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THE
CANADA FARMER

VOL. I. No. 8. | TORONTO, CANADA, AUGUST 15, 1869. | NEW SERIES.

The Field.

Culture of Winter Wheat

A good wheat soil always contains a considerable amount of alumina (clay), but so balanced and corrected by other mineral ingredients, lime for instance, as never to become cold and sour. Freedom from stagnant moisture is another indispensable condition of a good wheat soil.

Deep ploughing, on most clayey lands, will assist greatly to render the soil dry and permeable to the roots of the wheat plant. The wheat plant is provided with two sets of roots, one of which spreads out near the surface of the soil, and gathers organic food for the sustenance of the plant; the other goes deeper down, supplies the needful moisture, and extracts the inorganic material that goes to form the bran and the flinty coat that gives stiffness and a hard outer covering to the straw.

The land intended for wheat having been duly prepared during the summer, by a summer fallow, or the cultivation of some preparatory crop, as peas, barley or clover, the finishing touch is given about a week before seeding time by a last reversal of the soil with the plough. This is a matter of some moment, and should be not only carefully done, but a due regard given to the requirements of the soil and the crop. If a sod has been turned over for the summer fallow, or pea crop, it is usually ploughed under to no great depth; at the cross plowing the implement is run deeper, so as to break up the hardpan and stir up the subsoil, and this raw material having been subjected to amelioration by a succession of harrowings and by exposure to atmospheric influences, the last turn of the soil before seeding should thoroughly intermix this with the now decomposed sod, and form a seed bed containing a due admixture of both mineral and vegetable food for the support of the wheat plant.

The application of manure is a very essential point to the successful culture of wheat. Land may be made too rich for wheat, or rather the manure applied to the soil may be in a condition that renders it unsuitable as food for the wheat plant. Fresh unfermented barn-yard manure is not desirable, while composted manures, or those in which decomposition has already been effected, can scarcely be given too largely. The practice, once so common, of applying fresh barn-yard dung to the wheat crop by turning it under into the soil at the last reversal with the plough preparatory to sowing the wheat, has been proved to be of very doubtful utility, and it is now generally admitted that the better plan is to compost the manure and spread it over the surface of the land on the wheat crop, either harrowed in with the seed, or applied at some time during the autumn, or early in spring when the snow melts, and before the frost is out of the ground, spreading it finely over the surface of the crop. This year there has been but little damage done to the wheat crop by its once so formidable enemy, the wheat midge, and there is good hope that this pest is fast disappearing, and that the old favourite varieties, like the Soules, and Blue-stem, that once yielded such large crops of beautiful grain, may again be largely grown with success; but still, in view of the fact that nothing is known yet with certainty as to whether the midge has had its day, or has only been kept back for one season by the unusual character of the weather, it will be well for farmers to still continue to sow largely of the best midge-proof varieties of winter wheat, such as the Diehl, Treadwell, or Michigan amber. Many new varieties have been tried this year by various parties who have imported seed from Europe or the States; but as yet little is known about them, and a single year's trial furnishes no conclusive evidence of success or failure. Some years ago we sowed in the garden a small sample of very fine wheat brought from Australia. It did fairly, and it seemed as if it would succeed; but the next year we had the produce sown in the corner of a wheatfield, on a light dry soil, and every plant was killed out by the frost the following winter—not one remained from which to raise a single grain If wheat is sown early, say from the last of August to the 15th September, less seed is required than if sown later. By using a seed drill, only one and a quarter bushels of seed per acre will be necessary; if sown broadcast, about one and three quarter bushels will be required. These quantities should be increased about ten per cent. for every week beyond the 15th of September at which the grain is sown.

In giving the last ploughing to the land intended for winter wheat, it is well to pay some attention to the lie of the surface and the nature of the subsoil. Where the land has not been underdrained, it will often prove retentive of surface water in certain spots. In ploughing for the last time, great care should be taken to make the ridges or lands somewhat narrow, and give a gentle slope from the ridge towards the furrow, and all the furrows should run diagonally across the natural slope of the land, giving a free outlet towards the lower end to all surface water. The lands should be harrowed only lengthwise, and as soon as the seeding is done, clean out the furrows with a plough, and with a handrake level down the slight ridge of earth then thrown out on each side. Then give a good outfall

for the water, by making an open drain across the bottom of the field, and, if necessary, one obliquely across the ridges, in the opposite direction of the outfall to which the furrows are drawn. Every pains should be taken to render the field as free as possible from being liable to retain surface water, otherwise much of the wheat may get badly winter-killed in the fall or early spring, and in its place chess, which is a kind of bastard wheat, will spring up.

Stacking Grain.

It is very uncommon in this country to see stacks of either barley or wheat, except in the newer settlements, where barn room is often insufficient to contain one-half the crops grown. This year, however, owing to the great amount of rain we have had, the grain crops are very heavy and stout in the straw, and it will take an extra amount of room to house them, so much so, that there are doubtless many, who, while having an abundance of barn room for all the grain crops they ordinarily raise, will this year be obliged to have recourse either to stacking some of their grain, or should the season prove favorable, can adopt the wiser plan of threshing out in the field as soon as harvesting operations are completed. Hay can generally be stowed away in lofts or outbuildings that would not answer for housing grain.

Oats or peas are frequently stacked, and do not require any very particular care to be taken in the operation of stacking, but with wheat or barley the case is different, as these crops are much more liable to suffer serious damage from wet storms or drifting snows.

Few farmers in this country build a good weatherproof stack, or one that can withstand our occasional violent storms and gusts of wind. In many cases, even when stacks are built, no care is taken to thatch them properly. They are too often built without any regard to either principles or appearance, and modeled after any shape, from that of a Dutch belle in hoops to the tall spire of an old-fashioned meeting-house.

