restaurées et/ou pelliculées

Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées

Pages detached/
Pages détachées

Showthrough/
Transparence

Quality of print varies/
Qualité inégale de l'impression

Continuous pagination/
Pagination continue

Includes index(es)/
Comprend un (des) index

Title on header taken from:/
Le titre de l'en-tête provient:

Title page of issue/
Page de titre de la livraison

Caption of issue/
Titre de départ de la livraison

Masthead/
Générique (périodiques) de la livraison

Additional comments:
Commentaires supplémentaires:

Wrinkled pages may film slightly out of focus.

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



Vol. V. No. 3.

TORONTO, CANADA, FEBRUARY 1, 1868.

POSTAGE FREE.

The Month.



FEBRUARY is a somewhat milder month in our climate, than January. This is not the popular impression, but it is nevertheless the fact, as established by the unimpeachable testimony of the thermometer. The popular impression may, perhaps, be accounted for to some extent by these two things: first, there is no thaw at the beginning of February to mitigate for a little the rigour of the season; and secondly, in addition to steady cold, we are liable this month to have storms, which make the weather seem more severe than it really is. The study of climatology is as yet in its infancy in this country. Careful meteorological observations have not been taken at many points for a sufficient number of years to give us a trustworthy average. So far as ascertained, the following are the mean degrees of cold at the several Canadian points named, during the months in question.

	Jan.	Feb.
Stratford.....	18°.42	20°.06
Hamilton.....	22°.80	23°.90
Battle.....	15°.50	18°.64
Toronto.....	20°.70	22°.50
Bellefleur.....	17°.61	20°.34
Montreal.....	12°.10	22°.00
Quebec.....	7°.20	15°.80
St John, N. B.....	14°.37	21°.42
Halifax.....	20°.00	25°.00

Winter begins astronomically about the 22nd of December, viz., at the time of the winter solstice, as it is termed. Then the day is shortest. But curiously enough, winter does not often fairly set in until after the sun has turned the corner, and is daily shining higher and higher in the heavens. Hence the proverb, "As the day lengthens, the cold strengthens." D. Holmes observes, "We do not commonly feel that winter is thoroughly in earnest until after the Christmas holidays, which include the 1st of January. And inasmuch as on the 14th of February our thoughts are led, by the ingenious fiction of St. Valen-

tine's day, to look forward henceforth to spring, which is at hand, we may say that the white pill or marrow of winter lies locked up in the six weeks between these two festivals." Another sprightly writer says:—"There is an old artistic tradition which puts the month of January in the guise of a young babe, (typical of the New Year of course,) making a bold front of it, and not like Shakespeare's babe—

'Mewling and—'

to the great discomfort of the nurse. For my own part, I can never think of January as a babe, whether methodical in its habits or the contrary, but rather as a fine old gentleman with frosted beard, who has seen his best days, and is content to take his ease by his own chimney corner. And if I were to symbolize February, it should be as a decorous, white-haired, venerable lady—something shorter than January—who is not over-clamorous for rights, but yet has her storms, and who is most effective when most serene."

So we have got past mid-winter, and may look forward, not to deepening cold and strengthening frost, but to the mysterious and mighty, yet gentle and gradual loosening of the chains that bind universal nature as a prisoner. But stop; we recall that adjective—"universal," for there is a degree of freedom and life left, and it is not quite correct to say that all nature is in the thralldom of wintry death. The flowers indeed are held close prisoners, the forests are bare and leafless, but the staid, prim, evergreens, the pines, firs, and spruces, are green and fresh as in the bloom of summer. Let no man be willing to die until he has planted, somewhere or other, at least one evergreen! There is always something astir in the animal world all winter long. Quite a number of birds give us their company all the year round. The solemn rook is always at hand to officiate at the obsequies of poor Cock Robin, who often lingers with us through the winter. The sparrow, chickadee, snow-bird, and others, enliven the winter with life and liberty. The owners of young orchards know, or ought to know, that mice travel about under the snow, and will gnaw the fruit-trees if they can. Thwart them, Oh man expectant of apples, by tramping the snow round the base of the young trees. The squirrel and fox, the hare and rabbit, the mink and musquash, are lively and stirring through the winter. "How these manage to live all through the desperate cold and famine-breeding snow," says a writer already quoted, let Mr. Emerson's "Titmouse"—as charming a bird as has talked since the days of Esop—tell us from experience;—

"For well the soul, if stout within,
Can arm impregably the skin,
And polar frost my frame defied,
Made of the air that blows outside."

The farmer needs the dauntless energetic spirit of this heroic "Titmouse," to push along the several branches of winter work on the farm, of which we spoke in our 1st of January issue. We can add nothing to the brief practical directions then given,

and if we could, should hardly have the heart to do so after perusing the following article which we copy from the *Rural New Yorker*, of Jan. 25th., and which certainly puts in a powerful plea in behalf of that oppressed and over-worked being, the farmer, to whom, like the wicked, there is no rest nor peace all the year round. We quote the more readily, because our contemporary slyly gives an admirable summary of winter farm work, which is doubtless meant as an ingenious reminder to those whom the wily advocate appears to be defending from over-work and hard usage.

"The agricultural press is prolific in suggestions and advice about winter work—the *Rural* gives its share,—and, from reading the whole, a tyro in farming would come to the conclusion that this season of the year is one of almost infinite time to the husbandman, and that it is really difficult for him to find proper employment to occupy his leisure. Reflect briefly on the quantity of work laid out; there is the wood pile to be heaped up for summer use; the manure pile to be spread from the sled to forward operations in the spring; the forest to be stripped of fence and building timber; muck hauled from the swamp, stone from the field, if the weather admits; ploughing forward, where the climate allows; visits exchanged; farmers' clubs organized and sustained, and the agricultural journals subscribed for and read. Saying nothing about feeding and stabling cattle, hogs, sheep, and horses, getting them to water and making them generally comfortable, we think the amount of work mentioned sufficient, if done, to keep most farmers from suffering any illness that is begotten of idleness.

"But really in these Northern latitudes, where snow and frost chain the earth in their icy bonds for more than a third of the year, and when darkness throws his mantle over the body of Time, leaving scarcely the venerable gentleman's extremities to be illumined by daylight, how much of all this programme can the farmer get through with? Care to the dumb animals, which depend on him for their daily food, claims his first attention; the mid-day feeding follows close on the chores of the morning, and the evening's labours must begin early to avoid working in darkness. Then there are stormy days, and cold ones, too, when it is advisable to house one's self by the fire rather than encounter the severities of the weather. Considering all this, if the farmer dispenses with a 'hired man,' what can he accomplish aside from his necessary work of caring for stock?

"Much of the farmer's winter work, obviously, should be intellectual, consisting of reading, comparing, investigating the various questions which arise in his calling, and in laying plans for the future. Nature seems to hint at this in the opportunity given by stormy days and long evenings.

The foregoing recapitulation, though full enough "to point a moral and adorn a tale," omits an important item of winter work, which it may be well just to mention, lest our readers, after all, should not turn up our own article in the 1st January issue. We refer to what may be called *shop-work*, the making, repairing, painting and putting in order of various implements and conveniences for the spring and summer campaign, the busy season when these things are sure to be wanted, and when it is very convenient to have them ready to hand.

The Field.

Prize Essays.

To the Editor of THE CANADA FARMER:

SIR,—I do not know whether you admit into your journal things "old" as well as "new," but trusting you may sometimes do so, I enclose you a copy of the oldest Canadian Essay on the cultivation of wheat that I have seen. There was an Agricultural Society formed for the County of Northumberland on the 17th May, 1828. They held their first show at Colborne on the 19th October, 1829, and with commendable liberality gave (among other prizes) two for essays on the cultivation of wheat, of which the following received the first prize—an example which has not been often followed by our Agricultural Societies. The liberal-minded men who formed this early society, amidst many drawbacks and discouragements, without any Government grant to assist them, could little foresee how successful their efforts would ultimately prove. At their first show they awarded twenty prizes, amounting to seventy seven dollars, while in 1862, the latest return I have seen, there were awarded over \$2,030 in prizes, by the different Agricultural Societies in the county. W. R.

The following is the Essay referred to by our correspondent. We publish it both on account of its own interest and merit, and in the hope that our Agricultural Societies may take the hint, and include in their prize list premiums for the best essays on specified agricultural subjects:

ESSAY ON THE CULTURE OF WHEAT.

BY MR. JOSHUA WEBSTER.

GENTLEMEN.—As I am not an officer of this Society you will not expect a complimentary address from me; and as I am not versed in classical lore I shall not attempt to tell you what great men of ancient or modern times have done or ought to do. Neither shall I, as I might in writing on agricultural pursuits in general, take notice of its having been the first and still continuing to be (notwithstanding the scorn of the fop) the most honorable, healthful, pleasant, and independent pursuit that man can engage in; but I shall leave these subjects to abler heads, and hands more used to handling the pen; as mine are more accustomed to wielding the axe or guiding the plough.

I shall endeavor, in a plain farmer style, to confine myself exclusively to the culture of wheat, and to place within the reach of those in the humbler walks of life the possibility of success in this most important branch of Agriculture. And, in submitting to you a few ideas on this subject, my observations will be such as I have tested by actual experience.

I consider the art of cultivating wheat in a great measure consists in knowing how to prepare the soil. I shall in the first place take notice of this part of the subject—and shall be quite particular on the clearing of new land and the preparing of old. As a great part of our country is yet in a wilderness state, and quite a share of the wheat brought to our markets is grown on new land, I deem it important that our enterprising young men who are clearing away the forest, should know how to profit by their hard labor. If you wish so to do, attend to the following rules:—Let the underwood be cut in the autumn, before the leaves fall, and the timber in the winter or early in the spring. This will insure a good burn, which is the first thing requisite for a good crop. Do your logging in the month of June; and if you wish to make money, do it before you burn your brush, and save ashes; these will more than pay you for clearing the land; and by burning at this season you will attract a drove of cattle about you that will destroy sprouts which may be growing. Do not leave more than four trees on an acre, and girdle these in the full moon of March, and they will never leaf again. Thus you may have your land prepared for seed before harvest.

In this way you may drive your work, and not have your work always drive you. But if you are chopping when you ought to be logging, and logging when you ought to be sawing, you are always in a hurry; and it is very true that what is done in a hurry is ill done. The consequence is, you lose your ashes, and from being out of season in sowing, your crop will usually smut or blast, and the saying of Solomon is well verified, that he that does not improve seed-time may beg in harvest. On turf land, if it is strong, and you wish so to do, you may rear a crop of peas without injury to your crop of wheat, providing your seed peas are perfectly clean; but for this your turf must be carefully turned over in the fall. But for summer fallowing, as it is termed, red clover turf is undoubtedly the best. If your land is worn, and you wish to recruit it, do not break it up until your clover gets in full bloom. But if your land does not need this, be sure to turn it over in May or June. Take a good plough, and steady team, have your plough rigged with a coulter and gauge wheel, and do not plough more than four inches deep; and be sure and turn the turf down, for your crop in a great measure depends on the first ploughing. Follow the plough with the roller, and then a light harrow lengthwise the furrows, then cross-plough as deep as you can. Let your land remain in this state four weeks; then apply a heavy harrow with a lively team crosswise the furrows, then cross-plough as deep as you can. Let your land remain in this state till seed-time, then level it with a heavy drag, and apply the seed. Always plough in your seed with a light plough, as this will enable the crop to stand both drought and frost better, having more root than if covered with a drag only. If your land is low, plough it in ridges about eight feet wide, that the water may drain off, pass a light harrow over it, and conclude by rolling thoroughly. I suppose that few persons will question the propriety of the above statements, but I am aware that much has been said and written upon the manner of preparing seed to prevent smut; but if I should happen to differ from the theory of learned men, I hope they will pardon my ignorance while they respect my candor, since I venture on such statements only as I have proved to be useful. It is of the first importance that seed be clean, for it will be impossible to grow a clean crop from foul seed. If possible, change your seed, or procure the growth of a different soil; much more depends on this than the distance it is removed. I am convinced that if it is removed from a strong to a weak soil, or from a weak to a strong soil, the distance is quite immaterial. Never sow your wheat when the earth is wet; better wait a week. If possible, sow old wheat, and you will have no smut; but if this is not possible, for old land prepare your seed in the following manner:—Put it in a cask with four quarts of clean lime to a bushel; mix it well while dry; cover it with warm water for three hours; then draw off the water, and in twenty-four hours your wheat, if kept warm, will be finely sprouted and dry, and may be sowed without any inconvenience. This will be a real benefit to your crop, as it will facilitate its growth, whether it entirely prevents smut or not; but I never knew smut when the seed was thoroughly prepared in this way. I have made several experiments of various methods which I saw recommended, one of which I will state. I sowed three bushels of spring wheat which was smutty, a part prepared as above, a part soaked in brine, and part dry. There was no smut in the first; about one-fourth in the brined, and of the dry near one-half; all sowed the same day. I never lime wheat to sow on new land, for this reason—every grain which becomes thoroughly dried by the sun never grows. Great pains should be taken in harrowing new land, it cannot be harrowed too much.

Commence sowing by the tenth, and have done by the twenty-sixth of September; if sowed earlier than this, the late spring frosts may spoil it; and if later, it will generally rust and blast. Do not harvest your wheat until fully ripe; if it shells a little you are no loser by it, you will more than make it up in the thrashing; and it does not require to stand in the field exposed to damage by rain, but may be put in the barn in fine order; and if there should happen to no smut, it will not injure your crops half as much as it would if you cut it green, and get it in the barn damp. Never employ a drunkard in your harvest; he will drink up one man's wages, waste another's, and hinder the other hands the time of another; thus you might have four good hands for the price of a drunkard. I shall notice but one thing more, and

that, though last, is far from being of the least importance. Indeed, it is that on which our whole prosperity as farmers depends, and that is a good fence; without this all our labor is vain. A poor fence is worse than smut, choss and cockle, altogether, as it not only spoils our crops, but spoils our cattle also.

These are my views on the culture of wheat; and while I have pointed out errors, I have shown remedies which are in every farmer's reach. And, I ask, what observer of the cause of the failure of our wheat crops would not in ninety-nine cases in an hundred impute it to the mismanagement of us farmers rather than to our excellent soil? Half clearing new land or clearing it too late, and half harrowing it, and poor, late, and shallow ploughing of old land, with foul seed, and bad fences, are causes which destroy more wheat crops than smut, frost, drought, mildew, insect, or rust; and are evils from which every man should be entirely free who deserves the name of farmer.

COUNTY of Northumberland, 1829.

A Canadian Rotation of Crops.

To the Editor of THE CANADA FARMER:

SIR—I have waited patiently for nearly two months expecting some of the scientific farmers of Ontario to discuss largely the merits and demerits of the rotation and rotting the turnips on the land as manure, recommended by your correspondent "Vectis." I was very sorry that a gentleman of Guelph, in a recent issue of the CANADA FARMER, disposed of the subject in such a brief manner. It is not my intention to find fault with "Vectis," nor criticize the observations of your Guelph correspondent, but I beg leave, first, to point out where the plan laid down by "Vectis" will not, in my opinion, suit the wants of this country, and, second, to lay before the farmers of Canada a rotation that I have adopted, which can be completely carried out without any additional expense, except, perhaps, adjusting the fences in order to make the fields as near one size as possible.

It is readily admitted by every intelligent farmer in the country that a good rotation is necessary as a help to keep up the fertility of the soil, and likewise as producing more value from the land than can possibly be derived from the hap-hazard sort of farming so extensively practised in Canada. The great difficulty seems to be in getting at a system agreeable to our soil, climate, and the demands of our market. It should certainly be the object of every farmer to raise a proportion of wheat, barley, peas, oats, potatoes, as well as stock, including horses, milk-cows, beef-cattle, sheep, hogs, and poultry. These are the principal commodities our market demands. The system recommended by "Vectis" is the four years' rotation as practised in England. It appears quite obvious to me that this rotation will not work profitably in Canada at present. On a farm of eighty acres there would be twenty acres of turnips; twenty acres of barley or spring wheat; twenty acres of fall wheat; twenty acres for pasture and hay; no oats, nor peas, without making subdivisions in the fields which would render the system irregular and incomplete. But waiving the subject of feeding off twenty acres of turnips with sheep, as in England, and adopting the plan of rotting them on the land—say pull and take home every other row for winter food—the system is still at fault. Twenty acres of grass will not maintain the horses, cattle, sheep, and hogs, through summer that are necessary to eat ten acres of turnips during winter; and if this system were generally adopted they could not be bought, for there is no waste land in this country where they can be raised and kept during winter without shelter as in England, consequently every farmer must depend upon his own resources for his sufficiency of stock. There is no doubt but the ploughing down of clover acts as a valuable fertilizer, and on some soils and under certain circumstances, the plan may be carried out as a principle. But we must have hay, and pasture, and if we must have clover to plough down we must have a proportion of each which cannot be under the four years' system. Again, the land only being in grass one year, and perhaps mowed the same season, would be but a small aid in restoring fertility to our already over-cropped fields.

For many years I have sought after a rotation completely suitable to this country. I have carefully considered all the plans suggested in the CANADA FARMER. I have read of all the different systems practised in the British Islands, and other European countries. I have in theory tried the working of a number of them in this country, and feel satisfied that none of the old country plans will fully answer Canada. By taking part of one rotation and part of another, I have grown into a system which promises to preserve the fertility of the soil, and produce a proportion of what our market demands. For example, we shall take a farm of ninety-six acres, or eight twelve-acre fields, and commence with turnips. The fall preparation of the land for this crop, ploughing, manuring, together with the repeated scuffling, hoeing, and thoroughly cleaning of weeds, answers the part of a fallow in the rotation. Every other row of turnips is to be taken home and stored for winter food, the remainder to be eaten by the sheep and cattle, intended to be fattened and sold, I mean fed off, in so far as the season will permit. The field would be ploughed in the spring and sown with barley and spring wheat, and at the same time seeded with clover, then hay, then two years pasture, peas after the hay, fall wheat after the peas, and oats after the fall wheat, which completes the rotation. This system gives first, twelve acres of turnips; second, twelve acres of barley or spring wheat; third, twelve acres of clover hay; fourth, twelve acres pasture; fifth, twelve acres pasture; sixth, twelve acres peas; seventh, twelve acres fall wheat; eighth, twelve acres oats. By only mowing the clover field once there would be thirty-six acres of prime pasture during the end of summer, capable of maintaining a large stock of cattle and sheep. Twelve acres of good clover hay, wheat chaff, pea-straw, oat-straw, and six acres of turnips, will keep a large stock in good condition through the winter.

The fears entertained by your Guelph correspondent in regard to the wheat being lodged and ruined by rust are altogether premature. It is time enough to complain of such when actual experiment has proved it to be a fact. In the meantime I see no danger of enriching the land too much.

CANADIAN FARMER.

GLADSTONE, Jan. 22, 1868.

Farm Notes.

To the Editor of THE CANADA FARMER:

SIR,—Your readers are indebted to your correspondent "Vectis" for many new ideas relating to the enriching of soils by the growth of green crops, in his exhaustive and highly original article on a "New use for Turnip Crop," published in your paper for 2nd Dec. His reasoning shows clearly the advantage and value of green crops as an agent for bringing up the fertility of worn-out lands, and adding to the soil the elements exhausted by the growth of successive crops of the cereals. He has argued fully as to the merits of the turnip crop for rotting on the land, or ploughing into the soil to restore the elements required; but may not the clover or other plants be equally adapted for the purpose? That crop will be the most valuable, other things being equal, which will contain the greatest amount of those elements which added to soils go to enhance their fertility, that can be produced at the least cost of labor, of artificial fertilizers, and the elements extracted from the soil during its growth. Now, given the gross weight of the produce of an acre of turnips and that of a like area of clover, or of some other plant, both grown upon like soil and having equal quantities of manure and labor applied to each crop, your readers can easily guess (by calculating with the aid of the different tables of analysis given in works relating to agricultural chemistry, the amount and value of the elements that different plants contain) the comparative values of the various plants for green manuring.

But a few simple experiments, upon different soils and farms, would throw more light upon the subject and satisfy cultivators more fully than mere theory, and the evidence given by your correspondent will go far to prove the value of his theory. Two things have been demonstrated by practice to be correct, viz: the value of green crops for manuring lands by ploughing them in or allowing them to decay upon the surface; and the superior value of experiments,

properly conducted, over theory, for ascertaining the comparative value of the different means and materials for manuring lands.

FARM GATES.

An error seems to have crept into the closing paragraph of my communication in your number for 15th Dec., relating to farm gates, which I would like corrected in your next issue. If your readers that keep files of the paper will turn back, and insert Fig. 1 between the words "gate" and "which is," &c., in the last line but one of the article, it will give the impression I meant to have conveyed.

The gate represented in Fig. 4 is a combination of different parts of other plans which have come under my notice at various times. The truss principle as used in bridge-building was first applied, I believe, to the construction of gates by Geo. E. Woodward, Architect, New York, and is now extensively used in the erection of these fixtures, from the simplest farm-gate to those required for the finished park, and made on this principle, they are unsurpassed in beauty, strength and economy.

J. F. C.

L'Original, Ont., Jan. 4th, 1868.

New Seedling Potato.

We have received from Major Bruce, of London, a sample of a new seedling potato which he has now been raising for several years, and which, therefore, he considers established as a distinct variety. The specimens sent to us are of uniform medium size, with a general oval form, and a slightly rough skin, resembling somewhat the Carter potato. A portion of the sample was cooked and brought to table, that we might have an opportunity of reporting on their quality and flavour. We can, without any hesitation or reservation, speak in very high terms of their merit in this respect; in which, indeed, they left nothing to be desired. So highly do we esteem them after this first trial, that we shall reserve the remainder of the sample sent us for seed, and if we are successful in raising as good tubers as those we have received, we shall consider we have gained a valuable acquisition to our kitchen garden. Major Bruce considers the soil best adapted for the growth of these potatoes is light fertile land, as they are apt to grow too large in very rich heavy land. The yield, we understand, is very abundant, being, under favourable circumstances, about 250 bushels to the acre. Major Bruce has deposited about thirty pecks of this new potato in Mr. Griffin's seed store, Richmond Street, London, where parties wishing for seed may apply; but, as it is thought desirable that the seed should be distributed as widely as possible, no larger quantity than one peck will be supplied to any one purchaser. The name bestowed on this variety is "Bruce's Ruby Seedling." We cordially commend it to the notice of Canadian farmers.

Alsike Clover a Profitable Crop.

To the Editor of THE CANADA FARMER:

SIR,—In the CANADA FARMER of August 15th you gave a short account of a small field of three and a half acres of Alsike clover that I was then cutting and securing. I had twenty loads, and from three-quarters of an acre adjoining it, I cut four more, making in all twenty-four loads from four and a quarter acres, all of which I saved for seed. Last week I thrashed it, and I had thirty-three and a half bushels of beautiful seed. Enclosed you will find a sample of it. I find ready sale for the seed here at 30cts. per pound, nearly half of it being already engaged. When it is all sold, it will amount to the snug little sum of 603 dollars, or about 142 dollars per acre. I am now seeding the hay to my horses and cattle; it is cut up quite fine by thrashing, but still I think it nearly as good as red clover hay. My stock eat it up clean, and seem very fond of it. I

think there is no danger of its winter-killing or heaving out of the ground in the spring, as our red clover does, for the roots are fine, like the common white clover root. If it does not, it will soon take the place of red clover through this section of country, and then we shall have a land flowing with milk and honey, (provided every farmer keeps as many hives of bees as cows,) for it makes plenty of good pasture for cows, and also for the bees. Parties purchasing the seed should be sure and get the right kind, as I am informed that there is a small inferior kind that grows short and brings a light crop.

BROOKLIN, Jan. 15, 1868.

H. M. THOMAS.

PROTECTION FOR WHEAT FIELDS.—The Country Gentleman recommends a thin covering of straw upon winter wheat as a safeguard against winter-killing, and states that part of a field so treated yielded twenty bushels per acre, while the rest was so completely destroyed as not to be worth harvesting. Knolls and other spots particularly liable to be left bare of snow through high winds, may be protected in this way, even if the entire field be not so treated.

BARBERRY HEDGE.—A correspondent of the Prairie Farmer says that he has tried a barberry hedge on a moderate scale, with much success. He has bushes ten years old, that for four years past have been strong enough to "turn all kinds of stock." Among the good qualities of the barberry, he very properly mentions its not proving troublesome, by sending out suckers, but that it merely tillers like a stool of wheat—that it is perfectly hardy, and that the fruit is both ornamental and useful. It may be proper to state to our readers that probably a greater number of years than six would be required to make a good barberry hedge at the West, although on the rich soils of the West that time has proved amply sufficient.

TURNIPS FOR MANURE.—"H.K." writes: "In the CANADA FARMER, for Nov. 1 and Dec. 2, there are some original ideas with regard to the growth of turnips, on which both the author and the editor invite the comments of any who feel interested in the subject. While agreeing with most of what is said on the matter, I would ask two questions: First, Is there any need to insist so strongly on their being fed upon the field in which they grow? It is usually a very wet time of the year, and (for such of us as have clay soil) the working or treading of the land in wet weather is usually considered a great disadvantage. One of the objections to taking the turnips to the barn is that 'if other land wants the manure worse than the turnip land, it will get it.' If it really does want it worse, it is surely an advantage instead of a disadvantage to make the change. Second, Could not a turnip crop be killed by ploughing under, without going to the expense of digging and cutting them?"

TURNIP CROP IN QUEBEC.—Mr. G. Thorburn, of Montreal, sends us the following additional communication respecting his crop of turnips:—"I was pleased to see by 'Dominie's' letter, dated Pilkington, and your quotations from the same, that large crops of turnips can be grown in Ontario—apparently larger than mine. I should perhaps say absolutely, rather than apparently—although when all things are considered, I rather think the balance, if any, will show in my favor. No mention is made of the weight of tops left on the ground in the case of No. 4, whilst I considered the fact of so very great a weight in my crop a most important element indeed in the case. I should have said in my letter that, owing to the rapidity of their growth and the pressure of haying work, my turnips never had a hoe in them but at 'singling.' Not that I mention this as a boast, far from it, still, I have no doubt whatever that it detracted somewhat from the bulk of the crop. The only 'hoe' I ever use after 'singling' is the 'Horse-hoe.' I see No. 4 crop had two 'hand-hoes.' It would have been a satisfaction, too, to have known the kind of turnips constituting this crop and the date of measurement. I fancy you have nearly a month longer in 'Ontario,' at least in Pilkington neighborhood, for turnips to grow than down here. Mine were measured at the time they were lifted, (23d Oct.) You must grow 'stunning' potato crops to have passed 402 bushels to the acre without comment. My crop, I should have informed you, was planted 'whole,' and 24 inches between each 'set,' drills 30 inches apart.—A somewhat novel experiment. I do not find that you have reported a prize list this year (1867) for roots. Would it not be well to do so regularly?"

Stock Department.

The First Prize Galloway Cow, "Queen of Beauty."

We present herewith an engraving of the above-named fine animal, winner of the first prize in the class of aged Galloway cows at the last Provincial Exhibition. She was bred by John Torrance, Esq., of Vaughan; was calved June 15th, 1858, and is consequently in her tenth year. Her sire was the celebrated "Black Jack," and her dam, the imported cow "Black Bess." "Queen of Beauty" is owned by Thomas McCrae, Esq., of Janesfield, Guelph, and has taken prizes whenever shown since she came into his possession. At the late Kingston Show, she took the first prize over the cows that took the first and second prizes at the Provincial Exhibition the previous year. Her present owner informs us that she improves as

Shams of the Show-yard.

MAISTER EDITOR,—It maybe disna become the likes o' me tao write tae a paper whaur sae muckle talent is shewn; but I hae ji-t been readin' yer able and enterteening paper on "Shams of the Show-yard," and I canna withstand the inclination tae say a word or twa upon them as weel. Ye hae struck exhibiturs geyan sair upon o'erfeedin, and sae I needna say nae mair aboot that than that I agree wi' every word ye hae written, and wad gang in for nae prizes whaur the beasts are spiled wi' bein' o'er fat. Ye haena spared the faermers wha hae used the shears for the the shapin' of sheep, and they re weel deservin' yer anger; but in my puir opinion this shapin' o' sheep isna sae bad as o'erfeedin, for o'erfeedin is a burden and cruelty tae the animal, while shearin', in the way ye state, only deceives the public, and, wi' yer permission, it taks in a wheen o' the judges tae. But, besides "sheep sculpture," ye'll ken as weel as me

Canadian Natural History.

The Snow-Bird.

Fringilla hiemalis.

THE Snow-bird, the subject of the accompanying illustration, is familiar to every Canadian, being among the very few members of the feathered tribes that visit us during the winter, and enliven, by their presence, this inclement season. It arrives from more northern latitudes as soon as the frosty weather sets in, and leaves us again in early spring for colder regions, where it breeds during the summer. Perhaps there is no species of bird so numerous over the whole continent of North America as the Snow-bird, its range extending from the Arctic circle to the Gulf of Mexico. So well known is it to every Canadian, that it scarcely needs description, every child among us being familiar with its appearance.



she grows older, that she has dropped a calf every year since she began to breed, and that her stock though seemingly a little coarse when young, improved in fineness and other good qualities with age. Our engraving scarcely does justice to this excellent cow, from the disadvantage of the drawing being made from a photograph. Owing to her restlessness while being photographed, the neck shows thicker, and the head heavier, than life. The muzzle also is up in a somewhat unnatural position, on account of her being halter-held while being photographed. Barring these defects about the head and neck, the engraving is a very correct representation of this valuable cow. We congratulate Mr. McCrae on the success which has thus far crowned his efforts as a breeder of Galloways, and hope his herd will always maintain the high character it has attained at so early a period of its history.

THE Turf Field and Farm sums up the teeth of the horse as follows: 24 double or grinders; 12 front, called gatherers; 4 tushes, or single file teeth—or 40 teeth in all. Mares rarely have the tushes. The teeth of a horse are perfected at about eight years of age.

that sheep are jist as often o'erfed as nowt, and sae, as it were, there are twa faults in their case. But I didna mean tae hae said as muckle on what ye hae written as aboot a sham ye hae taen nae notice o', and this is Ayrshire milk-kye. How often are the puir beasts left wi' the milk ne'er drawn for twa or e'en three days at least afore a show. If ony is taen awa, it's merely tae square the udder a wee and mak it look the richt shape. Weel, ye ken how sair it is for a cow tae gang three or four hours byo her milking time, especially in the summer time, let alane for twa or three days. Gin the judges "wad set their faces against" this tae, nae doubt it could be altered. I micht hae mentioned the scrapin' o' kye's horns, and even pittin on fause horns and tails, and lots o' ither things; but as this disna harm the beast further than botherin' it whan it's doin, I'll let it pass.—*Cor. of the Farmer (Scottish).*

A PAIR OF HEAVY SIZERS.—F. H. Hibbard, Cortland, N. Y., writes the *Rural New Yorker*:—"I take the liberty of sending the weight of my two-year-old steers, as weighed on the 11th of this month. The pair weighed 3,640 pounds. One was two years old in March, and weighed 1,915 pounds, and the other two years in April, and weighed 1,725 pounds. Both are thorough-bred Durhams and were bred and raised by me."

In systematic ornithology, its place is in the most extensive natural order, *Insessores* or *Perchers*, and the sub-order *Conorostres* (conical-beaked), in which it makes one of the numerous family of Finches, (*Tringilida*). The American goldfinch, or wild canary, belongs to the same genus, and the sparrows and buntings are nearly allied. The length of this bird is a little over six inches. The colour of the head, neck, the upper part of the breast, body and wings, is a deep slate, with a slight tinge of brown in the males, and more of the same colour in the female. Brown is also the prevailing colour of the young. In winter the slate tinge of the male especially is more marked and pure. The lower part of the breast, the whole of the belly and vent, are pure white; the three secondary quill feathers are edged with brown, and the primaries with white. The tail is dusky slate, a little forked, the two exterior feathers wholly white. These are fluffed out as it flies, and appear then very prominent. The colour of the bill is reddish; the eye is bluish-black; the legs are flesh-coloured.

Wilson, in his graphic descriptions of American ornithology, says of this bird that at first they are most generally seen on the borders of woods, among

the falling and decaying leaves, in loose flocks of thirty or forty together, always taking to the trees when disturbed. As the weather sets in colder, they venture nearer the farm-houses and villages; and on the approach of what is usually called falling weather, assemble in larger flocks, and seem doubly diligent in searching for food. This increased activity is generally a sure prognostic of a storm. When deep snow covers the ground, they become almost domesticated. They collect about the barn, stables, and other outhouses, spread over the yard, and even round the steps of the door, not only in the country and villages, but in the heart of our larger cities, crowding around the threshold early in the morning, glean up the crumbs, and appearing very lively and familiar. They cunningly avail themselves of the unwitting services of larger animals, following in the track of quails and even squirrels, and picking up such scraps of food as they can, from the patches of ground which these creatures have cleared of snow. In barnyards especially, the poultry are in this way their most efficient purveyors. They have also recourse, at this severe season of the year, to the seeds of many kinds of weeds that still rise above the snow, when the face of the earth is shut up from them, in corners of fields, and low sheltered situations, along the borders of creeks and fences, often accompanied by several species of sparrows.

In the spring of the year, about April, the males make a modest attempt at song, uttering a few low, sweet notes. At this season, they are also very pugnacious with each other. They make their nests on the ground and preserving their gregarious habits, even in this most secluded business of their lives, place them not unfrequently in small groups of several together. It is but seldom, however, that their nests are seen, as they retire to the more solitary northern latitudes to breed.

The Robin.

To the Editor of THE CANADA FARMER.

SIR,—The English Robin, our childhood's pet, is so intimately and so pleasantly associated with all our thoughts and recollections of "Home," that it has always been a source of regret to me that the *Turdus Migratorius*, a bird so widely differing in every respect from the British Redbreast, has been selected as its Canadian confrere. And this regret is enhanced by the consideration that another choice might have been made, in every way more satisfactory, in the Blue Bird, *Sylvia sialis*,—a bird named by Buffon *Le Rouge Gorge Bleu*, or the Blue Redbreast.

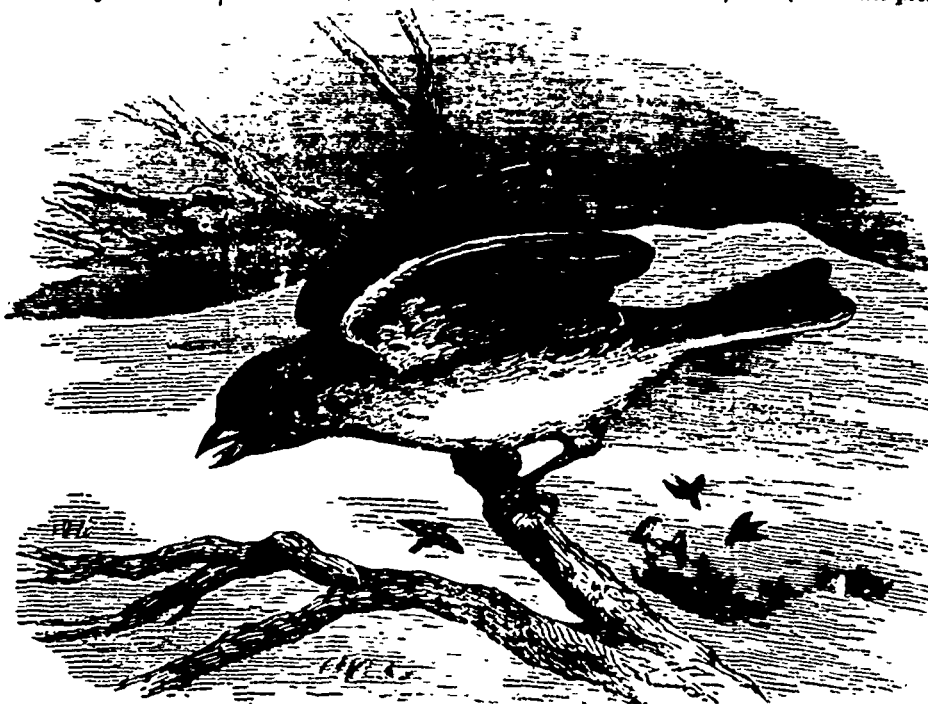
Sir W. Jardine says of this latter bird: "it will hold the place, in North and South America, of the Robin of Europe." Of the same bird Wilson writes: "In his motions and general character, he has great resemblance to the Robin Redbreast of Britain; and had he the brown olive of that bird, instead of his own blue, could scarcely be distinguished from him;" and in another place, he calls him the "representative" of the British Robin. Both birds, as well as the Australian Robin, belong to the sub-family, *Erythracinae*, of the *Sylviidae*, while the American Robin belongs to the *Merulinae*. (*Turdinae*? Ed. C. F.)