The first point necessary is that the bottom should rest on a strong platform or foundation of timber, made of poles or scantling, sufficiently raised above the ground to allow of free ventilation under the stack, and preclude any access of moisture to the lower tier of sheaves in the stack. In building the stack, which should be circular, set up first two sheaves in the centre of the platform with their heads resting against each other; set two others, one on each side of these; commencing at the centre, pile round these a circle of sheaves with their butts sloping towards the platform. Each sheaf should be placed half its length beyond the one it lies on, until the whole layer is built out to the edge of the platform. The breadth of the stack at bottom should not exceed fifteen feet in diameter. As the layers are built up, the sheaves should be placed very firmly, with a slight slope from the centre towards the circumference, the butt ends outwards, and each outside layer should slightly overlap the last, till the stack is carried up to a height of thirteen feet above the platform, so that rain in running off the roof will drop clear of the sides. In laying the sheaves, the stacker should have the assistance of a boy, to hand each sheaf to him as it is forked up from the waggon, and after the first layer is set, he lays each sheaf on the hollow between two sheaves of the preceding layer, laying the band of the sheaf just to the butts of the layer above, and presses it in with his knees, working with the outside of the stack towards his left hand. Having made the stack nearly flat, up to the eaves, he now narrows in the circumference with each layer towards the top, and lays each course more to the weather, till he reaches so near the top that only four sheaves will lie, taking particular care to make the heart solid at the centre He finishes off by putting in four upright sheaves, with their tops closely tied together, and butts resting so spread over the last layer as to completely shed rain from it. To hold the stack firm, strong hay or straw ropes are now to be wound round the top both ways, crossing each other at intervals, and pinned into the sides at some distance below the eaves. The top of the stack, when completed, should reach to half the height above the eaves as there is of length below, or six feet to twelve, making the stack, when finished, 18 to 19 feet high.

As soon as the harvest work is done, and the stack settled, if it is not intended to thrash out immediately after, the roof should be well thatched. Grain crops being generally free from moisture, are little liable to heat; but should they be damp from a succession of wet days, it will be well to have a central opening from bottom to top of the stack to allow ventilation, putting a cap over the top to keep out rain. This may be easily done by placing a sheaf in the centre, and drawing it up as each layer progresses, leaving a vacant space where the ends of the sheaves come in contact with it in building the stack.

Varieties of Winter Wheat.

Mr. H P. Zimmerman, of the Zimmerman Mills, Nelson township, called at our office on the 12th of July, and left no less than eight samples of ears of different varieties of winter wheat, of which he has sixty acres now growing on his farm. They are particularly interesting as showing exactly to what point of the ripening process each kind had arrived at the date the ears were gathered, which from their fresh state we suppose was done on the 10th or 11th of July.

No. 1 is the *Soules*, a well known favorite white variety, that has of late years been so much subject to destruction by the midge as to yield but comparatively light crops. The ears measure five inches in length, are beardless, and flattened on two sides; the grain is now in the dough state, and the color of the heads is very pale green, almost white, while the straw is quite green.

No. 2 is the *Mediterranean*, a heavily bearded variety of red wheat, ears four and a quarter inches long, exclusive of beard, or seven inches inclusive, thin and flattened on two sides, grain a little harder than in the *Soules*, but both heads and straw still very green.

No. 3 is the *Wild Goose*, like the last a heavily bearded variety of red wheat, but with shorter and plumper heads, three and a half inches long exclusive of beard, six inches inclusive, grain milky and quite green, the latest ripening sample of the lot.

No. 4, *Red Chaff White*, once a greatly esteemed variety of white wheat, ears bald, four and a half inches long, grains yet small and in the milk, color of heads light brownish green, while the straw is dark green; the base of each ear contains several abortive grains.

No. 5, *Amber Michigan*, a midge-proof variety with short stout heavy heads, two and a half inches long, ears bald, slightly flattened on two sides, berry solid and nearly ripe, straw bright yellow, chaff very hard and flinty. A very fine variety, and said to be productive.

No. 6, *Bald Treadwell*, a new variety of white wheat, now coming into favor as being midge-proof and productive, ears bald and somewhat similar in appearance to the *Soules*, length three and a quarter inches, shape somewhat triangular, being largest at the middle, berry not quite so solid as No. 5, heads and straw light yellow.

No. 7, *Treadwell*; this is the variety that is properly the Treadwell wheat, of which so much has been said within the past two or three years as a new variety imported from Michigan. It is in every respect like No. 6, except in being bearded, but the beard is very light, some being beardless; not quite so ripe as No. 6, and some abortive grains are seen both at base and top of ears. Color greenish yellow, head four inches long inclusive of beard.

No. 8 *Diehl*, a new variety of red or amber wheat, approaching nearly to whiteness at times; now much sought after. There are evidently heads from two separate fields, as some are very short in the ear, nearly quite ripe and of a dark russet yellow color, while others are quite green with somewhat longer ears; heads from one and three quarters to two and one quarter inches long, quite bald, square-sided, very plump; berry very large, round and solid, covered with a hard flinty chaff of a reddish color, straw stout. This is to all appearance the best wheat of the lot, and the heads are unusually heavy in proportion to their size. It is said to have proved perfectly midge proof, but as we notice no signs of midge in any of the samples, the question of the immunity of each of the above varieties will hardly have a chance to be decided on Mr. Zimmorman's farm at least. From fifty to one hundred heads were sent in each sample, so that if any midge had been in the heads they could hardly escape detection. It is not often one gets the chance of comparing the merits of so many varieties of winter wheat grown on one farm, and under nearly similar circumstances, and we feel greatly obliged to Mr. Zimmerman for the interest he has taken in sending us the samples, and trust he will let us know the result of the yield of each after harvest.

Wheat and Clover.

To the Editor.

Sir,—I read Dr. Voelcker's lecture, the subject of your article, "Wheat and Clover," on page 215, vol. 1, No. 7, 15th July, 1869, in the Canada Farmer.

You quote the Doctor thus:—

"I have come to the conclusion that the very best preparation, the very best manure for wheat, is a good crop of clover."

You recollect R. B. Sheridan's witty and wicked critique of a member's laboured speech in the British House of Commons. "It contains something new and something true. What is true is not new. What is new is not true."

Clover is an excellent preparer of the ground for wheat. That is true, but it is not new. From remote ages the farmers in the south of England have sown their wheat in the autumn on their clover leys. But I will show you that the truth contained in the Doctor's position is only partially true. It is only in the south of England that wheat succeeds after clover. In the north of England it fails. In Yorkshire, Durham, and all northern counties, the farmer takes oats after clover. Sir James Graham many years ago tried to introduce the south of England plan on his Cumberland estates. He offered great inducements to his tenants. They sowed their winter wheat on their clover leys, and were half ruined by the unfortunate result. So much for the true (in part) that is not new.

Now for the new that is not true.

It will be new to all old country farmers to be told that "the very best manure for wheat is a good crop of clover."

As I have said, under some circumstances wheat after clover fails, and even in the south it is only on the light sandy soils that clover beats farm-yard dung. If that dung were rotten and solid it would beat the clover on the light lands too. To grow wheat at all on those lands it is absolutely necessary to make the land compact. A heavy bevelled iron wheel follows the plough and compresses the furrow, forming a hard-bottomed drill for the seed. If farm-yard dung, in the condition it is in when generally used by farmers, were ploughed into the light land, the "presser," as it is called, would have little effect, and the crop would be lost. On land of a moderate consistency, good heavy loam, the farm-yard dung would produce a much better crop than clover. And then all good farmers in the south of England top-dress their wheat. Some use guano, some soot—any ammoniacal dressing.