I cannot but fancy that the name of Robin was

given to the *Turdus Migratorius* by some enthusiast who had not, up to that time, seen a Blue Bird; and who, resolved that we should at all events possess the luxury of a Robin on this continent, gave that name to the first bird adorned with a rufous breast that presented itself to his view. Is it impossible that the nomenclature can be so far altered as that in future the *Turdus migratorius* may be known as the Red-breasted Thrush, and the *Sylvia Sialis* as the Canadian Robin? What says Professor Hinecks?

I have been tempted to take up my pen on the present occasion by reading your article on "Robins' Eggs" in the January 1st number of the CANADA FARMER. Hewitson, one of the best authorities on the subject of eggs of British birds, says that the Thrush lays four or sometimes five eggs, implying, of course that the usual number is four. Wilson makes precisely the same affirmation of the American Wood Thrush, while of the Migratory Thrush he asserts that the female lays five eggs. Again, Beckstein, the German Ornithologist, and Muirhead of Glasgow, agree in the declaration that the number varies from three to six.

LAKEFIELD, Ontario, Jan. 9, 1868. V. C.



Canadian Song Birds.

To the Editor of THE CANADA FARMER:

SIR,—From some of your remarks in articles on Singing Birds, published during the past summer, I venture to hope that a brief notice of the subject from an enthusiastic bird fancier may be acceptable. From my earliest remembrance I have been an ardent admirer of birds; and when I came to this country and settled in the bush, over thirty years ago, I missed, especially at first, the enlivening songs of birds; and I dare say, in my earlier letters, I fell into the same error that many have done since, by stating that we had no singing birds here, which was a grave mistake. Since that time there has scarcely been a summer that I have not discovered new accessions, as the country became cultivated. There are many species which are now plentiful where the country is cleared, that are still rare further back. I might mention the following: the Brown Thrasher, Golden Oriole, Corn Bunting, Rice Bunting or Bobbie Link, Grass Finch, and many others. These are all first-class singers; also the Cat Bird, or Northern Mocking Bird, whose entertaining performances in the summer months few birds can surpass. But our seasons are short, and though many persons are delighted to hear these welcome warblers during their spontaneous

summer sojourn here, very few take any trouble to retain them during winter. I am sorry that so few have that taste, for a more delightful study and pursuit than the care of these feathered songsters, can hardly be found. One great cause why the taste is not more cultivated, is the difficulty in knowing how to feed birds of different kinds. Now, cage birds might be divided into two classes, the soft-billed, and hard-billed or seed-eating birds. The former are the most difficult to domesticate, but by experience I have overcome the difficulty, and can and do keep in good health any kind of soft-billed birds, and that by a very simple and cheap diet. Soft-billed birds are those that in their wild state feed on worms and insects of different kinds; as a substitute for these, they must have animal food in some shape, and to feed them on bread and milk, raw meat, and other food of this kind, makes an aviary disagreeable in filth and smell. My mode is simply this: I get peas bruised into small particles, with this I mix, say, to 8lbs. of peas, 4lbs. of corn meal, a tablespoonful raw sugar, and three teacups of lard, or drippings from fresh meat (the former preferable); after melting and mix-

ing with the meal, put the whole into bake-pans, and put into the oven until all the lard is absorbed. This feed will do well alone, but in feeding, bread crumbs and biscuit might be added, and in summer, hard boiled eggs. This I feed always dry, so that it never sours, and birds fed on this diet are as clean as any seed bird, and thrive uncommonly well. My small aviary consists of Starlings, English Larks, Black Birds, Mavis or Thrushes, Robins, Bobbie Link, Cat Bird, Oriole, Grass Finch, Canaries, &c.; and some of these whose sweet song will not be heard out of doors for months, I have in full song at the present time. The feed I use for all these are the seeds generally used for birds, and the other mixture described above. In

summer, I had a dozen of kinds flying all in one room, but not having a suitable place for keeping in proper heat, I have to cage them through winter. In the spring, a good many of our songsters can be caught and put into the aviary, and will sing, in a few days, as well and a great deal more than when flying at large. If you think this worthy of an insertion in your valuable paper, please make use of it. I should be happy if I can be the means, in any way, to cultivate the taste for bird-keeping.

JOHN FAIRGRIEVE.

Hamilton, Dec. 30th, 1867.

SALMON AND TROUT RAISING.—Steps are being taken to re-stock the rivers of New England with fish. The first salmon of the season hatched Dec. 11. They are a part of a lot of 40,000 which were placed by the New England Commissioners at the Cold Spring Trout Ponds at Charlestown, N. H., to be hatched for the Connecticut river. The eyes of the embryo salmon were first seen in the egg about the 25th of November. The eggs were taken from the parent salmon, on the Miramichi, on the 10th of October, making sixty-two days for the period of their incubation. The first trout which broke shell at these hatching works this season came out on the 9th of November, thirty-five days from the time they were taken from the breeders, being the quickest time on record for trout in this country.

The Dairy.

American Dairymen's Convention.

THE following account of the third annual meeting of the American Dairymen's Association, held in Utica, N. Y., during the second week of January, commencing on Wednesday, the 8th, is condensed from the columns of the *Utica Weekly Herald*, and we regret that our space will not permit us to give the report in full.

The proceedings commenced by the delivery of the opening address of the President, Hon. Geo. Williams, of Rome, Oneida County. He referred to the origin and growth of the associated system of dairying in North America, and spoke encouragingly of the prospects of the enterprise. He dwelt on the importance of improving the quality of cheese, of obtaining correct and regular information of the state of the market at home and abroad, and directed attention to the necessity of keeping up other branches of the dairying business as well as cheese-making, in order to preserve a just balance between supply and demand.

The President's address was followed by the nomination of various committees, a business which occupied the morning session. In the afternoon the convention again met, and after some further announcements in reference to committees, the Secretary, Mr. Weeks, read the following list of questions to be discussed:

Purity of flavor in cheese—how secured—how lost?

Pressing cheese two or more days—what effect has this upon the texture and quality of cheese?

Curd-mills—is their use beneficial to the cheese, and is their introduction into general use advisable?

Salt—are there impurities or ingredients in the Onondago salt that render its use injurious to the quality and flavor of cheese and butter?

Butter-making from whey—can it be profitably done at cheese factories?

Dairying in America—has it already been overdone? If not, is it likely to lead to a production exceeding the demand?

Is it not desirable that the Association take measures to inaugurate some practical and efficient plan by which members may be put in possession of all necessary information from all dairy districts, respecting the quantity of cheese made, with sales and quality of the product, &c., at frequent intervals during the season of cheese-making?

The first of the above topics was then introduced in an able paper by Mr. Weeks, which is so excellent that we give the *Herald's* report in full, as follows:—

THE FLAVOR OF CHEESE—HOW AFFECTED INJURIOUSLY.

In offering a few remarks upon this subject, I wish to be understood as entirely disclaiming all attempts to add anything to the fund of knowledge already existing in regard to it. My object is simply to group together a few facts, known to us all, but which we are yet so very prone to forget or to ignore, leaving to other and to able men the task of going more deeply into the subject of flavor in cheese, and of explaining to us those causes that to most of us are hidden, or at least only dimly discerned. That there are causes affecting the flavor of cheese which we do not yet understand, I strongly suspect. That the weather, heat and cold, wetness and dryness, have an influence, I fully believe. But *how*, or *why*, or in all cases *what*, I am unable to tell.

Leaving all these uncertainties out of the question there are a sufficiently large list of causes for badness of flavor in cheese to demand our diligent attention, and speedy remedies. I am aware that it is customary on the part of some of our factory men to persuade themselves, and try to convince others, that the complaint by buyers of "bad flavor," "out of flavor," &c., is all a fallacy, a story got up by the buyer, in order to secure the article under value. With such a feeling I have no sympathy. The first cause of badness of flavor which I shall mention is

1. **Unclean Milk.**—No argument is needed to convince any person present of the fact that from dirty milk good cheese cannot be made. But what are we doing to make an improvement in this direction? Here and there an individual cheese-maker may have lifted up his voice for reform, but, generally speaking, we are doing nothing. Indeed, we are doing worse than nothing,—for with every season that we neglect to inaugurate an improvement, the thing grows

worse, and the reform needed is something more thorough, more radical than the occasional examination of cans and faucets, or the returning of a mess of milk now and then. I think I do not exaggerate when I say that, of the farmers who send milk to our cheese factories, at least forty per cent. fully believe that anything that is milk (and some things that are not), is good enough to send to the factory. Believing so or not, they act so, as the contents of our strainers attest. I have oftentimes fancied that a naturalist could scarcely find a more favourable opportunity to secure a rare and curious collection of beetles, and spiders, and flies and other insects, than by bespeaking the creatures that we fish out of our strainers!—and then the sticks and straws, the leaves, the clay, the dust—all of which are nothing when compared with the nameless horrors that belong only to the barn yard; and all these after the milk has been strained at home. Am I coloring? Or am I not rather calling to your mind experiences scores and hundreds of times repeated? And then the filthy hands of careless milkers, and the unspeakably nasty habits of some of them in milking we do not see, but the results of such things we do see in foul smelling whey, in injured curd, in bad flavored cheese. I know of dairies—and they are considered by no means as unusually objectionable—but rather the contrary, where the family does not pretend to draw milk from the factory can for household use. They do not consider it, they know that it is not, fit to use. It will be difficult thoroughly to remedy this evil, but it is high time that we as an association, and as individuals, set our faces as flint against this carelessness on the part of those who furnish milk to us. We need not grope our way in the dark, feeling after hidden and unknown causes of bad flavor, when we have one so prolific and so apparent before our very eyes. And we may rest assured that we can never secure clean flavored cheese until this wrong is righted.

2. **Diseased Milk.**—In many cases cheese-makers are sorely puzzled and troubled with a curd acting strangely and unaccountably, and which, despite their best efforts, only results in an almost worthless cheese. The difficulty is caused by unhealthy milk, which some patron has sent in, either accidentally or intentionally. It is not always easy to remedy this evil.

3. Cows sometimes eat objectionable weeds, and a bad flavor is imparted to the milk, and, as a consequence, to the cheese. Especially during severe drought, when pasturing affords insufficient sustenance, and they apt to resort to leaves and shrubs that ordinarily they leave untouched.

4. Cows in being driven from the pasture are too often chased by dogs, or are otherwise overdriven, and the milk is thereby rendered feverish, heated and unnatural. And in the same connection it is pertinent to remark that the practice of scolding and knocking the cows about by incompetent and brutal millers, is not only an act of cruelty towards these kind and docile animals, and very bad policy, pecuniarily, to the dairymen, but it also adds its mite towards the injury of the milk.

5. Failure to remove natural heat from the milk. — On this point there is some diversity of opinion, but I confess that I every year become more strongly convinced that cheese made from milk from which the animal warmth has not been removed will invariably be out of flavor. Where cheese is made once daily the evening's milk is sufficiently cooled. But the morning's milk is not. Take an instance of this kind. Here is a dairy of thirty cows situated two miles from the factory. By six or half-past six o'clock, at the latest, of a July morning, the cows are milked and sent into the pasture. The milk is strained into the can or cans standing upon their usual block, and the cover carefully put over it. They keep out some dust and leaves, and also keep in the animal heat and any bad odors arising from foul milking, a portion of which might escape if the air had free access to the milk. The morning is hot and sultry, and the sun has long since hinted that the day will be fiery. Meantime the milk-team, which began to gather its load a mile or two back, comes tardily along, and, by eight o'clock, after standing in the hot sunshine nearly two hours, our cans set out on its pilgrimage to the factory. Frequent halts are made to put other cans upon the wagon, so that nine o'clock comes before this milk can be poured into the vats. Place your hand upon the cans at such a time, and you will find them uncomfortably warm—even hot. Now here we have a large body of milk, the natural temperature of which is 90°, which has been closely confined in the can since the milking was completed, and which has been three hours exposed to the rays of a burning sun. Now what do we do with this milk? Do we carefully strain it and reduce its temperature to 60°, or thereabouts? Not at all. At best we run it into a vat of night's milk which may stand at 55°. Filling this vat from our load of heated milk, the

mass will be found to stand at 72° to 75° temperature. This is too warm, but good cheese may result from it. But our heated milk rarely can be put directly into cool milk. It is a hurrying season of the year—the vats are almost overflowed with milk—the weather is warm, and things must be driven or we shall have sour cheese. Therefore the heat is applied to a vat which contains as yet nothing but night's milk, but is about to be filled. As milk is added, the temperature of the morning's milk, aided by the heat now being applied, is constantly increasing the warmth of the entire mass, so that when our load of heated milk is ready to be poured in, the milk already in the vat stands at 70° to 75°. The natural heat of our load will raise the temperature of the filled vat to 80° or 81°, and, behold, the time to apply the coloring and the rennet has fully come, and no delay occurs in any part of the process, for presently our curd has "come," it is cooked and is ready for the press.

Now, fellow cheese-makers, what kind of cheese will this develop into after standing upon our ranges through one or two hot summer months? And do not such cases, in greater or less degree occur daily in nearly all our factories? If, then, we are agreed that the effects of making cheese from heated milk are pernicious, let us set about discovering and applying the remedies. I have none to suggest that are at all sufficient. One has been mentioned to me by Mr. Greene, of Rome, which, if feasible, would help us greatly. Let each farmer provide himself with a shallow tank of tin, (large or small as the size of the dairy requires). This is to be floated upon water, with which our dairy farms are usually supplied. Into this tank the milk would be strained, and a dipper used to assist the water in removing the animal heat; and here the milk might be kept until the team is ready to start for the factory. Then, too, some temporary awning or protection from the sun's rays, while the cans of milk are on the road, might easily be resorted to on warm mornings. It is also well to adopt a rule at the factory to continue the current of cold water around the vat of milk up to the time that it is filled, and never to apply the heat until all the milk is in the vat that is to be put in. My own views on this matter received strong confirmation during a visit to some of the factories in Canada in October. There, the fact that good water is an essential point to insure a successful cheese factory, has been largely overlooked. Consequently cheese is made twice daily. Of course, neither the evening's nor the morning's milk is properly cooled, and, as a result, their cheese, generally speaking, was much out of flavor. I know of similar experiences on this side of the line.

6. **Impure Annatto.**—In considering the causes which induce bad flavor in cheese, we sometimes are apt to place little thought upon the influence which impure coloring has upon it. The list of articles used in the adulteration of annatto is surely sufficiently formidable to account for the badness of many a cheese that, except in flavor, may be unexceptionable. And such is now the large demand for annatto, and so little of the strictly pure and good is brought to our ports, that very many of our factories are compelled to use second and third qualities, which, I suppose, are never pure.

7. **Bad Rennets.**—Here again no argument is needed to convince you of the fact that immense mischief is yearly done in the use of poor and tainted rennets by our cheese-makers. In their very best state, rennets are not suggestive of attar of roses for sweetness, nor of white lilies for purity. A substitute for rennet, that shall be cleanly and of uniform strength, is what we most need in cheese-making.

It is appalling and sickening to think of the numbers and the fearful condition of immense quantities of rennets that are sent out by our city butchers and used in our cheese factories.

The wonder is that we make any cheese that is good in flavor. Again, we find many of our factories still unprovided with rennet jars; they persist in using wooden vessels, and in these, after long service and in warm weather, even good rennets will taint, especially when prepared in water.

8. Curds insufficiently cooked, in our warm climate, will almost invariably lose their sweet flavor.

9. Curds too lightly salted are not only sure to be objectionable, as regards porosity, but are equally sure to be out of flavor.

10. Salting curds while yet too warm and too damp, and

11. Putting curds into the hoops and to press before they are properly cooled.

These two are among the most prolific causes of bad flavor in American factory cheese. I will not, however, detain you by enlarging upon this point. Happily these two sources of trouble are of all those mentioned, the most easily remedied.

12. Exposure of cheese to too high a temperature while curing. Our dry houses are not rightly constructed. In summer they are far too warm, in spring and fall they are as much too cool. A cheese that is rightly made, is pure in flavor, and indeed quite perfect in all respects, will receive injury if exposed to the summer temperature of the upper rooms of our curing houses. What then will result to cheese made from unclean milk, from diseased milk, from milk from which the natural heat has never been removed, from milk poisoned by adulterated annatto, or by tainted rennets, from curds not fully cooked, from curds saturated with whey when put into the hoop, from curds insufficiently cooled before salting and pressing? There are other things which induce bad flavor—foul cans and milking utensils, painted pails, unclean surroundings to the factory. These have their influence, and a most baleful influence it is too.

If this Convention should result in no other benefit to us than, to throw so much light upon this subject, that bad flavor in our cheese can be more generally prevented, and good flavor more certainly secured, I shall feel that our meeting has been a success. The article of milk with which we have to do is unlike almost anything else of which we have knowledge, from the fact that it is not only of an entirely perishable nature, but it is also susceptible of injury and taint from many very slight causes. Consequently, "eternal vigilance" is the price that must be paid for any great degree of success in its treatment.

Considerable discussion followed the reading of the above paper, and some additional matters of importance were noticed, such as the quality of the food on which the cows were fed, the necessity of scalding the milk-pans, of removing all putrid matters, and especially carrion, from the neighborhood of the cows, the effect of wet and dry seasons, and other topics.