Hear the Doctor again:—

"We should naturally expect that clover, which removes so much nitrogen from the soil, would be greatly benefited by the application of nitrogenous manures; but the reverse is the case."

The reverse of benefit is injury; *ergo*, nitrogenous manures injure clover.

When I lived in Hampshire, in England, I had a neighbour, a farmer, who on one hundred acres of land kept twenty milking cows, a flock of sheep, and lots of pigs and horses. He was also agent in that district for Messrs. Gibbs & Co., who had the monopoly of Peruvian guano. One day the farmer asked me to look at his clover. We went into the field—one half of the crop was cut, the other half standing. He called my attention to a line which ran across the top of the crop that was uncut. The line was caused by a part of the clover being about six inches higher than the rest, and also thicker and bigger. The farmer said the whole of the field had had a good dressing of farm-yard dung, and the part that was so much better had, besides that, two hundred and twenty-four pounds of guano to the acre. Here was a fact that proved what every farmer knows, that clover likes nitrogenous manures, farm-yard dung for instance.

I have noticed these two points of the Doctor's address, because they contain a warning to farmers not to rely too much upon the chemist. The world owes much to chemistry, and if attainments could be made hereditary, and accumulate in families through generations, we might in time rely upon its dicta. Life is short, and much that a man learns dies with him. Therefore, up to this time, chemistry is only a faint shadow of natural history. Many demonstrated closet conclusions turn to fallacies in the open field. Chemical analysis of soils is in that sense utterly fallacious. Those given by Dr. Voelcker would be so. Scientific men, and especially Professors, are too much given to systematizing. They would bring the world under their square and plummet. There they go wrong. Nature has her own processes of assimilation that the chemist has not examined, will never be able to examine, and will never understand.

The wisdom of the world of agriculture has other sources than the laboratory of the chemist. I remember an old farmer in England who used to mix his fresh stable dung with unslaked lime. The chemist threw up his eyes and hands, and said "My good man, you must not do that; it is against the fundamental laws of chemistry. You will be ruined." The farmer said, "I know nought about that. I've always done so and I've always had good crops." The chemist tried again, and found that the farmer was right. I need not give you the chemist's formula on either side. The fact is all we want. Dr. Voelcker is in the same position on wheat and clover. He will have further experience, and then he will find that what he has stated absolutely is only true relatively.

In agriculture, the difficulty is to separate the practical in chemistry from the unpractical. A farmer may commit fatal errors by following the chemist implicitly. If he follow him systematically, continuously, and blindly, the farmer would die a pauper, indebted to his friends for his funeral—he would not leave money enough to buy him a coffin.

W. R. CARTER.

Heavy Alsike Clover.

To the Editor.

Sir.—I have to-day sent you a sample of my Alsike clover which I think will be hard to beat. There was a large breadth of ground seeded to Alsike clover in this locality last year. The summer was unfavourable for it, it being so very dry, consequently it did not get a large growth by the fall. Many who had sown it were fearful that the cold winter weather would use it up; but it did not injure it in the least; it came through all right, and will in most cases produce a very heavy crop of hay, and also of seed. In many fields that I have examined it has made a most remarkable growth. In the sample sent you, it varies from six feet to six feet ten inches. Farmers who have raised it this season will do well to let it ripen its seed and thrash it; as it then makes good hay, and they will get a number of bushels of seed to the acre, for which (judging from last spring) they will find a ready sale, next spring, and at good prices.

H. M. THOMAS.

Brooklin, July 22nd.

Note.—The samples sent us were very heavy and strong, measuring six feet nine inches from blossom to root.

Seeding Wheat Stubbles.

Two years since I sowed forty acres of wheat in one field. The land was good, and had been chopped about five years. The wheat failed, being all eaten by midge, and I only sold about sixty bushels of poor thin stuff, from the whole forty acres. This, I thought, would not pay, and I determined to seed down the next fall on the wheat stubbles, with timothy. After harrowing the stubbles well both ways, I sowed the timothy seed at the rate of about six pounds to the acre. It all came up as well as possible, but was unable to stand the winter following, and some of it died. In April I sowed about six pounds of clover, and put up the fences to keep out cattle, determinnd to give the young seed every chance. It grew very well, and most of the timothy, that seemed dead in the spring, at harvest was three feet high, and yielded about half a ton to the acre. Labor being very scarce and hay plenty, I kept the forty acres for fall feed, and finer or better I seldom if ever saw. This fully repaid me the cost of seed. Next year I expect to see one of the largest as well as the best fields of hay in Western Canada. I have tried all ways for seeding, and would advise every one to sow timothy and clover in the spring instead of fall, as the frost injures the young plants.

To produce the very best quality of meadow on new land where the first crop of grain, from any cause, cannot be sown and seeded down in the usual manner, there is no better plan than to sow direct on the new land amongst the stumps, and after dragging the land to prepare it for the seed, sow, and harrow in with a bush, dragging it both ways, lengthways and across. C.

A Cheap Fertilizer.

Col. Daniel Needham recently made a speech in the Massachusetts Senate, advocating the passage of a law providing against the sale of adulterated commercial fertilizers by requiring that they shall be analyzed, and each barrel, box, or package be labelled, upon which label shall be printed a statement of the constituent parts of the compound, and the per-centage which each constituent part bears to the whole mass—a law, which, by the way, is demanded for the protection of honest manufacturers, as well as purchasers. During his remarks he said that a most valuable fertilizer could be made by taking four barrels of ground bone, one carboy of sulphuric acid, and one of ashes. He said that the expense of this fertilizer would be only about $18 a ton, and that he had no doubt the fertilizer thus made would be as valuable as any purchased in the market for $40 per ton. He stated the expense substantially as follows; Four barrels bone at two dollars and fifty cents per barrel, $10; one hundred and seventy-five pounds sulphuric acid, $5 25; two barrels ashes, $2 50; total, $17 75. The process of mixing, he said, was very simple. He would take the ground bone, and after wetting it thoroughly, allow it to heat, which it would do in a short time, then pour on the sulphuric acid, and afterwards mix with the mass two barrels of ashes.

Upraising of Meadow and Pasture Lands.