The third question, in reference to curd-mills, passing over the second, was next taken up, and the benefits obtained by the use of the mill were, with only one exception, allowed, by all the speakers.

The question of the kind of salt to be used was next discussed. Lieut.-Governor Alford spoke in favor of Onondaga salt. Professor Brewer agreed in the main with Governor Alford, and remarked that all salt brine when taken from the wells was impure, and the only safe-guard was to buy of competent companies who pledged themselves to sell good salt or take the consequences. Salt that gets easily damp from the atmosphere should not be used—in three cases out of four such salt is bad. Prof. B. then gave the following formula for testing salt for its impurities:

Put some salt in a common funnel, throw on it hot water, which will dissolve some salt and the most of the chloride of calcium and magnesium; let this drain off, then add to the solution a little ammonia, then oxalate of ammonia or carbonate of soda; the impurity will be seen forming a white milkiness in the solution.

After an adjournment the Convention met again in the evening, and was addressed by Professor Brewer, of Yale College, on the subject of the best breed of cattle for dairying purposes. We must defer the report of the substance of his very interesting and practical remarks, as given by the *Utica Herald*, to another issue.

The Convention met again on Thursday, January the 9th, when further discussion was held on the purity of flavor in cheese. Mr. Holdridge, of Oswego, provoked considerable question and criticism by the statement that he could make perfect cheese from tainted milk. Mr. Farrington, of Canada, among several other speakers, combated the notion, and spoke also of the superior quality of farm rennets over those obtained from city butchers. The question of butter-making from whey was then taken up, and several gentlemen spoke in favor of the practice.

Mr. Willard was then called upon to deliver his address, the substance of which was as follows:

The speaker began by noticing the fact that while all other articles of food are at a high price, cheese has dropped down to a figure lower than in ordinary times. The cry of over-production had gone abroad and was circulated by those who had no means of knowing, other than the dealers' rumors. This cry had brought cheese in the market from producers who were afraid they should have a dead loss of stock on their hands. This movement had made purchasers ready to buy only at the lowest prices; which, however, the producers were willing to take, in order to get rid of their cheese. The facts in the case are that the production of this country, this year, has been only ordinary and healthful to the market, and had dairymen stood firm for the higher prices, they would have got them. With regard to the influence England has on our market, the speaker

said that country takes from us 40,000,000 pounds a year, and makes our market prices on 200,000,000. This is done through the meagre means in operation by American dairymen for obtaining a correct and reliable knowledge of the actual state of the market. Mr. Willard gave full and interesting statistics of the cheese market for the last eight or ten years. From these figures it was shown that the fatal error of the American cheese-maker is the lack of enterprise in obtaining a knowledge of the facts with regard to the condition of the market. The dealer is a keen-sighted, well-informed man, while the producer is ignorant of the very vital point in his business. He would not charge upon dealers a studied design to deceive the producer, but he (the dealer) will invariably take advantage of his superior knowledge of market affairs, to buy as cheap as possible, and scare the producer into disposing of his commodity at the lowest prices made in the wide margin always made by the sharp dealer. The middle-men who buy and ship are generally honorable men. The cause of low prices is not owing to them. It lies at the doors of the dairymen of New York State. When prices were quoted down, the dairymen let go their produce. A cent or two more was announced off, and cheese rushed forward. Another cent was telegraphed off, and the cheese-makers were wild in vying with each other in rushing their cheese to market. Thus the maker puts his own hands in his own pockets and throws away his own money. Mr. Willard closed by urging the necessity of providing some means for obtaining reliable information from the European markets. He gave preference to the plan of sending an agent to England and keeping him there, disconnected with the trade, so that American dealers and producers may be fully and trustfully advised on so important a part of the business as the disposing of the article produced. Although full of statistics, Mr. Willard's address was listened to with the strictest attention. It was practical, suggestive, and eminently a profitable address. The measures urged by him, if carried out, cannot fail to redound to the great profit of the American cheese-makers.

After the address the question of making butter from whey was again resumed, and some very interesting statements were made in reference to the successful combination of cheese and butter-making by Mr. Kenny, of Cortland. The same subject occupied a portion of the afternoon session, which was, however, chiefly devoted to the discussion of the severe question, in regard to the best means of obtaining and circulating correct statistical information respecting the quantity of cheese made and in market—the amount of sales, &c., &c. On this topic, Mr. Walker, of Oswego, read an able paper, too long for insertion here.

Mr. Chadwick, of Canada, addressed the convention on this subject. During his remarks he took occasion to give expression to the kindly feelings that exist between Canada dairymen and those of the States. Mr. Lewis, of Herkimer, warmly reciprocated the sentiments of the gentleman from Canada. Mr. Farrington followed, making some practical suggestions. Many other speakers addressed the convention on this important matter; and the committee specially appointed to consider the question submitted a report, which was discussed. A resolution proposed by Mr. Williams, of Rowen, was ultimately adopted, to the effect that a committee of nine be appointed to take the question into consideration, empowered to make out a plan by which the desired object may be secured, with full power to execute their own plans.

The following gentlemen were appointed on this committee:—George Williams, Oneida; C. H. Wilder, Wisconsin; D. Markham, Jefferson; W. H. Comstock, Oneida; Dr. L. L. Wight, Oneida; Charles E. Chadwick, Ontario; Burton Armstrong, Ohio; W. E. Boies, Massachusetts; G. B. Weeks, Oneida.

Mr. Walker, of Oswego, offered the following resolution, which was adopted:

Resolved—That the members of this Association, from the States, tender their compliments to our Canadian visitors for their attendance here, and for their hearty co-operation in this great national enterprise of American industry.

The convention then adjourned *sine die*.

The average quantity of milk to a pound of cheese, at the factories, is 9.68 pounds—or nearly one gallon.

A HERKIMER COUNTY, N. Y., dairyman estimates that 45 cows require 100 tons of hay to winter them through.

Entomology.

Entomological Society of Canada.

A MEETING of this Society was held on Thursday the 16th of January, in the rooms of the Canadian Institute; the President, Prof. Croft, in the chair.

After the reading of the minutes and various communications, the following gentlemen were elected ordinary members of the Society:—J. Matthew Jones, Esq., Institute of Natural Science, Halifax, Nova Scotia; Wm. Osler, Esq., Trinity College, Toronto.

The donation of two volumes of the Smithsonian Institution's Entomological publications, by J. Petui, Esq., Grimsby, was announced, and the thanks of the meeting ordered to be transmitted to him.

The Secretary read the annual report for 1867, (which we append), and also his report as Treasurer for the past year. From the latter we learn that the receipts amounted to \$160 84, and the expenditure to \$166 70, leaving a balance of \$5 86 due the treasurer. The principal items of expenditure have been the purchase of considerable supplies of sheet cork and Entomological pins, for sale to members at cost prices, and the publication of the list of Canadian Coleoptera.

The draft of the Constitution having been approved of by both the Quebec and London branches, as well as by the parent Society, was ordered to be published for the information of members, together with the By-laws of the Toronto Branch, brought forward and adopted at the present meeting, and a complete list of all the members of the whole Society.

The next meeting was appointed to be held in February, at the Canadian Institute, the usual notice to be issued by the Secretary. After some further conversation the meeting adjourned.

We are requested to announce that at the February meeting, a small collection of Nova Scotian Lepidoptera (chiefly nocturnal) will be exhibited, and a comparison made with Canadian specimens of the same genera.

REPORT FOR 1867.

The council of the Entomological Society of Canada have much pleasure in presenting their fifth annual report.

During the year 1867 considerable changes have been made in the list of members, chiefly occasioned, however, by removals. The total number has largely increased, being now 106; this increase is chiefly in the London Branch, which now numbers sixty-three.

Five regular meetings, and one field meeting, have been held during the past year by the parent Society. The chief business transacted has been the preparation and adoption of a constitution, which will shortly be published for the information of members, and the publication of a very valuable list of Canadian Coleoptera, prepared by Mr. Saunders, of the London Branch. The Quebec Branch, with its usual activity, has held regular meetings, and continues in a flourishing condition.

The council, in concluding this brief report, beg to express the hope that the members of the Society will unite in infusing more life and vigor into its proceedings during the ensuing year, and that efforts may be made to increase the number of members, and render the meetings more attractive.

All which is respectfully submitted.

CHARLES J. S. BETHUNE,
Secretary

TORONTO, Jan. 16, 1868.

HOW TO DESTROY ANTS.—Having seen some inquiries how to get rid of ants, I will mention that, a few years since, I saw it stated in your paper that arsenic would kill them. Last year they were very troublesome in our pantry, and I put arsenic in sweetened water and set it in their way, and two or three days after there was not one to be seen. They have also troubled one of my bee-hives a few years past, and this year I put a dish of it on the ground, near the hive, and a few days after examined, and found none, and have seen none there since.—Asa Howes, Oak Creek, Wisconsin, in *Country Gentleman*.



Resolutions in Favour of Township Societies.

We have received the following communications on a subject which is naturally exciting much attention. We have no doubt the questions referred to will be fully discussed in connexion with the new Agricultural bill, now before the Legislative Assembly, and that the claims of Township Societies will there find efficient advocates.

EUPHEMIA AND DAWN AGRICULTURAL SOCIETY.—At the Annual Meeting of this Society, held on the 11th January, the following resolutions were adopted—

Resolved—That this meeting is of the opinion that the Act requiring all the moneys received by Township Societies for members' subscriptions, to be sent to the Treasurers of County Societies, imposes needless trouble, and that instead, a certified copy or affidavit from the Treasurer or other officer of the Society would be better, and that the Secretary communicate with the Hon. A. McKellar, M.P. for Bothwell, and request him to use his influence to get the Act respecting Agricultural Societies amended.

Resolved—That this meeting has learned with the deepest regret that the late Agricultural Convention held in Toronto, manifested a strong desire to do away with Township Societies, and recommend a reduction of the Government Grant to the said Societies.

Resolved—That this meeting is of opinion the Government appropriation, being public funds, should be so laid out as to allow settlers who are not contiguous to County Societies, to avail themselves of a portion thereof, of which they would be deprived by doing away with Township Societies; and we are of opinion, that instead of curtailing their privileges, it should be quite the reverse, as we believe that Township Societies are of more benefit to the agricultural community than County Societies, and if it is necessary that either should be abolished, it should be the County Societies.

Yours, &c.,
ISAAC UNSWORTH, Sec'y.

BRIGHTON AGRICULTURAL SOCIETY.—The annexed resolution was passed by the annual meeting of the Brighton Agricultural Society:—

That we record our disapprobation of the proceedings of the Agricultural Convention, held in Toronto in November last, with reference to Township Agricultural Societies. That we look upon that convention, composed almost exclusively of delegates from County Societies, as not a just and fair exponent of the views of a large majority of the Agriculturists of this Province. We believe if Township Societies had been fairly represented at that convention, that instead of an attempt to abolish Township Societies, or "starve them out" after the plan of Mr. Rykert, a resolution to abolish County, and to divide the Government grant amongst the Township Societies, would have been carried by a large majority. From a long and intimate knowledge of the workings of both Societies, we have no hesitation in saying that we know the design of the Government in promoting the interests of agriculture is far more effectually accomplished by Township than County Societies. In proof of this we need only mention the fact that the Township of Brighton, one of the smallest in the County, had last year 131 members, (nearly double that of the County), and gave to each member a copy of the CANADA FARMER, and had a very good Fall Exhibition besides, the only deficiency being a want of funds to make the prizes sufficiently large to be worth competing for.

The advantages of Township over County Societies are so obvious that we feel satisfied that the fact need only to be brought fairly before the Legislature by an united effort of the Township Societies, by petition and otherwise, to secure its approval. And we recommend a simultaneous effort of all Township Societies in Ontario at the present session of the Legislature, to get an Act passed to abolish County Societies, and to divide all the Government grant among the Township Societies.

The subjoined communication is from Mr. R. A. Roe, Clarence, and bears date Jan. 10th:

As a member of a Township Agricultural Society, I wish to make a few remarks on the convention held at Toronto, for the purpose of framing a new agricul-

tural law. I think the convention dealt very unfairly with Township Societies, for, if these are destroyed, a very large portion of the agricultural community will be deprived from any benefit whatever, as the County Societies will be of no advantage to them. For instance, let a farmer go to ever so much expense and pains to obtain thoroughbred stock, though he may be greatly desirous of exhibiting them, it will be impossible for him to drive his animals say forty or fifty miles to the place of exhibition, over bad roads and often in bad weather. And if he should attempt to do so his animals will be in a poor condition when he gets them there. It may do very well near large towns and cities, or where the communication by railroad and water is good to take stock a long distance to exhibit, but to drive them such a distance over our country roads is a different affair.

Where townships are so situated that they can conveniently unite in one Society, it might do very well if the Act were so arranged as to permit them to do so; but to have only County Societies, regardless of position, will exclude many an enterprising community that would maintain Societies equal in efficiency, interest and enterprise to numbers of our County Societies.

I trust that this matter will be fully discussed by those most capable of taking hold of it, and that nothing so detrimental to our interests as the doing away with Township Societies will be allowed to pass.

Clarence, 10th Jan., 1868.

ROBERT A. ROE.

Farming in Canada.

To the Editor of the CANADA FARMER.

SIR,—I want to ask your opinion, and perhaps that of some of your correspondents, as to what are the prospects in this country (your Province particularly) for Farmers with a capital of from five to seven thousand dollars. It has often appeared to me that while every inducement is held out by our Emigration Officers and others for labourers and small farmers with little or no means, very little is said, of a sufficiently inviting character, to induce the more substantial class of farmers to come here.

This may of course be because the country is not so well adapted for them; and if so, by all means let them not be invited.

It is a fact that, at the present moment, in some parts of England, if an estate suitable for this class of men is offered to be let, there are often as many takers as there are fields, and sometimes as there are acres, showing that the demand exceeds the supply to such an extent as to cause more than the value to be given for the farms.

The question is, can a sufficient *bona fide* inducement be held out to these men to come here? I ask it partly on public grounds, but principally because I know some parties who would come if a sufficiently candid answer can be given in the affirmative.

I don't want an answer from land speculators who have lands to dispose of at twice their value, but from such men as your travelling correspondent, who have opportunities of giving an unbiassed opinion on a great part of the province, or from intelligent farmers who can give opinions on their own particular neighbourhoods. P.S. I observe you, as well as others recommend that a farmer, before he commences to farm for himself, should hire himself to another for a season as a farm servant. Now this is an ordeal that many farmers of the class I have named would not care about going through. Surely the necessary information can be picked up in some more agreeable manner than this. If so, how?

A SUBSCRIBER.

Montreal, Jan. 17, 1868.

NOTE BY ED. C. F.—The subject propounded above is one of too grave importance to pass over lightly, or answer in a brief note; but we would just observe, in reference to this matter, that similar questions having come up before, we have invited farmers of practical skill and judgment to publish through our columns some of the results of their Canadian experience, and hope ere long to be able to give reliable information, such as is furnished by their accounts, to guide others in forming their

opinions. In the meantime we would remind our correspondent, and others enquiring in the same direction, that the pursuits of agriculture underlie the whole business of the Province, and that upon its success depends the general prosperity of the people. The progress of the country, therefore, is proof positive that agriculture has been a profitable undertaking. If the man without capital can make it pay, what is to hinder the man with capital, who has a practical knowledge of farming, from making it pay still better? And turning from these general considerations, do we not all know scores of individual instances of success to justify the recommendation of farming as a pursuit in this country? Men fail in every business, and farming is no exception to the rule; but the bankrupts among farmers bear a very small proportion to the bankrupts in trade.

Our correspondent, towards the close of his communication, refers to advice given in these columns, that immigrants should hire out for a season to gain experience, before purchasing land for themselves, and asks if there is no more agreeable method of gaining the necessary information. The above advice was intended for persons of very limited capital, counted by a few hundreds, and not thousands of dollars, and was meant to deter the immigrant, of whatever class, from a too hasty purchase of land. In cases of larger capital, the stranger might find it to his advantage to rent a farm for a year or two before he invested his funds in buying land. Not a few have come to this country with means at their command which ought to have insured them a comfortable competence, have purchased land at exorbitant prices within a few weeks of their arrival, have lavishly expended their means in costly improvements, chiefly perhaps in the way of buildings, and speedily finding their exchequer exhausted, and disappointed in the golden harvests they had too sanguinely anticipated, have after a few years abandoned their new homes in disgust, and voted farming in Canada an unprofitable business. It is to prevent this kind of disappointment and loss that we have repeatedly cautioned the new-comer to beware of undue haste in parting with his money for land. Let it be remembered, at the same time, that it is most unfair to charge against the country the failures that are clearly owing to the inexperience and imprudence of the individual. All over the land are happy and prosperous homes that testify to the bounty of the soil and salubrity of the climate. Nor, taking all things into consideration, will it be easy to find a region of the globe where the intelligent farmer, with a little extra means at his command, who understands his business, can turn his capital and his experience to better account than in the more favored portions of the Dominion of Canada.

Soapsuds Injurious to Fruit Trees.

To the Editor of THE CANADA FARMER:

SIR,—In the 1st of April Number, 1867, of the CANADA FARMER, I noticed an article under the heading, "Soapsuds as Manure;" and as it is easier to learn from others' losses than our own, I beg leave to make known to the country at large, through your columns, my own experience on the subject. I confess I was somewhat struck with the remarks of your correspondent on the lecture of the learned Dr. Dresser, as well as the remarks of yourself, concerning the subject of washing fruit trees with soapsuds. Far from the practice being an innocent one, it has done me immense harm. Previous to reading the article, I had washed my trees with soapsuds—applying a pailful of the strongest I could obtain from the wash to two or three trees, using a broom or mop in the operation, and being careful to take the trees in rotation, so as not to miss any. Shortly afterwards I noticed something wrong with the trees, but could not account for the cause, as this had also become a common practice in our neighborhood; but or

reading the article I examined my trees, and found the roots turned black. Nevertheless, they blossomed finely and bore fruit, but some did not get ripe, and withered on the trees. The leaves also turned black, and are remaining on the trees yet. This was on my pear-trees, I served some of my apple-trees in the same manner, and with the same result. As this created quite an excitement among the orchard men, I inquired of my neighbors if they had lost any of their trees, supposing that the extreme wetness of the season had caused my trees to die, as my farm is a clay soil, level, and apt to hold water for a long time on account of the difficulty of drainage. One person told me that his wife had washed his dwarf-pears the same way, and experienced the same result, he, as well as myself, being totally ignorant of the cause. Another, living close to a soap factory, procured some soap grease, and rubbed his young trees, to prevent the sheep from gnawing them. In a short time they began to decline, and though he washed it off, it was too late—the trees died. I also visited one of my neighbors who had some apple-trees in his door-yard, which I had frequently observed for their beauty and healthy appearance, and saw, to my regret, his trees were dying; and on inquiring, I ascertained from the lady herself that she had thrown soap-suds on the roots.

I feel it my duty to state these remarks to your readers, at the same time concurring in the remarks of the learned Doctor, as stated by your correspondent. I am quite satisfied that soap-suds are a deadly poison to fruit trees, and would ask all those interested to beware how they throw suds on their trees, as there are plenty of manures that would prove many times more beneficial.

I trust that some of your many readers may take warning, and profit by the loss I have sustained.

PETER SHISLER.

BERTIE, 13th January, 1868.

NOTE BY ED. C. F.—Our readers, we are sure, will feel obliged to Mr. Shisler for the candid statement of his unfortunate experience. In reference to our own remarks in the April Number of this journal, we would remind our correspondent that they relate principally to the composition of soap-suds, and the inference drawn therefrom as to their comparatively harmless quality, the quantity of caustic ingredient they contain being but small. We may add, to show that we were careful to take all pains to give a correct reply, that we submitted the question, before giving our own view, to the highest chemical authority in this city, and the opinion we received was in accordance with the published statement. Further, it is well known that many experienced fruit growers recommend and use weak lye and soft soap as a wash for their trees. Are not these substances more caustic than ordinary soap-suds? And may not the disastrous results recorded by our correspondent be due to the unmeasured use of the application? In his own case he tells us he used freely the strongest soap-suds he could procure—one neighbor used grease from the factory—and another had probably daily soused her trees with the suds from the house. Is there any artificial or other manure that may not be applied in too large quantity or insufficiently diluted? Be the case as it may, Mr. Shisler has our hearty thanks for his communication, which will, no doubt, prove a useful warning to others.

The Divining Rod.

To the Editor of THE CANADA FARMER:

SIR—The communication contained in a recent number of the CANADA FARMER respecting the Divining Rod induced me to refer to the letters on that subject in Volume I, p. 266 of your periodical, and with your permission, I beg to submit the following remarks. I shall confine myself to the second letter, the one written by the sceptical gentleman, who, after the manner of Dr. Colenso, refuses to believe anything that is beyond the reach of his understanding.

At the commencement, within the first decade, of the present century, the celebrated mathematician, Dr. C. Hutton, published a translation of Ozanam and Montucla's "Mathematical Recreations," in the course of which work he took occasion to express his disbelief in the powers of the divining-rod, and to turn the whole matter into ridicule. In a second edition, however, having meantime received ocular demonstration, at the hands of Lady Noel, who had seen the experiment successfully made by a peasant in Provence, of the effective operation of the rod, he was candid enough to print a recantation.

In Cornwall at the present time, and on the Mendip Hills, in Somersetshire, the divining rod is used by miners and others, and they can use it blindfold, for the purpose of discovering both water and ore.

It is said that forks of any kind of green wood (those made of dead wood are ineffectual) will serve the purpose, although hazel is most frequently made use of. Some go so far as to affirm that metallic rods will produce the same result.

It is admitted that in but few persons—some say only one in two thousand—is the power of using the divining-rod inherent.

I was myself assured, some years ago, by a Kentish clergyman, in whose veracity, good sense and sound judgment, I placed implicit confidence, that he had seen the divining-rod used with success, and that although not a medium himself, (not possessing, perhaps, a sufficient amount of electricity) he entertained no doubt that the experiment was bona fide, and without the slightest taint of trickery.

It may not be uninteresting to your readers to be informed that the founder of the abominable Mormon sect, Joe Smith, was, anterior to his canonization, called the "Money-digger," and that he swindled several people by his pretended skill in the use of the *virgula divina*.

V. C.

LAKEFIELD, Ontario, Jan. 10, 1868.

THE SNOW-BIRD.—J. M. Poole, of St. Marys, will find his request attended to in the Natural History Department of the present issue.

CORRESPONDENTS' SIGNATURES.—Our correspondents, especially if they make any statements of a personal nature, should send us their true names and address, as well as the signature they may affix to their letters for publication. A communication from Sidney, County of Hastings, is inadmissible, on account of the omission of any signature beyond that of "A Subscriber."

MARKING SHEEP.—We refer our correspondent and other enquirers on this subject to No. 11, Vol. I., of THE CANADA FARMER, where they will find several methods described. We also draw their attention to the advertisement of Mr. Archibald Young, Sarnia, in the present issue. The mark he advertises (Dana's) is figured in the article above referred to, and is, we believe, highly recommended by many who have used it.

The Canada Farmer.

TORONTO, CANADA, FEBRUARY 1, 1868.

The Agricultural Bill.

This important measure is now before Parliament and the country, and we proceed to give a brief synopsis of it, and to make a few comments on it. Sections 1 to 7 establish the Bureau of Agriculture, and define its duties, among which we are glad to see the collection of facts and statistics, which are to be embodied in a yearly report to Parliament; also, the establishment of a museum illustrative of agriculture, horticulture, arts and manufactures, together with a library of books in the same departments of industry. Sections 8 to 17 refer to the Agricultural Association, and prescribe its membership, officers and council. This portion of the Act is in strict harmony with the resolutions adopted by the Agricultural Convention recently held in this city. It divides Ontario into twelve Electoral Districts, each of which is to elect a member of the Council of the Association. In January, 1869, the whole Board or Council will retire from office, and will be replaced by members elected by the twelve agricultural districts aforesaid. Four members will retire annually, so that after the first election, the appointments will be for a term of three years. Sections 18 to 23 relate to the meetings and functions of the Council and Directors of the Association. The Board of Agriculture is virtually merged into the Council of the Agricultural Association, and exercises all the functions of the two previous organizations, except that the County Societies will henceforth make their returns directly to and receive their Legislative grants

directly from the Bureau of Agriculture, instead of through the Board of Agriculture as heretofore. The Council is, as formerly, empowered to hold a Fair or Exhibition annually; to take measures, with the concurrence of the Commissioner of Agriculture, to establish a model, illustrative, or experimental farm; to obtain from other countries choice breeding animals, new varieties of grain and other seeds, improved implements or machinery, and in general, to adopt all means in their power to promote agricultural improvement in the Province. Sections 24 and 25 provide for giving aid to Mechanics' Institutes in order to promote class instruction. Any Institute having evening classes in operation, will receive a grant equal to the sum locally contributed, up to \$200, the whole to be devoted to this particular object. The Board of Arts and Manufactures is discontinued, and its functions are divided between the Agricultural Association and the Bureau of Agriculture. Sections 26 to 31 relate to Horticultural Societies, and Sections 32 and 33 provide for the existence of the Ontario Fruit Growers' Association. Sections 34 to 41 establish County or Electoral Division Societies, define their functions, and lay down their duties. Sections 42 to 44 do the same in regard to Township Societies. Sections 45 to 54 contain various general provisions relative to Agricultural Societies, among them the following, in regard to grants and returns. County Societies are to receive grants not to exceed \$800 each; the City of Toronto consisting as it does of two Electoral Divisions will receive \$600, and seven other city and town Electoral Divisions, \$400 each. Township Societies will not be required to pay over their contributions to the Treasurers of County Societies as heretofore, but to make their returns to County Treasurers, accompanied by affidavits, the same as is now done by the County Treasurer to the Board of Agriculture. Township Societies will receive one half only of the County grant, instead of three-fifths, as heretofore. Township Societies may organize when fifty members have subscribed, at least, one dollar each. Sections 55 to 58 permit Municipal aid to Agricultural Societies; require municipalities to supply policemen and constables to protect Exhibition grounds; impose fine or imprisonment for wilful injury to Exhibition property, and empower Agricultural Societies to suppress gambling and regulate or prevent huckstering and trafficking within 300 yards of their Exhibition grounds.

From the foregoing synopsis it will be seen, that the important measure now before the country, while it harmonizes in its leading features with the Bill reported by the Committee of the Agricultural Convention, held in this city not long since, differs from it in several respects, especially in the discontinuance of the Board of Agriculture, and the Board of Arts and Manufactures. This, however, is an obvious improvement, simplifying matters very much, and assigning work where it legitimately belongs. The Council of the Agricultural Association is quite competent to do all that has heretofore been done, not without some confusion and mixing up of functions, by the two bodies known respectively as the Board of Agriculture and the Executive of the Provincial Association; while it is manifestly proper that annual returns from Societies be made to the Department of Agriculture direct and grants paid from the Department without any intervening medium. The proposed divergencies from the old Act recommended by the Agricultural Convention, have—some of them at least—encountered strong opposition when proposed on former occasions, and may possibly be resisted now. Without committing ourselves to an endorsement of all the details, we do not hesitate to express the opinion that the present Act is a great improvement on the former one. It will, no doubt, be thoroughly sifted and scrutinized, not only by agriculturists in the House, of whom there is a pretty large representation, but by intelligent farmers all over the Province. The Bill has been distributed at

an opportune time for discussing its merits, namely, just prior to the annual meetings of the County Societies, and we would urge the sending in of opinions and suggestions that may have been made at such meetings without delay to the Commissioner of Agriculture who will, we feel sure, give them respectful attention. Either societies or individuals would do well also to communicate with their representatives in Parliament in regard to any points of importance on which they have opinions to give or suggestions to make. We expect that the Bill will give rise to intelligent and prolonged discussion in the House, that its passage will not be hurried, that it will be well canvassed in Committee of the Whole, and that it will pass into law in as perfect a state as the combined wisdom of the country can secure for it.

We are glad to learn that the Hon. Mr. Carling, Commissioner of Agriculture, has appointed our valued collaborator, Professor Buckland, Assistant Commissioner, and Mr. Edwards, the present Secretary of the Board of Arts and Manufactures, to be Secretary of the Bureau of Agriculture. Both appointments are excellent ones, and will, we have every reason to believe, prove highly serviceable to the agricultural and industrial interests of the country.

Premium List of the Illinois State Agricultural Society.

A FRIEND has kindly put into our hands a thick octavo pamphlet of 120 pages, entitled, "The State Fair for 1867." It contains a very full history of Quincy, Ill., the city where the State Fair was held last year, a multitude of advertisements, business cards, &c., also the constitution, rules, regulations and premium list of the State Agricultural Society. The last mentioned part of the volume contains a number of things worthy of being noted and commended to the attention of other Agricultural Societies, our own among the number. For example, among the rules and regulations we find this good one: "Exhibitors of animals must place their name and address, and the name of the particular breed to which each animal belongs, in a conspicuous place in their respective stalls." This rule, were it enforced at all shows, would save reporters for the press, and visitors generally, a world of trouble. To the information called for by the above rule might be added a statement whether the animal is for sale, and if so, at what price. We find also a provision for daily auction sales of stock, and other articles, under the direction of the executive committee, which we think a convenient and wise feature. But it is in the Premium List that we observe the most noticeable departures from the usual exhibition routine, and the most suggestive characteristics of the Illinois method of doing things. Thus, premiums are offered for best and second best essays on the following topics:—"The preparation and management of a stock farm in Illinois, based on the experience of the author;" "same of dairy farm;" "same of grain farm;" "same of fruit farm;" "same on cultivation and preservation of garden seeds, based on the experience of the author;" "on wool-growing in Illinois, including preparation for and marketing of the wool;" "on the cultivation of flax, and manufactures therefrom;" "on manufactures in Illinois, facilities and necessity for their establishment, with their relation to the agriculture and commerce of the State;" "on ploughing as adapted to various crops and soils;" "on the planting and cultivation of forest trees;" "on the planting, cultivation, and after treatment of hedges." The premiums for these essays range from \$5 to \$10, according to the estimate formed by the Executive Board of the intrinsic and relative importance of the several subjects. Premiums are also offered for field crops, after the following style: "For best field of fall wheat, not less than four acres, nor less than thirty-

five bushels per acre, \$50; 2nd premium, \$25. Prizes of like amounts are offered for best and second-best fields of spring wheat and Indian corn. Premiums of less amount are offered for best fields of barley, oats, rye, buckwheat, white beans, potatoes, onions, hemp, flax, tobacco, clover seed, millet, flax seed, castor beans, carrots, beets, turnips, cotton seed, and sugar cane. A premium of \$100 is offered for the best two acres of cotton. The above premiums are advertised to be awarded at the meeting of the Executive Board in the January following the State Fair, and very stringent conditions are laid down, even including sworn attestations as to quantity of land and measurement of crops. For the best improved and cultivated farm of not less than 160 acres, \$100 and gold medal are offered; and a like premium for the best improved and cultivated farm not less than forty and less than 160 acres. A first prize of \$20 is offered for the best market garden, and \$10 for the second best. \$25 are offered for the best nursery, and \$15 for the second best. "To the individual who shall plant or transplant during 1867 or 1868, or both, the largest number of trees into an artificial grove—the number to be counted and certified, after the 1st of October following, by the Clerk of the Court of the county in which the grove is situated, and no trees to be included in said count except those which shall be then alive and uninjured. \$100; second premium, \$75; third premium, \$50; fourth premium, \$25." The Society are evidently determined to supply the lack of trees on the naked prairies of the west, and in this they act wisely. The best apple orchard, the best pear orchard, and the best peach orchard, are each rewarded with a prize of \$15, and the second best with \$10. The best experiment in under-drainage during 1867, not less than forty acres, receives \$50. The farm, market garden, nursery, and artificial grove premiums were entered for in 1867, and prizes will be awarded at the meeting of the Executive Board in January 1869. This affords time for competition, and cannot fail to stimulate improvement.

We regard the foregoing premiums as eminently judicious, and worthy of being copied into the prize lists of other societies. It is well to encourage the breeding of choice animals, and the raising of products of fine quality; but is it not also well to stimulate thought among farmers, to get the results of experience embodied in papers of general and permanent interests, to secure as far as possible thoroughly good farming, and to promote tree-planting, orchard culture, drainage, and such like improvements? Beside the premiums offered by the Illinois Society, why not have such as these:—"For the best and most convenient farm buildings, \$—;" "for the biggest and richest manure-heap made in one season, \$—;" "for the best laid out farm, \$—;" "for the greatest make of maple sugar, \$—;" "for the best poultry-yard, \$—;" &c. Township and County societies might do much good by rousing competition in some of these directions. Root culture has been greatly promoted in various parts of the country by giving premiums for the best yield of turnips, carrots, or mangolds. The same principle admits of much wider application than it has ever yet received. "Emulation is a noble passion," when aroused by proper objects, and directed to worthy ambitions. It is a passion which may be made to contribute far more largely to the improvement of practical agriculture than it has ever yet done. Let more and better use be made of it; let our farmers try to excel in the various branches of their business, and, by every legitimate influence, let it be sought to raise agriculture to that pitch of honorable distinction which is its just place among the occupations of mankind.

HENRY DICK OF THORNTON. Mr. Cochrane, of Compton, Quebec, has purchased this valuable and noted bull, and we expect before long to be able to present our readers with an engraving of him from a drawing by Mr. J. R. Page, the celebrated stock artist.

Literary Notices.

THE ATLANTIC ALMANAC FOR 1868.—We have received from Mr. J. T. Day, Bookseller, Guelph, a specimen copy of this beautiful and interesting publication, to which must, we think, be awarded the palm of highest excellence among the almanacs of the world. When we say it beats Cassell's famous Illustrated Almanac, we give it the highest praise it could possibly have. This publication is edited by Oliver Wendell Holmes and Donald G. Mitchell, alias "Ike Marvel." It is published at the office of the *Atlantic Monthly*, by Messrs. Ticknor & Fields. Each monthly calendar is headed by an appropriate engraving, and there are charming coloured illustrations of Spring, Summer, Autumn, and Winter. A most sprightly article by Dr. Holmes, on "THE SEASONS," occupies no fewer than twelve of the double column pages, but so entertaining and instructive is it, that you feel sorry when it ends. "Ike Marvel" contributes four equally delightful papers, respectively headed "Winter Talk," "Spring Talk," "Summer Talk," and "Autumn Talk." Then there are original papers by Nath. Hawthorne, Mrs. Agassiz, Gail Hamilton, and the author of "A man without a Country;" thirteen pieces of choice poetry; astronomical explanations; and a nice piece of parlour music, "All the Year Round." This pleasing and useful miscellany costs only forty cents. Truly this is an age of cheap literature!

THE BRITISH WORKMAN FOR 1867. THE BAND OF HOPE REVIEW FOR 1867.—We have received from the before mentioned bookseller, samples of these well-known and widely-read periodicals, published by the Messrs. Partridge, of Paternoster Row, London, Eng. The publishers just named have done and are doing a great work of patriotism and philanthropy by the pictorial literature which they have brought down to the capacities and means of the humblest and poorest of the working classes of Britain. As an English journal observes—"The magnificent wood-cuts in the *British Workman* rival in boldness, pictorial effect, striking character, and good taste, the best illustrations of the day, and these interest and please where the most laboured didactic lessons would fall utterly dead. They have called forth not only taste and a love of art in many a cottage, previously quite bare and unlovely, but by their plain and striking lessons they have been a great help to temperance, frugality and even higher virtues than these. The pleasant stories, brief and telling words of advice and counsel the enticing modes of putting truth with which these works abound, give them an easy entrance to hearts and homes, where other teachers have been surlily refused a hearing." The *Band of Hope Review* is mainly devoted to the promotion of the total abstinence cause, especially among the young, and is admirably adapted to this purpose. Some of its narratives are very affecting. One entitled "Keeping Father at Home on Sunday," is a gem worthy of being read in the palaces of royalty, as well as the abodes of poverty. These publications, indeed, are well suited for wide and general circulation.