The absolute upraising of meadow and pasture lands has often occupied the attention of those whose habits of observation have led them to attend to these matters. This is one great source of the drying up of lands after being cleared, that were quite wet and low previously. I have no doubt some of the readers of this article may question the fact of the upheaving, but if they will watch the gradual disappearance of stones whose heights are familiarly known in low meadows and pasture fields, they will no longer be sceptical on this point. An old friend once pointed out to me a certain stone weighing about three tons, that had gradually decreased its elevation above the ground, from three feet when first measured, to two feet when subsequently examined by me, after an interval of about nine years. He stated the fact as certain and well understood, but at that time it had been unobserved by me. Since then, (now about seven years since), I have often watched the gradual uprising or growth of wet low lands, and have been led to consider the probable cause. The fact once well established, and there is no doubt about it, we can easily apply it to our advantage. We all have noticed a certain piece of low black ash swale that was chopped some years since and left unlogged, on account of its being too wet and soft, and after allowing the natural grasses to accumulate into a tough sward, have often found that same piece of land, formerly so low and soft, now firm and comparatively dry, and it often proves, after being ploughed and worked, the most valuable portion of the farm. This growth or uprising of sod land is quite apparent in any garden, the borders of which are confined by nicely trimmed grass edges. In my own case, for instance, I am compelled to hammer and flatten with a heavy rammer all the edges down, every spring, and pare large portions off each side amounting to many wheelbarrow loads, to keep the turfy edges at all within bounds; they would otherwise get far too high and wide to be neat and sightly. You may perhaps say the stones in question have settled down into the earth; but that idea is absurd, as they generally have lain where they now are since the deluge, and during that time in a soft muddy bed, and yet they are still on the surface, whereas so soon as clearing is done and the land sodded well over, a gradual growth takes place all around, and the stones are partially covered. Some will argue that the contrary is shown to be the case in stony land, which often looks to the superficial observer to be quite free from stones, when after clearing, many appear; but this is due altogether to the rapid decay of the "humus" or vegetable deposit furnished by the leaves before clearing, which, when the source ceases, soon rots and is lost, and the surface up to that period sinks rapidly, thus exposing the stones formerly hidden, to be again in turn gradually concealed, as the growth of the sod land accumulates around the stone. C.

Note.—The elevation of the surface is no doubt due to the growth and accumulation of grass roots, which, in wet land especially, are long and tough.

Two-furrow Plough.

We clip from a Scotch paper, the Galloway *Free Press*, an account of a trial with a new plough, which seems to promise a considerable saving of time and labour:—"This new patent plough was exhibited at work on the farm of Dinvin, Portpatrick, in presence of a large number of the leading farmers in the Rhins district. The plough was commenced to work on a field of stiff clay land. It was afterwards shifted into meadow land, finishing up with a part of the latter field composed of hard, hilly land. On all these different kinds of soil it performed its work in such a satisfactory manner as to astonish, and draw forth the unqualified admiration of all present. Messrs. Jamieson, Logan, and Hardy, Mull of Galloway, were chosen from among the spectators to test the draught of the plough by the dynamometer, which showed that, while a single-horse plough of the ordinary construction has a draught of 4 cwt., the patent two-furrow draught plough, drawn by three horses, has a draught of 5 to 5¼ cwt. The advantages of the two-furrow plough over the ordinary one may be stated as follows:—One man and three horses in heavy soil, or two horses in light soil, will perform more work, and in a more efficient manner, with more ease to themselves, than two men and four horses; the work performed is more regular and even, and in stiff soil the furrow is better set up than can be done with a two-horse plough. Having neither sole nor side plate, the friction is reduced to a minimum—hence the lightness of draught—while at the same time the bottom of the furrow is not glazed as it is by the common plough. By the two levers the furrows can be made either deeper or shallower without stopping; are easily adapted to inequalities on the surface of the land, and for easily throwing the plough over fast stones or projecting rocks. It is well adapted for either lea-stubble or cross ploughing, and a great advantage in ploughing hill land, as a pair of horses can slip up and take the furrows down hill. So satisfied were the farmers present with the decided improvement and superiority of the new patent plough over all other ploughs, we understand a large number of them at once ordered one or more of the new ploughs from Mr. Fleming (of the firm of P. and R. Fleming & Co., Glascow, the patentee's sole agents for the West of Scotland), who was on the ground, and Mr. M'Clew himself, on whose land the trial was made, says he is satisfied he can save its price in about seven weeks, in its ability to go over more ground and do superior work,

The Clover Crop.

In an article in a previous issue of this journal, we gave some extracts from Dr Voelcker's lecture on the results of his chemical investigations for 1868, to which we cannot too earnestly refer our readers: the article may look long, and tiresome, but it is of the greatest interest and importance.

In a late article we mentioned a system which is now beginning to be extensively practised in the West, namely, that of allowing the entire clover crop of the first year after wheat (the clover being sown with the wheat) to go down on the ground without feeding or mowing, there to remain during the fall and winter, to be allowed to spring the following season, until in full flower, and then to be ploughed under with the entire results of the previous year's crop, as a preparation for wheat. This at first sight appears to be an extremely wasteful course, but Dr. Voelcker's researches show the importance of it, and also the benefit which must accrue to the land. As to the economy of it, by the loss of the land for one year, (that is the loss of the rent, and the cost of the clover seed,) we not only get the full benefit of the enormous mass of the best possible wheat manure, which exists in the clover roots, but we also get the entire mineral and nitrogenous matter, which would otherwise be removed from the two cuts of hay, or the one cut of hay and the second of clover seed. We get this without labour, which is the bane of Canadian farming, and without cost, except the rent for the year: and it cannot be denied that an equal amount of manure, which you thus put into, and on the soil, by the destruction thereon of the clover crop, could not be applied in so cheap a way by any other means. It may be said, that we also lose the profit which we should have made by feeding the clover; but if we are to believe Dr. Voelcker's theory and observation, the loss to the subsequent wheat crop, by feeding the clover on the ground, will fully overbalance the profit we should make from the animals to be fed on it. Let us suppose a farm of 300 acres cultivated on this system. We reduce it from ordinary cultivation into three portions of 100 acres each. The first year we have a crop of wheat sown down with clover, the second year we have the fields shut up, and the entire clover crop wasted on the soil; the third year, we plough in the results of the second year's growth, and the spring's growth of the clover, and prepare for wheat. One ploughing, and one dressing with the cultivator, and a good heavy rolling, leaves the land in the best possible order for a crop of wheat, which is then sown; the fourth year we have wheat again; so that for two years' rent, one ploughing, one cultivating, and the ordinary cost of sowing and seed, we get a crop of wheat, which, if Canada is ever going to be rid of the midge, ought at all events to ensure us forty bushels per acre. What plan of operations could be cheaper, or show a larger profit?

VECTIS.

Renovating a Worn-out Farm.