CATALOGUE OF SMALL FRUITS FOR SPRING OF 1868. We have received thus early, from Mr. J. Knox, of Pittsburg, Pa., his annual catalogue, now grown to an octavo pamphlet of 64 pages. Mr. Knox devotes his entire attention to the culture of the small fruits: grapes, strawberries, blackberries, raspberries, gooseberries, currants, &c. His catalogue is not only an advertisement of the varieties of fruit he offers for sale, but a valuable record of the methods of culture and results of experimenting by one of the most skillful and successful fruit-growers in the world. Everything is thoroughly tested before it is offered for sale, and the frank opinion of the proprietor freely given to the public. As a guide in the choice of varieties, and best modes of cultivating them, the catalogue will be found of great value by any one who cultivates a garden, however small. We have every reason to believe that Mr. Knox is most conscientious and trustworthy in the filling of any orders which may be entrusted to him. We advise our horticulturally inclined readers to write for this catalogue, enclosing ten cents, U.S. cy. Address J. Knox, box 155, Pittsburg, Pa.

Agricultural Intelligence.

Farming Gossip in Great Britain.

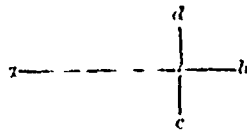
(By our English Correspondent.)

Implements at the Smithfield Club Show—Steam Cultivation; Mr. Howard's System—Employment of Children; Agricultural "Gangs"—Edinburgh and other Cattle Shows—the Weather, &c.

My last communication was taken up with an account chiefly of the doings in the Smithfield Cattle Show, which is the great event of the last month of the year; and in many respects of the year itself. Although named a cattle show, and although the interest centres principally in the animals there shown, it is something more than that. For through sundry reasons not here necessary to name, save the one that they add largely to the receipts of the exchequer of the Smithfield Club, agricultural implements and machines form no inconsiderable feature of the exhibition; and it is right to add that the collection, not only in point of numbers but in that of excellence, justifies its taking a very prominent place in the estimation of those interested in the progress of farming. Through a long series of years, this department of the show has been so growing in importance, that the large amount of exhibiting space afforded by the removal from the confined galleries of Baker Street Bazaar—where the show was held for many years—to the Agricultural Hall at Islington, was, nevertheless, shown to be too small; and the late show witnessed an addition of a no small extent of surface, which was, however, quite occupied.

To one accustomed to consider what may be called the primitive, or rather the primary implements of farming—as the spade, the plough, the harrow and the roller—the display of mechanism at such a show as that which I am now recording is bewildering in the extreme. The improved modes of treating the soil, of cultivating the crops, and gathering in and storing up of their produce, and of feeding the stock which they maintain, the whole working in what may be called a circle of operations, the very pith of which is exemplified in the adage, "no crops, no cattle, no manure; no manure, no crops;" necessitates the bringing out, and the using of a number of implements and machines, which the older and less perfect system of farming in no way demanded. The additions, also, to the working powers of the farm, notably in that of steam, has brought about a revolution which half a century ago could not have been contemplated; and great as are the wonders which it has up to the present time effected, these are destined to be eclipsed by the still greater wonders which the future has evidently in store. This is remarkably exemplified in the exhibition of implements and machines, such as those displayed in the galleries and in the space under the galleries of the Smithfield Cattle Show now numbered with the past. Steam engines of all forms, and, I was going to say, of all powers, were to be seen in a large proportion of the "stands," and in nearly all of them were to be seen evidence of an amount of care in design and of finish in construction of a high order of excellence. Perhaps in this department the most noteworthy was the steam engine, used for steam cultivation and for traction purposes generally, patented and manufactured by Messrs. James and Frederick Howard, of Bedford. The principal feature of this finely arranged and constructed engine is the placing of the boiler. Till Mr. James Howard, of the above firm—to whose ingenuity the invention is due met it, the difficulty experienced in using steam engines for cultivators and traction purposes was, that in ascending inclines, or in standing upon uneven ground, the water level in the boiler, which was placed in the same line of direction in which the engine was progressing, was not maintained. The following simple diagram will explain the point. In

the ordinary form of steam engine for cultivating or traction purposes, the boiler was placed longitudinally, thus:; and so long as the engine stood upon level ground, the relative level of the water—as shown by dotted lines—was not altered; but as soon as the engine was upon uneven ground this was immediately changed, as thus:



Mr. Howard got rid of the dangers arising from this, by very simply placing the boiler across the length of the engine, as thus: a, b, being the line of the length of engine; c, d, the boiler. In place, therefore, of the long diameter of the boiler being influenced by the position of the engine, the short diameter was only influenced, so that the alteration of the water in the level of the boiler was reduced to a minimum. There are many other features of constructive excellence and arrangement in Messrs. Howard's engine, which I cannot notice here without the aid of diagrams which would be too technical for your journal. Suffice it to say, that its powers and capabilities as a traction engine are very marked. It travels up steep inclines, and is capable of overcoming obstacles lying in its path, of dimensions not ordinarily met with in practice. It may be also added, that from the arrangement of the boiler above described, an unusually large foot-plate is provided, that is the platform so to call it, upon which the engine stands to work the engine and fire the furnace. A space for a very large water tank is also provided under the engine. I may here note that the inventor of this traction engine—and I am pleased to be able to add, of numerous ingenious machines and implements—is the Mr. James Howard who recently made an extended tour in the United States of America and Canada, for the purpose of noting the peculiarities of the agriculture of these countries; and whose paper recording the results of his journey, read before the London Central Farmers' Club, was by far the best and most suggestively practical paper which has been read upon the subject. And talking, or rather writing about the London Central Farmers' Club, reminds me of the fact that one of the evenings of the cattle show week was devoted to the reading of a paper upon steam cultivation, at the rooms of the Club. The title of the paper was "The Present Aspect of Steam Cultivation," and the author Mr. John Algernon Clarke. When I say that Mr. Clarke is the author of the Report on Steam Cultivation, which was issued by the Royal Agricultural Society of England, and which embodied in an admirably full and lucid manner the results of the commission appointed by the above Society to inquire into what has been done, and is being done, in carrying out practically on the farms of England the system of steam cultivation—your readers will understand why a very able paper was expected from Mr. Clarke. I was present at its reading, and was not the only one disappointed at the scantiness of its practical matter. In saying this I by no means do otherwise than pay Mr. Clarke a high compliment, for I know he could have done very much better if he had liked. As it was, the discussion that followed the reading of the paper was better than the paper itself—and yet neither paper nor discussion grasped—at least did not grasp forcibly—the principle which dictates the future of steam power as applied to the cultivation of the soil. At the same time, there was much elicited by both, if not very directly practical, at least much that was practically suggestive. One very marked feature was to be noticed in the paper itself, and that was the hopefulness—shall I call it?—of the author, as to what could be done by the power of steam in getting over very large surfaces of land. What will your readers who are at present satisfied with the ordinary rate of horse work, think of sixty, seventy, and more acres per day being ploughed by steam power? And yet Mr. Clarke, after describing some steam ploughing which he saw executed at the rate of fifty-five acres per day of ten hours, said: "I

have not the slightest doubt myself that seventy acres—I should not stare myself if the quantity were a hundred acres—could be cultivated, provided the work were tolerably light." For my part, I think that great danger is likely to arise in the progress of steam power cultivation from the desire to expect or demand too much in the way of surface work. The question, I take it, is not how many acres per day can be done after a fashion, but how much can be well done? Mr. Clarke admits that in the ploughing, at the rate of fifty-five acres per day, which he saw performed, the work done was very shallow—so shallow that I call it a mere scratching of the surface. Now, I have all along maintained, through a series of years, that the future of the steam power cultivation rested in the depth of the cultivable soil which it would enable us to obtain, and that the mere facility to run over a large surface was not the point to be aimed at. And I was glad to hear, at the discussion which followed the reading of Mr. Clarke's paper, so eminent an authority on the subject as Mr. Howard take up the same view. This gentleman said, "Some of the people who had purchased steam tackle had not themselves derived advantage from it; they had, by endeavoring to get over too large a surface, sacrificed one of the main benefits of steam cultivation, namely, depth of cultivation." And as Mr. Howard had pointed out, this depth was as valuable for light land, as it is admitted to be for heavy; for while in the case of heavy land it loosens it, in the case of light land the depth of cultivation enables it to retain the moisture in time of drought. Allusion was made to the danger arising from the deep cultivation by bringing up harsh and unkind soil to mix in the finer cultivated portion of the old surface. But this fear of danger—for in many cases it is only fear, "and nothing more"—arises from a fallacy or misapprehension of what is conveyed or intended to be conveyed by the advocates of deep cultivation. There is a wide difference between deep stirring of the under soil, and a deep ploughing which tends to bring that undersoil to the surface. I quite believe that danger is likely to arise, and in some cases does arise, from the too rapid bringing up to the surface of the harsh, unkindly subsoil; but, then, by a more perfect system of deep stirring of the under soil, which in the first place loosens it, and makes it ready to receive the deep-going roots of some plants, and ultimately brings it up to the surface, far higher results are obtained. Much could I say on this subject, but must refrain. Another thing likely to retard the progress of steam cultivation is the idea held by some that it will supersede horse power altogether. This is a mistake, and is calculated to give erroneous notions of what steam power can do. With few exceptions, steam can only be used as an auxiliary—true, a very powerful auxiliary, for it will do the heaviest and the largest amount of work, leaving but a minimum of the work to be done by the plough—but, then, ploughing is not the only work which has to be done on the farm, and for what remains horse-power is, and as far as I can see at present, ever will be required on a farm. To talk, then, as some do, of horse-power being altogether done away with on a farm by the introduction of steam cultivation, is not correct; indeed, some might be inclined to characterize it in harsher terms, and call it nonsense. Where steam power is used to cultivate a farm, the number of the horses formerly employed may be, and will be, reduced, and the reduction may effect a large saving, for a horse is an expensive animal to keep. In this country, certainly not less than £25, but more probably £30, may be set down as the annual cost of a horse.

I visited lately the farm of Mr. James Howard, where I saw the conjoined working of steam and horse-power carried out with admirable effect. Mr. Howard is a believer in what I have above said, that steam-power is only an auxiliary; and the way in which he uses his horses to supplement the steam-plough—horses, as he says, which he must have on his farm, and which he cannot afford to keep idle—is characteristic, and worthy of a word or two of description here. Mr. Howard uses the cultivator, not the plough, for working the soil, and immediately the stables are cleared he sets to work, and making long days with the steam engine, he gets through an immense portion of work quickly. The fields thus steam-cultivated he allows to stand as left till the winter wheat is all got in, after which labour the men are relieved, and then the horse-power is made available for finishing off the steam-cultivated fields. This is done by using a double-breasted or mould-board plough, which throws the land up in ridges after the fashion of turnip land, a pair of horses being capable of doing from two and one-half to three acres per day of this work. The land is thus thrown up in the best possible way to receive the ameliorating influences of the atmosphere during winter and spring; and a splendid tilth is the result. Nothing more in the way of cultivation is required; the manure in spring is laid between the ridges, and the seed is put in

In the usual way. Mr. Howard, by this system, never fails to get a good turnip crop, and in land which cannot be called good turnip land. I was well satisfied at the clean appearance of the land under this system. And here I may remark, that I have noticed as a rule, that land worked by the cultivator is cleaner than land worked by a plough. I could, if space were at command, give a reason for this which I think would be acceptable to the reader, but must allow this to lie over to another opportunity. The finest and best cultivated farm, and one singularly free from weeds, I ever saw, had not been touched by the plough for years. It was in marked contrast to the fields of the neighboring farms which surrounded it.

To-day—January 2nd—what is called the "Agricultural Labor Act" comes into operation. This Act concerns itself with a state of matters which the readers of your journal may not be aware of, and many of them may have a difficulty to conceive how it could have attained the point of evil which characterized it. The matter may be explained in a few words. In certain districts of England, notably in those of Lincolnshire and Norfolk, a custom has prevailed of using the labor of young children—I regret to have to say very young in some cases—in carrying out various agricultural operations, as weeding and the like. These children were employed in considerable numbers, formed into "gangs," and taken about the district from one part to another, under the care of a leader, or I should rather say a driver. When I further say that the poor children thus gathered in gangs and thus employed were entirely left to themselves—that a promiscuous mixture of the sexes was permitted—that they were but poorly clad, miserably fed, and quite uneducated—and further, that the driver or "ganger," as he was called, was generally one distinguished for the very opposites of what we call the "virtues," we may well understand the horrors of vice and degradation which arose from the system. Such and so deplorable in their results were these, that public attention was called to the subject; the press, that powerful engine, was brought to bear upon it, and at last, so complete was the exposure of its iniquity—the term is not a whit too strong—that a Parliamentary inquiry was made into the system, and the result of this was the passing of an enactment which practically puts a stop to it. Two lessons we may learn from this; first, how very quietly and unobtrusively a system may be begun, may go on for years, thoroughly bad in all its aspects, and gradually acquire a position, so to say, which brings with it a large and extended power of mischief, without much notice being taken of it. The second lesson is, that after all that is said of the universal reign of vice which apparently affects us, the public mind, as a rule, is in favor of the public exercise of virtue; that vice may flout for a while before us unblushingly and raise its face defiant, but that this is of short duration comparatively, and that soon the public voice will be raised to say that this must not be—and it is no longer. A third lesson may be drawn from the matter under review, and that is, that little row-a-days can be done in bringing about any reform without the aid of the press—which sounds, by the way, very much like self-congratulation, which, perhaps, it is. At all events, let it be taken for what it is worth.

Stimulated by the success of the Cattle Shows of London, Liverpool, Leeds and York, Edinburgh last year inaugurated a Christmas Cattle Show. This last was opened on the 14th of December, and although some difficulties arose—as they are always sure to arise in the commencement of any enterprise—which were aggravated by the fact that for want of a Hall large enough to contain all the departments of stock, different buildings in different parts of the town had to be hired for the occasion, still, the first Christmas Edinburgh Cattle Show may be held to have been a success. The fat cattle especially were remarkably good.

When we remember the fearful losses sustained through the ravages of the cattle plague, your readers will understand the excitement caused by the report that it had again broken out at a farm belonging to Mr. Dorce, at Langrig in Berwickshire, Scotland, which excitement was the more intensified by the report being followed by the announcement that two experts in veterinary science, and the local veterinary surgeon, had pronounced the disease to be really the cattle plague. Professor Simonds, of the Royal Veterinary College, London, who was sent down, reported, however, that the disease was not the cattle plague, but enteritis. The excitement ceased after this decision, although while it lasted it exercised a prejudicial influence upon the marketable value of store cattle.

As regards the weather during the past month, it may be said that, as a rule, December rarely brings with it weather so favorable to farming operations as did the month that has just closed. It was remarkably dry and open; and as a consequence, not

only did farm work get on well, but the health of stock was good. The severe weather which, however, while I write reigns nearly over all the kingdom, justifies the old proverb—that "as the day lengthens the frost strengthens."

Average Yield of English Crops in 1867.

The following table, showing the average yield of various crops in different soils throughout England and Wales during the past year, will, no doubt, be read with interest by Canadian farmers—

Crops	Estimate of quantity of English yield per acre		Tons per acre	
	Wheat	Other	Wheat	Other
DART—Marsh lands, gravel, &c.	28	38	40.2	39.5
TERTIARY—Org. sands, clays, &c.	29.3	38.7	29.1	28
CRETACEOUS—Chalk, green sand, &c.	26.6	31.3	23.8	22.4
WASHERY—Clay, &c., Kent and Sussex.	21.1	28.2	22.7	24.4
OSAGE AND LASS—Clays, Sand, &c.	22.9	35.6	23.6	27.1
TALS—New red sandstone &c.	22.5	33.9	23.2	23.3
PERMIAN—Limestones	21.9	34.4	40.2	18.2
CARBONIFEROUS—Coal measures, limestones, &c.	23.9	35.3	42.1	19.3
DEVONIAN—Old red sandstone	21	24.6	24.8	16
SLICIAN AND CAMBRIAN—Shale and granite	22.6	27.2	22.8	25
APPROX—English Reports received too late to group	22.2	31	42.8	23.8
WALIS	21.7	23.2	27.9	20.8
Grand Total	22.0	40.4	40.9	27.9
Average Result	24.4	33.7	41.2	22.9

Report of South Norwich Agricultural Society.

The first Annual Report of the Directors of the South Norwich Branch Agricultural Society, was delivered at the Annual Meeting, held in the Town Hall, Otterville, on the 9th day of January, 1868, and was as follows:—

We, the directors of your Society, feel much pleasure in presenting to you this our first annual report, and we think every member will be highly gratified at our being able to show, after paying all premiums awarded at our Spring and Fall Shows, and all other expenses connected with the Society, the respectable sum of \$166 39 on hand, to be disposed of as our successors in office may deem best for the benefit of the Society.

Your directors are of the opinion that the objects of Agricultural Societies are not confined to inviting

competition at Exhibitions, for the sake of obtaining the premiums awarded, but should aim to encourage the introduction of such stock and seeds into the Township as will tend to improve our stock, and increase the value of our crops. Last spring your directors offered premiums for stallions and bulls, the premiums to be awarded only to such stock as did service in the Township during the season. They also invited parties wishing to exchange or sell seed for sowing and planting, to bring such as they wished to exchange or sell, to the spring fair.

Although they failed to induce parties to bring any seeds for sale or exchange, they hope that this season you will all endeavour to do your part in making a spring show successful. Your directors feeling assured that sowing on our lighter soil seed grown upon heavy clay soil would be attended with favourable results, purchased a quantity of Clover seed, grown in the Township of Rainham, and distributed it amongst the members, in proportion to their subscriptions. They would now respectfully recommend the directors of your Society to purchase some new and valuable varieties of Spring Wheat from some of the North or Eastern parts of the Province, and distribute it amongst the members in the same manner. They would also recommend every member to aid their directors in increasing the number of members for this year, and in getting as many as possible to subscribe for the CANADA FARMER, that our Society may retain the reputation it has so deservedly obtained, of being one of the largest and most progressive Township Societies in the County.

C. J. TREFFOY, President.

South Norwich, January 18th, 1868.

Officers of Agricultural Societies for 1868.

We have received the following lists of Officers of Agricultural Societies. We publish them as they come to hand; but hope in due time to give, as we did last year, a complete list, in tabular form, for convenience of reference, of the Agricultural Societies of the Province, together with the names of the respective Presidents, Treasurers and Secretaries. The subjoined lists include the Directors also.

WEST NORTHUMBERLAND.—President, John Henderson; 1st Vice-President, Glover Bennett; 2nd Vice-President, Joseph Baker; Secretary, Charles Bourn; Treasurer, Walter Riddell; Directors—John Underwood, George Carruthers, John Eagleson, James M. Carruthers, Thomas Cullis, Platt Hinman, Henry Wade.

TOWNSHIP OF HAMILTON.—President, Wm. Mason; Vice-President, John Cullis; Secretary, Richard Cullis; Treasurer, Trueman McEvers; Directors—John Little, James Hagerman, Peter Sidey, James Russell, Joseph Fennell, Glover Bennett, Robert Scart, George Kent, Ira Brisbin.

COUNTY VICTORIA.—President, Samuel Metherell, Oakwood, P.O.; 1st Vice-President, John Conolly, Ops; 2nd Vice-President, Arthur McQuode, Omamee; Secretary and Treasurer, W. J. Thiskell, Lindsay; Directors—Donald Grant, Eldon; Wm. Parkinson, Mariposa; Robert Graham, Fenelon; John Lettgow, Verulam; John Knowlson, Lindsay; Wm. Cottingham, Emily; James Blackwell, Ops.

HALDIMAND TOWNSHIP.—President, Joseph Baker; Vice-President, John Mulholland; Secretary & Treasurer, Josias Gillard; Directors—W. Noble, A. C. Campbell, Richard Hare, Henry Metcalfe, George Robertson, J. Wilson, Almond Richardson, B. Jackson, W. Staples, Robert Rogers.

MARA AND RAMA BRANCH.—President, A. Kennedy; Vice-President, John O'Donnell; Treasurer, Andrew Dudenhefer; Secretary, Amos Thorne. Directors—James Smith, Francis Duffy, James Mahoney, Bernard Tivnon, James Burgin, Jeremiah McHugh, Thomas Whipps, Peter Thompson.

EUPHEMIA AND DAWN.—President, Thomas Carey; Vice-President, Edwin Amnden; Secretary, Isaac Unsworth; Treasurer, Robert Gunne. Directors—Solomon Huff, James C. Brown, James Scarlett, John Proctor, Dr. Davison, John Dobbay, Wm. Moorhouse, Oliver Bilton and Samuel Beamish.

ASPHODEL, BELMONT AND DUMMER.—President, P. M. Grover, M.P.; 1st Vice-President, R. C. F. Birdzell; 2nd Vice-President, W. E. Roxburgh. Directors—Peter Pearce, John Breckenridge, Edward Patterson, John Pettigrew, A. P. Kidd, James Stephenson, Phillip Fitzpatrick, Hugh Christie.

PETERBORO.—President, John Walton; 1st Vice-President, Joseph Walton; 2nd Vice-President, Rev. V. Clementi; Treasurer & Secretary, J. Carnegie, M. P. P. Directors—Isaac Garbott, J. W. Gilmour, C. Taylor, M. Sammlerson, John Whyte, E. Mann, Joseph H. Walton.

Award of Prizes at the New York State Trial of Ploughs, &c.

The following is the official report of the award of prizes at the trial of ploughs and other implements, held at Utica in September last, under the auspices of the New York Agricultural Society:—

PLOUGHS.

- CLASS I. *Sod Plough for Stiff Soils*—The Judges unanimously awarded the Gold Medal to F. F. Holbrook, Boston, Mass., for his plough, 95.
- CLASS II. *Plough for Stubble Lands in Stiff Soils*—The Gold Medal awarded to F. F. Holbrook, Boston.
- CLASS III. *Sod Plough for Sandy Soils or Light Loams*—No trial in this class.
- CLASS IV. *Plough for Stubble Land, cutting a furrow twelve inches deep, with three horses, and raised the lowest soil to the surface of the furrow—furrow five inches wide*—Unanimously awarded the large Gold Medal to F. F. Holbrook, Boston, Mass.
- CLASS V. *Michigan Sod and Trench Plough*—Unanimously awarded the Medal to F. F. Holbrook, Boston, Mass.
- CLASS VI. *Subsoil Plough in connection with an ordinary Plough*—None of the Ploughs offered are worthy of a premium.
- CLASS VII. *Ditching Plough for Opening Drains*—Unanimously awarded the Gold Medal to N. Hawks, Appleton, Maine.
- CLASS VIII. *Machine for Excavating Ditches for Underdraining*—Edwin Heath, Fowlerville, Livingston County, Gold Medal. Unanimous.
- CLASS IX. *Steel Plough for Alluvial and Unctuous Lands*—Gold Medal to Collins & Co., New York. Unanimous.
- CLASS X. *Swing or Side-hill Plough*—No award. Judges equally divided.

HARROWS.

- Best Harrow*—J. E. Morgan, Deerfield, Oneida County, Gold Medal.
- The Judges recommended a special premium of a Gold Medal to F. Nishwitz, Williamsburg, for his *Pulverizing Harrow*.

CULTIVATORS.

- CLASS I. *For Corn and Root Crops—One-horse Cultivator*—Alden & Co., Auburn, Gold Medal.
- CLASS I. *Two-horse Cultivator, for cultivating two rows*—To Flipper, the inventor, (the Machine being entered by A. L. Brearley & Co., Trenton, N. J.) Gold Medal.
- CLASS II. *For Mellowing Soil and Killing Weeds*—Gold Medal to Forde & Howe, Oneonta, N. Y.
- Best Cultivator having Handles*—Wm. H. Burtis & Co., Maltaville, Saratoga County, Gold Medal.

So great is the demand for the Osage plant, for fencing purposes, that the price has recently risen from two and a half to four dollars per thousand in the State of Illinois.

At the Government experimental farm, at Washington, 576 varieties of cereals and garden vegetables were tested last year. Among these were 109 varieties of wheat, twenty of oats, ten of corn, twenty-nine of grass seeds, and thirty-six of potatoes.

The Illinois State Agricultural Society's committee on scoured fleeces recently reported an elaborate trial of wool cleansing, with results which are but the repetition of those which have been reached by New York and Vermont trials.

The *California Farmer* says the agricultural products of that state already exceed those of the mines, and are increasing in value with great rapidity.

W. W. BELLUS, Pierpont, N. Y., says the great trouble with the farmers in his region is that as a general thing land tilling has been superseded by land getting.

A SUGAR MAPLE was lately cut on the pasture of N. K. Abbott, West Concord, N. H., nearly 5 feet in diameter and over 100 feet high. It had been tapped 106 years.

EX-GOVERNOR DOBTEWELL, of Massachusetts, does not think much of agricultural colleges, but would have educated scientific men sent out every summer among the farmers to make observations, and then revisit the country in winter and point out to the farmers their mistakes.

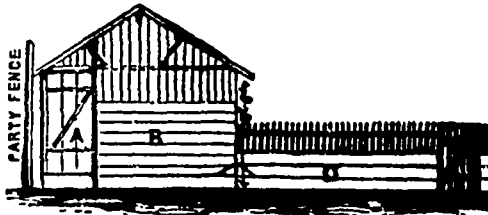
A new grass is springing up in the Southern States. It appears to be a dwarf clover, is very thick set, covering the earth with a beautiful carpet of green. It is much relished by cattle, and is a complete exterminator of Bermuda, joint, sedge, and other grasses. In Middle Georgia very abundant, and is attracting much attention.

Poultry Yard.

Plan of a Poultry House.

To the Editor of THE CANADA FARMER:

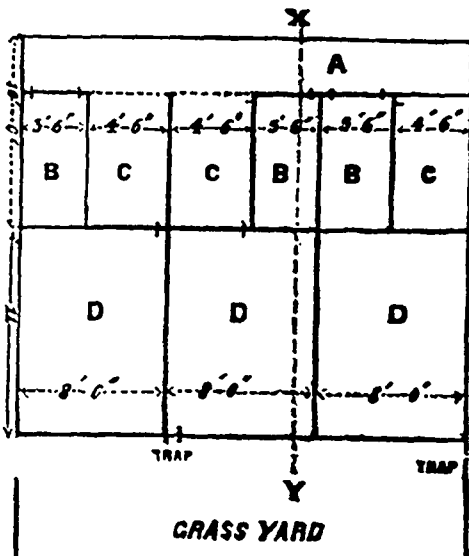
Str,—I am sorry that my promise has been delayed so long, and that I have not been able to furnish you with a plan of my poultry house before this. However, your pages did not lack poultry matter, and I am quite sure you did not need it before. I now send



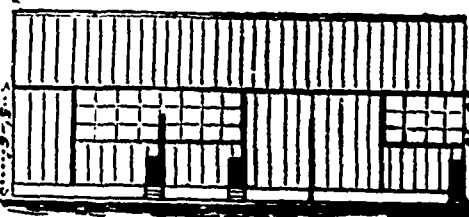
SECTION ON X Y

it with a brief description. You know there is nothing new under the sun; and it will very likely be said that I copied my plan from the drawing of Mr. Lane's house, at page 64 of Wright's Poultry Book, for it so happens that it is as near as can be the same: but I did not see Mr. Wright's book until a short time

PLAN.



GRASS YARD



FRONT ELEVATION.

since, and my house was put up in May, 1866. In some respects mine is preferable for this climate to Mr. Lane's, but on the whole, his being larger, is better. In fact, I consider mine just half the size it should be. In Mr. Lane's plan the birds cannot be seen in the day time without going out of doors in



ELEVATION INSIDE PASSAGE.

- NOTE.—A Covered Passage.
- B Roosting and Laying.
- C Covered Yard.
- D Gravel Yard.

front of the covered yards, or through the roosting houses; in my plan, you can see the fowls in all weathers, as the yards are along-side the roosting houses. This is preferable for Canada; and in the winter my inside yard or shed is protected with glass. Having only kept cochins, my partitions are low, or I should have to import wire. It is a curious fact that none is to be had here except hand-made at a prohibitory price. Surely, with the poultry fever raging, it would be a paying enterprise to import the cheap wire fence used in England. My house is made of the commonest lumber, put up in the quickest and cheapest way. It took two good carpenters a week to put up the main part and the division yards, and the cost was about fifty dollars. This does not include the glass on the inside. The yard is simply made of four feet laths nailed to pieces 1 inch x 1 1/2 inches as rails, with a few posts to keep it up. In the inside elevation you will see the arrangement. I have left the gate off to show the glass house clearly. In the part C, there is no floor, but I keep it well covered with wood ashes, and am never troubled with vermin. The gates lift up from two cleats, which I find more convenient than hinges. I use no artificial heat, and find the birds do very well. Water and soft food they have to eat through the bars, the food being placed on the passage floor in pans. Grain I generally throw over the gate to them. The great thing is to keep them dry and clean—and there is no better plan for this than the roost mentioned in the description of the octagonal house in the CANADA FARMER.

There are various ways of fitting up, according to locality and taste—what I send has been found to answer for eighteen to twenty hens and three cocks. I have other places for setting hens and chickens. If any person is inclined to adopt this plan, I would recommend that the covered yards should be at least double the size. In summer, it should be understood, the ashes are taken out and the yards C, C, C, left open; they then afford good shelter in wet days.

F. C. HASSARD.

The Apiary.

Artificial Swarming.

THERE is no doubt but artificial swarming, successfully practised, has many advantages over natural swarming. Swarms may be made artificially from one to two weeks earlier than they would come off if left to themselves. This is quite a gain, as such swarms will have their hives nearly filled with combs before natural swarming commences. Old stocks are forced to raise queens several days earlier than they would naturally. The bees never lie out for the want of room to labour, waiting for a queen to be reared so they can swarm (as the old queen will never leave until the bees have commenced to rear another); and swarms never leave and go to the woods. It frequently happens, too, when bees are left to swarm naturally, that certain colonies refuse to do so—hanging out the whole season, but never swarming. Such stock may always be artificially swarmed and do well, and at the end of the season the bee-keeper has two or more stocks where he would have only one. Natural swarming is also attended with a good deal of care. About the time swarms are expected the bees must be closely watched for days, and more or less for weeks, in order that swarms may be seen and hived as soon as they come off. This requires some person to be at home every day, Sundays not excepted. But nothing of this kind attends artificial swarming, as a large number of hives may all be swarmed in a day, and all is over. There is another difficulty with natural swarming, especially where there are a number of colonies together. The loud humming of the bees and the excitement that generally prevails when a swarm is

coming off, are very apt to draw off others that are ready or nearly so. In this case two or three top swarms may, and frequently do, cluster together, causing the bee-keeper considerable trouble to separate them, especially if he does not understand it. All this is avoided by practising artificial swarming. It also gives the bee-keeper control over his colonies; he can make few or many swarms, just as he thinks best or as the season will allow. Artificial swarming may be practised by almost any bee-keeper with movable comb hives, and the experienced apiarian may do so even with common box or straw hives, but not so successfully.

Profits of Bee-Keeping.

SEEING a statement by Mr Baldrige in the *Bee Journal* for November in regard to the profits of an apiary owned by Mr Silas Way, has prompted me to give a statement of one owned by myself and son. We had at the commencement of last winter one hundred and thirty-six stocks, very lightly stored with honey, as the season had been the most unfavourable for honey I have known during the twenty-eight years I have owned bees. Our bees came out in the spring alive except two stocks, and both of those starved. But one large Italian left about fifteen pounds of honey which they could not get at, because there were no winter passages through the combs. After they were set out in the spring, we lost some stocks by starvation and brood rot (foul brood), so that when the honey season opened we had about one hundred and fifteen healthy colonies. Three-fourths of these had to be fed previous to that time. We fed them on cheap sugar. Swarming commenced on the 14th of June and ended on the 14th of August; the Italians taking the lead at least two weeks, and closing later by three weeks than the natives. A number of our young Italian stocks swarmed in August, after filling eight boxes; and the one that came off on the 14th of August, gathered honey enough to winter. We have two hundred and four stocks, besides one that we have sold—making ninety young stocks, all in good condition. Many of our natives did not swarm at all, but I believe the Italians all swarmed.

Annexed is the statement of the year's produce of honey:

Honey in glass caps, sold	6 155 pounds
Strained honey, sold	350 "
Strained honey on hand	250 "
Box honey on hand	380 "
Honey used in family or given away	100 "
	7,235

Our bees are mostly Italian, and are as pure as can be found anywhere; bred by Mr. W. W. Cary, of Colerain, Mass. who possesses superior advantages for rearing pure Italian queens, and is a man perfectly reliable in all respects.

I think we have greatly increased the value of our bees by the introduction of the Italians. It seems to give new life and energy to all their movements, however slight the mixture with the natives.

I have given the amount of honey our bees have stored, and now I will give the product of a single stock of hybrids which I had in a large box hive. It cast a swarm on the 20th of June. This I put into a hive on which I use four glass boxes, and from which we took fourteen full boxes of seven pounds each. The mother stock cast a second swarm, from which we took four boxes, making together eighteen boxes, or one hundred and twenty-six pounds of honey. I then transferred the old stock, and should think it would weigh a hundred pounds. There being no young brood to hatch I think the contents apart from the hive, would weigh seventy-five pounds, which, added to the surplus above, would make two hundred and one pounds, besides three swarms in good condition to winter.

We had other Italian bees that did equally well. One cast a swarm and filled fourteen boxes, and the cast filled five boxes, besides some only partially filled, and cast a swarm. Another Italian swarm came off on the 2nd of July, and filled twelve boxes. Our honey was mostly gathered from clover, and sold for thirty cents a pound.—Cor. in *American Bee Journal*.

A Massachusetts bee-keeper says that to take a handful of tansy, catnip, or some other highly-scented herb, and rub those parts of bee-hives that are infested with ants, will quickly and effectually abate the nuisance.

BEE-KEEPERS' ASSOCIATION.—At the last Iowa State fair, an Association of Bee-keepers was formed, no fewer than 150 members joining the organization at the outset.

Horticulture.

Annual Meeting of the Fruit Growers' Association.

THE annual meeting of the Fruit Growers' Association of Ontario was held on the 15th January, at the County Buildings, Hamilton. William H. Mills, Esq., President, in the chair.

The attendance of members was large. D. W. Beadle, Esq. Secretary read the minutes of the autumn meeting, which were approved.

The Secretary stated that there was a balance in the hands of the Treasurer to the credit of the Association.

The President delivered an interesting address, the publication of which we reserve for another issue.

Mr. A. M. Smith read the report of the Fruit Committee. The report we give below.

The meeting then proceeded to the election of officers for the ensuing year, with the following result:—

- President—Wm H Mills, Esq., Hamilton, re-elected.
- 1st Vice-President—M. A. Morse, Esq., Smithville.
- 2nd Vice-President—Professor Buckland, Toronto.
- Secretary and Treasurer—D. W. Beadle, Esq., St. Catharines, re-elected.

Fruit Committee—Geo. Leslie, A. M. Smith, Chas. Arnold, Wm. Goldsmith, John A. Bruce, Esqs.

The publication Committee were re-appointed.

On motion of Mr. Morse, seconded by the Rev. Mr. Burnett, a vote of thanks was tendered the Secretary. A vote of thanks was also tendered the gentlemen who had read reports, and the County Council for the use of their room.

The Secretary informed the meeting that in the new Agricultural Bill it was proposed that the President of the Fruit Growers' Association would have a seat at the Council of the Board of Agriculture.

It was decided that the summer meeting of the Association be held at Toronto, and the autumn meeting at St. Catharines at the call of the Secretary.

REPORT OF THE FRUIT COMMITTEE.

REPORT OF MR. A. M. SMITH, OF GRIMSBY.