A correspondent at High Falls, Renfrew Co., writes to us asking information on this subject. He describes his farm as being of a loamy clay soil, originally good, but worn out by overcropping and bad farming, and says he is going to take it in hand and farm it himself next season, and would like to know how it is to be improved quickly and cheaply. He asks, would it do to sow buckwheat plough it under when in bloom, and again sow buckwheat, turning this second crop under in time to sow fall wheat. He says he is a new beginner, and if he is, we would say, he would begin quite wrong if he put winter wheat on such poor land as he describes, so soon, and then on top of nothing but such a mass of half decayed vegetable matter as turned under buckwheat. We fancy that the soil is not so poor as it seems; that, as usual with shiftless farmers, the surface has been but little more than scratched over, and the top stratum only has been deprived of a portion of its plant food. We should begin the work of amelioration by ploughing deeply, say to a depth of at least two inches below the present hardpan, in the fall if possible, if not, early in spring. If lime is to be had cheap and near by, we would then top-dress the surface with lime and harrow it in, at the rate of twenty-five to fifty bushels per acre. Get some of the land into good enough tilth early in spring, to be seeded down to clover, and the rest of it sow with peas, or lay by to be summer fallowed and still more deeply worked. Sow the portion to be seeded down, with at least half a bushel of clover seed per acre, sown about the 30th April, and immediately after, and without covering the seed in any way, sow on the soil a mixture of equal parts of gypsum (plaster of Paris) and unleached ashes, allowing from two to three bushels of the mixture to the acre. If the ashes are not to be had on the farm, buy them from the neighbours, who will but give them away for soft soap. This will be the best portable manure that can be supplied cheaply to start the clover with, no other crop occupying the soil, and with a good catch and fair season, we anticipate that by September the ground will be covered with a heavy growth of clover, which may be allowed to lie and rot down on the soil the following winter. The season after, the land may either be used as a clover pasture, or be ploughed and sown with peas, followed by fall wheat, that again seeded to permanent grass, to remain such for several years, to allow the land to rest and recuperate. If it is desired to put the land in fall wheat so soon as next fall, we should sow rye early this fall, turn it under in spring when about just high enough to be covered in by the plough, sow peas on that, harvest them, and by fall one cross-ploughing would intermix the decayed rye stalks with the soil and prepare it for fall wheat, which could then be top-dressed with finely composted manure, either in the fall or early spring, before frosts come out of the ground, and the land can then be seeded down to permanent grass.

Winter Barley.

We must, in Canada, have another winter or fall crop. The failure of our fine winter wheat, which may now be considered as settled since the midge has left no portion of Canada unvisited, calls imperatively for some substitute. Our midge-proof wheats are a great boon, and we are and ought to be very grateful for them, but we want something else. Any fall wheat, to be successful, must be sown very early, certainly not later than the first week in September, and it ought to be all sown by the first of the month if rust is to be avoided. For the purpose of, obtaining a crop which may be supplemented to wheat, we shall have to look to winter barley, and we believe that there are kinds of that grain which, if properly tried, would succeed. We have now before us a catalogue of seeds issued by Raynbird, Caldicott, Bawtree, Dowling & Co., limited, of Basingstoke, England, who advertise no less than four kinds of this grain, some of which would, no doubt, succeed with us in Canada. The sorts are as follows:—

No. 1: a variety of Chevalier Barley, two-rowed, suitable for planting in England in November and December.

No. 2; Winter Barley, four rowed.

No. 3; Winter Barley, six rowed, known as Bere in Scotland, and, much grown in England as green spring food for ewes and lambs. In the neighbourhood of all cities and towns it is grown for this purpose, sown with winter vetches and tares, and produces enormous crops of green food, and is there sold by the square yard, and cuts out almost solid. It is there grown on the market gardens when they get too rich with constant manuring to grow certain crops. It smothers everything else.

No. 4; the Hertfordshire Hero Barley, a six-rowed variety of Winter Barley, with long and very stiff straw, and coarse grain, it is very productive.

In addition to these winter kinds of barley, we have also advertised, besides common rye, "Giant Rye," earlier and of a larger habit of growth than the common sort.

Another winter crop is the winter or Tawny Oat, grain dun-coloured, weight about 42 pounds per bushel; stands without injury through the winter, ripens early, and is largely sown for early spring feed for all animals. They might become a dangerous weed.

Now, some or all of these would surely succeed with us if properly tried; and we heartily commend a trial of some or all of them to our enterprising agriculturists.

Japan Clover.

In the *Michigan Farmer* of July 3rd, there is a notice, taken from the *Home Journal*, of this new species of clover. As its peculiar excellence, it is claimed that it will grow on any land, on barren or good soil, on the sides of ravines or old roads—in fact, anywhere; and more than this, it is spreading spontaneously throughout the State of North Carolina, gradually but surely in all directions. It seems peculiarly adapted to the fattening of cattle and horses, and is so abundant and rank in its growth as to threaten extermination to many of the weaker and more worthless grasses.

If all this is true (and the authority quoted seems positive about it), this clover will be a boon indeed for our northern climate, as it is expressly claimed for it that it grows better in the shade as wood pasture than in the sun. We have long wanted some species of clover or grass with which we could seed down our wood pasture, and especially one that will spread itself without re-seeding. Wood is gradually but surely passing away from the face of many portions of the Dominion of Canada, particularly the Western division, and the preservation of the remainder would be immensely assisted by some clover, such as the Japan variety, that could be sown and the produce used for pasture, thus avoiding the necessity of clearing off the wood entirely for the sake of pasture.

But the most important view to be taken of its use is that it if will grow in the woods, or even in places partially cleared, there would be a great safety from accidental fires spreading in the bush, which often in one year destroy more timber than legitimate consumption would in ten. We in Canada should most heartily welcome such a clover, and I trust that some person in the States will be induced to send at least a small quantity of seed for trial here, believing that if the excellencies of it as stated are correct, it will form a most valuable acquisition. C.