THE past year has been, in many respects, an unfavourable one for fruits in the section for which I was appointed to report. Still, we have had a part of a crop and I will proceed to give you the observations I have made, hoping though they are imperfect, you may be able to gather some information from them, and, in order to be systematical, I will take the fruits in rotation giving their comparative time of ripening quantities, &c.

STRAWBERRIES.—The Strawberry crop has been very light, owing to the extreme drouth of the season. Wilson's Albany stands at the head of the list for general cultivation, and is too well known to need any description—ripe this year 20th June, and yielded only about half as much this season as last; and the same might be said of nearly all the varieties. Triomphe de Gand stands next among the tried sorts with me—about a week later than Wilson's, and a much better berry, though not as productive. Jenny Lind Hovey's Seedling, Macavoy's Extra Red, Russell's Prolific, La Constante, Trolopp's Victoria, and many others, have their admirers, and are well worthy the attention of amateurs; but I do not consider them profitable market berries. There are several new varieties claiming attention which have been fruited, for the first time in this locality, this year, the most prominent of which is the Jucunda, or Knox's 700, a Seedling of Knox, the great Strawberry grower of Pittsburgh, Pa. He claims that it is the best and most prolific of several hundred varieties he cultivates—valuable for its size, flavour, productiveness, hardness, firmness, long-bearing, &c. It certainly promises well here. The fruit is large, similar to the Triomphe de Gand, though not so much of the cock's comb shape—plants similar in habit, but more productive, and said to be much hardier. Metcalf's Early is another new variety which promises well. It is of good size and flavour, a good bearer, and five or six days earlier than Wilson's Albany. The Agriculturist, Brooklyn and New Jersey Scarlet, have been fruited but fail to sustain the reputation they have in New York as prize berries, though the season has been unfavourable for a fair test of any variety of fruit. Smith's Seedling I exhibited at your June meeting, and you had an opportunity of

testing it. I can claim nothing for it beyond ordinary berries, only its peculiar agreeable flavour which is admired by many. It is a fair bearer, of medium size, but too soft for a market berry. The only insect which has seriously affected the Strawberry is the large White Grub (*Lachnosterna fusca*) which has eaten off the roots of the plants to a considerable extent in some localities.

CHERRIES have suffered severely from the attack of the Curculio, or Plum Weevil (*Conotrachelus Nenniphar*), though we have had a partial crop of nearly all varieties. Early Purple, May Duke, Gov. Wood Knight's Early Black, Elton Black, Tartarian and Yellow Spanish are among those that have succeeded best, particularly the Yellow Spanish. Mr. D. Vandusen, of Grimsby, picked over 400 quarts from two trees.

CURRENTS AND GOOSBERRIES were stripped of their foliage by the Currant Leaf Caterpillar (*Abraxas ribesaria*) in many places, and where they escaped this insect, the drouth diminished their size so that the berries and crop both were small. Among the currants, the old Red Dutch Cherry, and White Grape, seem to succeed best. Houghton's Seedling is the only Goosberry that I have seen that would pay for cultivation here, on account of the prevalence of the mildew, which it is proof against. It bears a small berry, but is a very prolific bearer. There is another insect which is destroying the Currant bushes to a considerable extent—the Currant Stem Borer (*Trochilium Typuliforme*). It is a small white grub, similar in appearance to the Peach Tree Borer, and is the larva of an insect about half the size of a honey bee, which deposits its eggs in the stalk of the Currant, and when it hatches, it works its way up the heart of the bush, eating and enlarging as it goes, till it eats its way out and becomes an insect, destroying the bush entirely.

RASPBERRIES have been scarce, on account of the drouth, too. A few of the Antwerps, Brinckle's Orange, Belle de Fontenay, &c., made their appearance; but the Black Caps seem to be gaining favour the most of any in our locality. Doolittle's improved is the favorite, and has stood the drouth well.

BLACKBERRIES are not cultivated as much as they should be. The Dorchester and Lawton have been grown to some extent, and prove to be a valuable fruit. The Dorchester is the earliest and hardiest, but the Lawton the largest and most productive, and continues a long time in bearing. The Kittatunny and some others have been planted this year, and will be heard of in a year or two.

PLUMS are almost a total failure. Where the Black Knot has loft any trees, the Curculio has taken the fruit.

PEACHES were but a partial crop, owing, I think, to the extreme cold of last winter, and the cold winds of spring. Early Purple, Honest John, Crawford's Early, Early Barnard and Jaques Rareripe, were the varieties that proved the best with me. I have been shown two or three Seedlings, grown by J. C. Kilborn, of Beamsville, which I think worthy of notice. He has an orchard of over 200 trees, mostly seedlings, some of which he exhibited at the Provincial Fair at Kingston, and took prizes on them; and as he is a member of the Association, I would suggest he be invited to exhibit them at our next Annual Meeting, should they be in season; for although a large portion of our members are prohibited by climate from raising this delicious fruit, I am sure they would be interested in anything new pertaining to it. The Peach Tree Borer (*Trochilium exitiosum*) is the greatest enemy we have of the insect kind in the cultivation of the Peach. It is a small white grub, which burrows under the bark at the roots of the trees, sometimes girdling them entirely, and thus destroying them. It assumes the insect form about the middle of June, and soon begins to deposit its eggs in the bark of the trees near the ground, ready for another crop. The most effectual way of destroying them I have found, is to bank up the earth around the tree while they are in their transformatory or pupa state, which prevents a great many of them from getting out, and when they deposit their next crop of eggs, they have to leave them higher up on the trunk of the tree, and when the dirt is levelled away they are more easily reached with a knife, or some pointed instrument, to dig them out.

GRAPES have been a fair crop, and the season has been favorable for ripening them, though too dry for large berries in some places. Many new varieties have fruited for about the first time this year, and I shall give the older ones but a passing notice and confine my remarks to the new. The Isabella has ripened well, and is still the favorite with some. Clinton is gaining favor as a wine grape. Hartford Prolific is still in favor as an early grape, and has not dropped its berries as badly as usual this year. Concord bears the palm for hardness and productiveness, though I think it is destined to be super-

sceded by some variety less tough, and less loxy in flavour. Delaware still stands pre-eminently at the head of the list for a table or wine grape, though it requires rich land and high culture. Diana is an excellent wine grape, and an excellent grape to keep, but is uneven and often late in ripening, though it has done remarkably well this year, and will do well, with a warm exposure and light dry soil. Ontario has nothing to recommend it but its size. Allen's Hybrid I consider the best and hardiest of the white grapes I have seen, though it is tender for Canada and subject to mildew. The Creveling is a grape of the Hartford Prolific style, though a much better grape in many respects. It is as early, hardy, and possesses a great deal better flavour, and clings well to the bunch—berry large. The only objection to it seems to be the clusters are loose and not very well filled; but cultivators think this is owing to a deficiency in the blossom, and can be remedied by growing it in close proximity to the Concord or some other compact variety. Mr J. C. Kilborn, of Beamsville, has fruited it for several years, and took the first prize with it at the Provincial Exhibition a year ago last Fall, as the best open-air grape, and thinks it, as he expresses it, "One of the Grapes" for Canada. Ions has been fruited by several parties in the Niagara District, but does not come up to the expectations of cultivators nor the recommendations of Dr. Grant—particularly in time of ripening. The following is J. C. Kilborn's description of it as grown by him: "Short jointed, hardy wood, rather a delicate grower, commences to ripen early, but like the Diana, lingers a long time before becoming fully ripe, has a very long loose bunch—good sized berries; thin skin and tender flesh, when fully ripe; is excellent for table or wine, being very much like a well-ripened Catawba." Mr Taylor, of St. Catharines, describes it as ripe about the middle of September, small in bunch and berry; color—light red; bunch, loose—similar to Creveling; flavor, good. (The difference in the size of Mr. Taylor's is doubtless owing to his very dry soil.) Mr. Kilborn says of the Israella: "Last year I reported as my first year of fruiting it, and they drop from the bunches. This year they do not drop, and are a good early grape, of fair flavor, compact bunch, hardy and productive." Mr Taylor says Israella ripens before Iona Bunches, small and compact; color, black; flavor, good.

Rogers' Hybrids have, many of them, been fruited this year, and some of them are truly valuable grapes. Mr. Kilborn has fruited twelve varieties of them, and says he has fruited forty varieties of grapes; but if he was confined to six varieties, three of them should be Rogers'. He further says—He has tasted several other of Rogers' besides those he has fruited—grown by Mr. Gaden, of St. Catharines—and on the whole he thinks a selection of five or six varieties selected from them could hardly be equalled by the hundreds of varieties now before the public. He thinks his are wrongly numbered; but that which he got for No 9 exceeds all the rest. He describes it as a bright copper colour, large bunch, tolerably compact, large berry, with a rich spicy flavor, sweet and delicious, resembling some of the best foreign grapes, a much better table grape than the Delaware, a rampant grower, healthy and hardy. Mr. James Taylor, of St. Catharines, has ripened Nos. 3, 4, 15, 19, 30, 33, and 41, and says—"I find them all very fine grapes; all ripen well, berries very large, flavor good. A very remarkable class of grapes." The Adirondac has not come under my observation, though I believe our worthy Secretary has fruited it, and I presume can give us his opinion in regard to it. There are numerous other varieties that have been fruited in our section; but I do not consider them of any real value, unless it be to mix with other varieties for wine.

The Leaf-hopper, or Thrip (*Erythroneura vilis*) has injured the foliage of the vine very much in some vineyards, thus preventing the maturing of the fruit; but there has been very little mildew on grapes as far as I know. I know of no other insect or disease that has proved injurious.

PEARS have borne well, but the fruit has been inferior in size and quality, owing, no doubt, in a great measure to the drouth. Some varieties have been affected with a sort of a fungus growth or black spots and cracking. The Flemish Beauty seems to have suffered most, though other varieties were affected more or less. Tyson, Bartlett, Swan's Orange, White Doyenne, Sickle, Stevens' Genesee and Belle Lucrative, have done the best I think on standards, and Louise Bonno de Jersey, Duchesse de Angouleme and Buffum on dwarf trees. I have noticed but very little fire blight, which has heretofore been the great hindrance to pear culture in many places.

APPLES, which are fast becoming a staple product of the Niagara District, have been but a medium crop this year, and badly injured by worms. The

caterpillar was not so bad in most sections as the year before, but the small worms which burrow in the fruit (*Carpocapsa Pomonella* or larva of the Codling moth) were much worse than I ever saw them before—some trees having more than half of the fruit more or less eaten by them. Most varieties succeed well under the mountain range, but those that are considered the most profitable for market are the Early Harvest, Sweet Bough, Red Astrachan, Gravenstein, Black Detroit, Twenty Oz., Fameuse, Fall Pippin, Rhode Island Greening, Baldwin, Northern Spy, Spitzenberg, and the Russets. The Golden and Roxbury are considered the best of the Russets, though we have a Russet called by some the Red Russet, which I consider equal, if not superior, in every respect to either of them, with the exception of its keeping qualities—it only keeps about with the Rhode Island Greening. I have never seen it in any other locality, and have never been able to get a name for it here amongst nurserymen, or in the States. I have exhibited it several times before at our meetings. I have been shown several seedlings that were very good, but not any better than many varieties we have, and I think it useless to multiply varieties unless we can improve on the old. In concluding my report, I would express my thanks to the gentlemen who have assisted me in making notes and observations, though they may not all be here, particularly Mr. J. C. Kilborn, of Beamsville, Mr. Jas. Taylor, St. Catharines, Mr. A. Morse, of Smithville, Mr. Johnson Pettit, of Grimsby; and I would say my own observations have been wholly confined to the country below the mountain, and as our worthy member Mr. Morse has kindly made me a report of the next District, I will give you it in his own words.

REPORT OF MR. A. MORSE.

The past season has been rather unfavourable to the growth of fruit, in consequence of the unprecedented drouth, there having fallen but about two inches of rain in three months, and but little afterwards until the close of the season; yet most fruits have a richer and better flavour this year than they had in 1866, which was a cloudy, wet season, while 1867 was dry, with a clear sunny sky, favourable to the maturing of fruit.

The year 1867 has afforded a good and favourable opportunity of ascertaining what soils, situations, aspects, and cultivation, are best adapted to the many varieties of fruit, and perhaps never did good cultivation present a more successful contrast to carelessness and negligence; as well formed and cultivated orchards have produced more or less fruit, while the neglected ones have been nearly or quite barren.

Orchards on northern and western slopes of land have withstood the severe drouth better than those that were of a south or south-eastern slope.

SOILS.—Deep loamy soils have proved the most favourable to fruit trees (especially in 1867), neither sandy nor clay soils giving as good yields of fruit, or as fine a growth of trees as the loams. Old orchards retain their vigour much longer on sandy loam than on other soils. I would make an exception of black loams, and low river bottom lands, as well as clay, as being more or less unfavourable to fruit trees.

APPLES.—The Fall Jenetting, Colvert, Dutch Mignonne, Gravenstein, Baldwin, Russets, Spy, Rhode Island Greening, Fameuse, Wagner, Spitzenberg, Twenty Ounce, Black Detroit, King of Tompkin's County, and some of the Pippins, including most of the early varieties, have succeeded well, while the Rambo, Yellow Bellefleur, and Tallman Sweeting have been quite inferior.

PEARS.—The pear crop, for the small number of trees, has been good both in quantity and quality, yet not equal in size of fruit with former years. It has proved almost invariably good on Limestone soils; Bartlett, Doyenne, and Glout Morceau have done well.

CHERRIES.—Cherries have not been a full crop, but the quality good. The Elton, Tartariane, Mayduke, Black Eagle, Napoleon, Bigarreau, and Coe's Transparent, have done well on mellow soils.

PLUMS.—The plum crop has been poor; the Curculio and Black Knot have proved unusually fatal for the year; a few gardens have yielded fruit, some of the trees of the common Blue Plum, so neglected that even the Curculio could not find them, have borne good crops. Those were on hard clay soils.

CURRENTS.—That pest the Currant-worm has nearly destroyed this fruit. I am nearly the only person in this section of the country that is successful in raising the currant. A knowledge of the difficulty and close attention alone can secure success.

GRAPES—are not much grown, but where grown (notwithstanding early frosts) ripened well, and were of fair size and quality.

I should also remark that the apple-worm has been somewhat troublesome, especially in neglected and badly managed orchards.

I might make a farther remark as to the cultivation of orchards, especially old ones, as a case in point.

In the spring of 1866 I took much pains in bringing my old orchard into a better condition. Two of my neighbours, having old orchards, thought my "time and labour all lost on such old trees." The result is so far satisfactory, that in 1867 my neighbours' orchards were almost destitute of fruit, while mine was giving me a luxuriant crop—repaying me for my outlay more than four-fold the first year.

MR. D. W. BEADLE'S REPORT ON FRUIT AT ST. CATHARINES.

The strawberry crop opened with more than usual promise, the plants came through the winter in fine condition, bloomed abundantly and set fruit well. The dry weather unfortunately set in so early that the smaller vines on the trusses did not fill well, and the season of fruit was considerably shortened.

Of varieties grown the Wilson still heads the list for quantity of fruit, is most extensively planted for market, and esteemed by market gardeners as the most profitable variety.

The Triomphe de Gand has not sustained the great reputation given it by Dr. Knox, of Pittsburgh, the quantity of fruit falling so far below the Wilson as more than to counterbalance any enhanced price to be obtained for it in our markets.

The Golden Seeded is so very like the Triomphe that it is not worth possessing as a distinct variety. The plants are not very vigorous, and winter kill very badly.

The early French is not so very early after all, is very soft and unfit for transportation, and gives no promise of being valuable for market purposes.

The Filmore is a large, dark-red berry, interior white, and tolerably productive. It may be that on some soils and in some localities this variety will be valuable, but it does not seem to possess any qualities that will give it a preference for market over the Wilson.

Mead's Seedling is a good berry, of good size, long neck, light red colour, white inside, fine flavour, moderately productive. As a variety in a collection it will deserve a place, but of no value to the market gardener.

Monitor—the berries are imperfect, not high flavour, dry, of no very particular value.

Brooklyn Scarlet, is productive, late, not very large, flesh white, may be valuable in some localities. Agriculturist, bears some large berries, but is not likely to be valuable for market.

Jucunda has not been fruited long enough to speak decidedly. The fruit seems to be showy, and the plants bear well.

The Raspberries also suffered from the drouth, but there was a very good crop notwithstanding.

The Pilate proves to be a large, dark red berry, of good flavour and a good bearer.

Imperial is very like Pilate, and from the experience of one season does not show any marked difference from Pilate.

Sonchetti, is white, soft-tender plant and not high flavoured fruit.

Philadelphia.—From an experience of four years this variety has proved to be quite hardy, having stood the winters well. It is a most abundant bearer, medium size, good flavour, berry tolerably firm.

Naomi, is much like Franconia in form, size and colour of fruit; flavour good. It is said to be hardy, but I have not had it long enough to test that point.

Mr. Arnold has kindly sent me a couple of his seedling raspberries, of which I hope to be able to speak hereafter.

The crop of pears was not large, but the sample of fruit was fair, medium size and of good quality.

Kirtland is very fair, good size, bright cinnamon russet, but it rots badly at the core unless it is gathered early. The flavour seems to be quite variable.

Beurre d'Anjou seems to be a promising late variety, of good size and quality.

Brandywine, is a good summer pear, medium size, fine quality.

The crop of grapes was somewhat lessened by the dry weather, but the quality never was better.

Adirondac ripened fully by the 10th of September, quality very good, free from pulp, hanging perfectly to the bunch.

Israella ripens after Adirondac, very compact bunch, pleasant flavour.

Iona, hardly as early (this year) as the Delaware, bunches rather loose, flavour good.

Rogers' 15, ripens about with the Concord, is very pleasant flavour, good size, not much pulp.

Rogers' 3, ripens just before the Delaware, and seems likely to be a desirable variety.

Arnold's Hybrids.—I saw these in fruit on Mr. Arnold's grounds, and believe them to be very promising hardy sorts, that will endure the changes of our climate and ripen their fruit well, particularly Nos. 2 and 16.

Apples.—Crop not large, but quality of flavour very fine.

No new varieties fruited with me that I am prepared to say anything about.