The Leaching of Soils

There is one point of great interest in Dr. Voelcker's researches, which is highly suggestive, namely, that nitrate of soda—now used throughout Britain by thousands of tons annually, and which is, next to clover, the best possible wheat manure, always excepting, of course, barn yard manure, which in itself unites the virtues of all artificial manures, the only fault being that you cannot get enough of it—that nitrate of soda can only be applied in a profitable manner at one period of the growth of the crop, namely, just when the fibrous roots are hungry to supply the growing plants, and when the growing plant is ready to receive it. The salt must during this period be in a state of solution in the soil, and then the plant readily feeds upon it, and is greatly benefited but if the nitrate of soda is sown during the first period of the growth of the crop, before the plant wants it, or is ready for it, and while the leaching operations of the rains of winter and spring are going on, the nitrate will be actually leached out of the soil, and pass away and be lost in the escape water from the drains. So also, if more is sown than the plant wants, or can assimilate, the nitrate does not remain in the soil like phosphates, and the amount of ammoniacal manure which unites naturally and chemically with the clay, but is lost, and is carried off by the waste moisture of the land. This is one of these new and startling facts which can only be known by the combination of practical knowledge of the working farmer and of the chemical knowledge of the laboratory chemist. The practical farmer, finding that nitrate of soda did wonders for his crop, would naturally think he could not apply too much of a good thing, the only bound to which would be the expense; and even there would comfort himself with the idea that if he did not get it in this crop, he would in the next, as his experience with bone dust and other phosphatic manures had led him to believe; whereas the fact would be, that if he applied the nitrate in too great a quantity, or to crops which did not want and could not assimilate it, the action of the succeeding winter's rains, and any period of wet weather, would leach and penetrate the soil, and carry off, with the surplus water, the expensive manure which the farmer had so assiduously applied. The chemist, by his analysis of the drain water, would see that nitrates were passing off, and would at once know, from the treatment the land had received, whence the loss came.

If this is true of nitrate of soda, it may be that other matters which we so assiduously and at great expense apply to our soils, may be passing off, and becoming waste with the waste moisture of the land, while, for want of chemical examination, we have been ignorant of the fact. No one can examine too closely into these matters.

Sowing Seed Wheat.

We would impress upon farmers the importance of a little care and trouble in saving the seed of such varieties of winter wheat as they intend to sow themselves the coming fall. It will often be noticed that some fields are ripe earlier than others, and that portions of a crop of wheat, from some seemingly accidental cause, perhaps, come into ear and ripen before the rest of the crop. These should be cut and put aside for seed. Another thing, even when the crop ripens up pretty well together, it will be noticed that the centre of the ridges, where the plants were higher and drier, often bear wheat of a better and more productive quality, with larger and heavier heads, well filled with grain, than what grows nearer the sides of the ridges or over the furrows. It would be no difficult matter to set a man to work with a cradle, a day or two before the field is to be reaped, to cut a swath of the best of the wheat along the centre of several of the ridges, in the best and cleanest portion of the field, and when these are bound up have any weeds carefully picked out and thrown aside, and the sheaves set up by themselves, to be stowed away separately from the rest of the crop when the field is cut. The extra work would but amount to a day or two for one man, and would result in giving, from year to year, a gradual improvement in the crops on the farm.

Red River Vetch.

To the Editor.

Sir,—As one amongst thousands whose thoughts have been recently turned towards the new territory in the North-west, now opened for colonization, and in due time, doubtless, to be incorporated with the Dominion of Canada, the writer has perused with peculiar interest the accounts published in the *Nor'Wester* of that beautiful country, and after making due allowance for the preference which all residents have for the place in which their lot is cast, and where their interests lie, I must come to the conclusion that the territory is a fair land, with a healthy and pleasant climate, and with many advantages which other western portions of the continent do not possess.

There is, however, one point of peculiar interest to Canadian farmers, which, so far as I have been able to see, has been nearly passed over, and which is only mentioned by one writer in a cursory manner. I mean the Wild Pea, or Vetch, which covers some parts of the prairies every year, and which all who know anything about it speak of so favourably as spring and summer food for cattle.

Such a wild pea or vetch as this is one of those things in which our Canadian agriculture is entirely deficient. The winter vetches of the old country will not survive our winter, nor will their seed, as a certainty, lie in the ground during that season and then come forth in the spring. Spring vetches are too late, and with us come in for cattle feed when we have plenty of other kinds of green fodder.

Perhaps some resident or competent visitor in the new country will favour us with a full description of the prairie vetch. Is it perennial or annual? Does it survive the winter in a green state amongst the vegetation of the prairies, or does it grow from the root each spring? Does it stand in open and exposed places without the help of other foliage? And is it likely to bear cultivation?

It would also be interesting to know if there are any other plants perennial in the North-west that would be suitable for this

part of the Dominion, and help to make forage here more abundant.

Perhaps this may meet the eye of the editor of the *Nor'Wester*, and induce him to give, through the columns of your journal, the desired information. If, in addition, a small quantity of the seed could be sent, say to your office, it would afford the opportunity of testing the adaptation of the plant to our climate, and might be the means of introducing amongst us a most valuable aid to our agriculture, for which the introducer would be entitled to grateful remembrance and honour as a national benefactor.

VECTIS.

Items of Agricultural Experience

NO II.

11. A careful saving of the seed of every crop grown on the farm, paying attention to gather that which is clean, plump, and earliest ripe, each year, will result in improving the average yield of the crops grown, and reducing the length of time between seed time and harvest.

12. Barn-yard manure has a much greater value when applied to the crops after being composted than when in the fresh state.

13. All concentrated manufactured portable manures, such as guano, bone-dust, &c., are best applied sparingly every year near the surface, and well incorporated with the soil before the seed is sown.

14. A judicious system of rotation of crops is the sign of an intelligent farmer.

15. Root crops require deep ploughing, heavy manuring, a thorough working of the soil, and good after culture; and then leave the land in fine condition for grain, to be seeded down with grass or clover.

16. Barley succeeds best after roots, and requires a rich mellow seedbed, and a dry or well drained soil.

17. Indian corn and potatoes gain more from good cultivation than manuring.

18. Grain crops gain nothing by being cut before the ripening process is well advanced.

19. Clover and grass make better and more nutritious hay if cut early, and well and quickly cured in the shade, rather than dried out in the sun.

20. The character of a man is known by his surroundings: and a nicely cultivated, well fenced, trim kept farm, with good buildings for his crops and stock, indicates a farmer that makes farming pay, and at the same time is not ashamed to be considered a gentleman, and is always willing to help the poor, and be just to all.

Experiments with Varieties of Wheat.

My object in sowing the different kinds of wheat this year was chiefly to test the liabilities of each kind to the midge; and also to see whether a wheat stubble field of which the soil was a poor blowing sand, if well manured, and sown again direct, would produce a crop.

The different sorts were White China, Soules, Treadwell, Kentucky White Midge-proof, Mediterranean Midge-proof, club-shaped ear (name unknown), and common red midge-proof. The Treadwell does not seem any earlier than either the White China or Soules; the Kentucky White was almost all winter killed; having sown it now three years I would not advise any one to do so hereafter. The Soules, of course, is as usual excellent; the club-shaped ear also good; the White China also: but the Treadwell is best of all. The other sorts, although very rank and tall, have badly filled heads. No midge has made any perceptible inroads on any of the seven varieties. The wheat is so thick and heavy, that a rat could hardly run through it, and stands as high as my head, and I am five feet ten inches high; the straw is very stiff, and although so rank and thick, is not lodged, but to all appearance could be cut well with any machine. Judging by the appearance of the crop as it stands, the probable yield has been estimated by the best judges at thirty-five to forty-five bushels per acre. The experiment most satisfactorily proves that wheat can be grown on poor sandy land, provided it is well manured, for the land in question is the subsoil of perfectly sandy land, and with lime would absolutely make good mortar; but it has been plentifully manured now for two successive crops of wheat—the second sown directly on wheat stubble after the first, but with plenty of manure. The straw is like reeds, very stiff, and from the first looked well. The young plant, sown on the 11th September last, throve wonderfully, and was as thick as a mat before snow fell, never having been affected by the winter until about the 28th of March, when the ends of the leaves were killed, but the hold the plant had on the ground seemed to prevent its being injured by frost, although the land is very subject to heave with it. There is no rust of any consequence. If the birds will allow it to ripen, I will after harvest write full results as to quality. At present, the end for which the wheat was sown is quite answered, and any failure of the crop now must be due to the season, and not to the wheat or the land.

C.

Capacity of an Acre.

Edmund Morris writes a letter to the *Hearth and Home*, showing the vast appreciation in the value of land in New Jersey, and the profits derived from small farms. We quote:

Long experience in a thousand places has shown that an acre of land can be made to pay the interest on a very large sum. Mr. Leonard, of Monmouth, obtained from asparagus the interest of $5,000, and from grapes the interest of $7,000 per acre. Both these may be regarded as standard crops, not liable to casualty, especially asparagus. In our neighbourhood some remarkable results have been secured from standard fruit crops. There is an acre of blackberries on the farm of Mr. Dulty, which has produced the interest of over $8,500 gross—no doubt of $7,000 net. The owner of a three acre field of purple cane raspberries told me that his sales in one season produced him the interest of $25,000 gross. Large fields of even perishable strawberries have been made to pay the net interest of $1,500 per acre. There is a field of two and a half acres of blackberries near me containing twenty-six hundred plants, which last year produced the interest of very nearly $30,000 net. There can be no mistake about this last crop. But it was altogether exceptional, not likely ever to be repeated, as berries were then high, and while other growers had few or none, this field bore abundantly.

Thus the capacity of an acre well cultivated in certain crops has been ascertained with tolerable definiteness. But its money capacity is governed by its location. It would be utter folly to produce any of these crops where no market for them existed. Land producing such returns is cheap at $300; and it is for this reason that some New Jersey farms are better bargains at that figure than Southern farms at only a tenth of it. The value of land is to be measured by its productiveness, not by its price.

Hay in Wet Weather.

The *Country Gentleman* hears of many farmers who could not get in any hay, during the showery or 'catching' weather of this season; and is told of one man who is not supposed to be much of a farmer, but put from three to six tons of hay in good order into his barn, every day for a week. There is no secret in the process. He put up the hay in cocks and put canvass caps over them, thus shedding the rain. Then when the weather was clear again, off went the caps and the hay opened to the air and sunshine. The caps he used were made out of old bags and cost about 15 cents each. But much higher priced bags would pay well on the investment when wet weather continues.

Hops in Wisconsin.—It is thought that two-thirds of the hops in the neighbourhood of Reedsburg, Wisconsin, will be left uncultivated, and much less labour than usual will be spent upon those that are poled. The aphis has made its appearance there and at Baraboo.

The fact that strong loam, in a tolerably dry state, will absorb and hold the fumes of yard manure, in alternating layers in common compost heaps, shows that manure well mixed with or turned under the soil, may be applied to loamy land in much larger quantities than is often done in practice, without danger of passing off in air or of being washed out by rains.

The Dairy.

Packing Butter.

It is too early in the season yet for farmers' wives to commence packing their butter, but it will not be long before cool weather comes on, and we wish to impress upon them the desirability of conducting this operation in a nice, clean, business-like manner.

In the first place, we must emphatically warn them against using firkins or tubs made of pine, which we notice is becoming too common. The idea of using pine originated with country storekeepers, who generally furnish the package to the farmers' wives to fill, and desire to go to as little expense as possible rather than to give the butter maker a good name in the market. Use stone jars or crocks for packing butter for home use, or to be sold to neighbours or to city consumers. When wooden packages are used, have them made only of the best seasoned white oak, maple, or any kind of good hardwood. Pine or any kind of resinous wood, however well it may be seasoned, scalded, or whatever else is done to it, will still give a bad flavor to butter when used as a package: the salt in the butter seems to draw out the resinous flavor from the wood at some time or other after the butter is put in. We should imagine that so cheap and strong an article as glass could be made much use of for the purpose of making butter packages. The glass works at Hamilton or Montreal ought to try the experiment of introducing such an article, in which case the jars could be made of cheap material, of sufficient thickness to stand the usage they would be subjected to.

Let the farmer get his own packages made, and if he is desirous of becoming known as the maker of a first class article of butter, let him have his name and address burnt into every package he uses. The cooper, or whoever makes them, generally keeps, or should keep, letters on hand, to use for that purpose; if not, they can easily be procured from a hardware store or a stencil cutter. Let the butter be well made and of equal quality throughout the package, and carefully packed down without kneading; a ladle made of hardwood should be used, and in no case should the hands come in contact with the butter during any part of the process of making, or in packing it. Having made a first class article, and packed it well and properly, the next thing is to dispose of it; and we think the farmers' wives who make a really first class article will find no trouble in obtaining a good price for it from any of the large houses in the produce trade, or from discriminating consumers of the article in our larger cities and towns; and when once they have acquired the name of making good butter, their make will always sell well to the same dealer.

Curing Rennets.

Many salt down the rennets in a cask or tub. It is a very bad practice, and has been the cause of great mischief in the dairy. The trouble with salting down rennets and packing a considerable number together, is this: If one diseased or bad rennet gets into the cask, it communicates its taint to the whole mass, and the leaven once having been added, develops with wonderful rapidity so soon as circumstances become favourable, and these circumstances do become favourable when the rennet is added to the milk at a temperature so high as 80°. We have frequently urged that rennets should only be saved from healthy calves—calves that have been allowed all the milk they will take for at least four days, and up to within some twelve or fourteen hours of slaughter.

A calf that has been starved will have a diseased and inflamed stomach, and if it is used for cheesemaking it will most assuredly impair the flavour of the cheese. A good healthy stomach having been selected, the contents should be emptied out and all specks wiped off. Then it should be either blown up like a bladder, or slightly salted and stretched on a forked stick, and hung up in a dry atmosphere, only moderately warm. Some cheesemakers prepare rennets badly by soaking in wooden casks or barrels. There are many tons of cheese spoiled in flavour every year simply on this account. It is almost an impossibility to keep a wooden vessel sweet that has been used for steeping rennets.

Rennets are more efficient when steeped in whey, but the whey should be free of taint in the first instance, and then freed from its albuminous matter. Rennet does not act on the albumen of milk, and this nitrogenous constituent passes off in the whey. Albumen coagulates at a high temperature. By heating the whey to boiling, the albuminous matter coagulates and may be skimmed off. This should be done soon after drawing the whey from the vats, and before it has begun to ferment and putrefy.

When whey is used for steeping rennet before it is freed from albumen, it is often decomposed and putrid, and a very dangerous ferment is therefore added to the milk, which carries a taint to the cheese. Some people save the whey that runs from the press, in which to steep rennets. This is a very bad practice. On putting cheese to press, a whitish milky substance often flows out at the first pressure. This whey is probably highly charged with albumen.

The whey having been freed from its albumen, if set aside, makes a very sharp acid, and is altogether the best liquid for steeping rennet that has as yet been discovered. It is this purified whey also that should be used for developing an acid condition of the curds when necessary.

After the rennets have been soaked and rubbed to extract their strength (and this will occupy several days, the rubbing being performed at least three of four times); the liquor should then be strained off into a clean stone cask or rennet jar, and is fit for use. The rennets are then to be put to soak again with whey as at first, and are rubbed from time to time until their strength is exhausted. They may then be taken out and washed in whey, the liquor added to that in the jar, and the rennets thrown away. It is not a good practice to add new rennets with those that have been soaking, and thus keep a batch of rennets in soak during the whole season, as there is more liability of their becoming tainted, and when their strength has once been exhausted, they are useless in the rennet jar, and it is better to have them out of it. When sour whey is used for steeping, but little salt is needed. The rennets should not be allowed to float on the whey. By using a large stone crock cover, they may be kept at the bottom of the whey.

We hardly need to add that rennets should be daily examined while soaking, and the liquor stirred to keep it sweet and free from taint. Nor should the liquor be used from the crock where rennets are steeping before being strained through a fine cloth, as small pieces rubbed from the skins get into the milk, and are worked up into the curds.—X. A. Willard in *Western Rural*.

Preparing Rennets.

In putting rennets to soak, care should be taken not to allow any tainted ones to get into the batch. When they are packed in salt, it is not difficult to make a selection. If the poor rennet does not smell, it will be pretty likely to be discolored and unhealthy-looking, instead of having a whitish, wholesome appearance. All rennets thus discolored should be thrown away as worse than useless—as positively injurious. If the rennets are dried, it may not be so easy to detect the poor ones before putting them to soak. After soaking their quality will be quite apparent: but much of their injurious effect may be avoided by promptly rejecting them without rubbing. It is generally understood that diseased or tainted rennets produce both huffy and bad-keeping cheese, by the introduction of decayed animal substances. It certainly cannot improve the quality of the cheese to mix it with the broth of carrion.

Clear whey is the common and best liquid for soaking rennets. Water was once and is now sometimes used, but it needs to be very soft and pure, and improved by boiling. We have never tried water, but it is asserted by those who have used it for soaking rennets that a batch prepared with it will not keep sweet as long as one prepared with whey, but that boiling the water keeps it sweet longer than it will keep if not boiled. We think the purer the whey the better, and therefore prefer that which first separates from the curd after setting. Some are not particular, and some prefer the salt whey that runs from the presses. There is a saving of salt in this, but we think this liquid cannot be as good to introduce into milk as that containing less cheesy and buttery particles. Boiling the whey and skimming it afterward, allowing it to cool and settle, that the sediment may also be excluded, is said to be a great improvement, and we can easily believe this to be true. It is not only free from impurities, but

it forms a sharp acid that acts readily upon the rennets and extracts more completely the pepsin, gastric juice, or whatever it may be that coagulates the milk. It is said that quite a saving in rennets can be effected by using scalded whey for soaking them.

Twenty or twenty-five prime rennets put into half a barrel of whey will make a good preparation. It can be made stronger, of course, by the addition of more rennets, or pouring in a less amount of whey; but it is questionable if the entire strength can be extracted by using a less quantity of whey in proportion to the number of rennets. They need to be rubbed at least three times, each time in a new batch of whey. The second time the preparation will be found about as strong as the first. The third rubbing and rinsing may be in fresh whey, to be used for soaking a new batch of rennets. We like to have two tubs or jars for soaking the rennets, one for the first and the other for the second rubbing alternately. After rubbing the second time put the rennets in a sack made of strainer cloth, to keep them separate, and soak them with the batch intended for the next second rubbing. In this way the strength of the preparation from the second batch will be equal to that from the first. Rub the third time, and rinse in fresh whey, as before indicated, when the strength will be found completely extracted. If dried rennets are used, it will be necessary to add salt to the whey when the batch is put to soak. Every time new whey is added, more salt will be required. Where the rennets are packed in salt there will usually be salt enough for the first soaking adhering to them; if not, it may be increased in quantity by a few handfuls of that loose in the barrel in which they have been packed. As the rennets will float on the whey, they should be thoroughly stirred up as often as night and morning, and a little salt sprinkled over those left on the top.

We prefer stone jars, both for soaking rennets and to keep the prepared rennet in, because they are so much more easily kept sweet than wooden tubs can be.—*X. A. Willard, in Utica Herald*

The Cheese Crop.

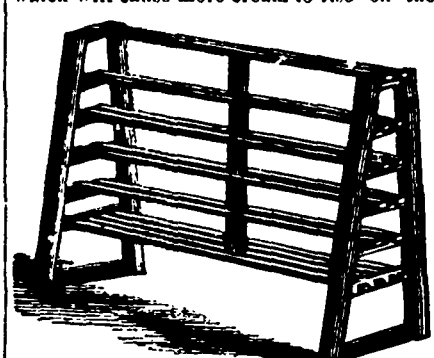
The Utica *Herald* of the 6th July, has a two column article on the cheese crop, as made up from returns from the factories in New York State, Ohio, Vermont, Massachusetts, Illinois, Wisconsin and Michigan. Two hundred and twenty-four factories were heard from, whose product up to the 1st July is set down at 179,024 boxes of an average weight of 64 30-100 lbs. Of this amount, 80,210 boxes have been sold, leaving on hand 98,814 boxes. They daily make the 224 factories is 3,785, or an average of 16¾ for each. The *Herald* estimates that in the United States and Canada there are one thousand factories, whose product is 117,250 boxes a week, though this yield will probably fall off some 1,500 or 2,000 boxes weekly as the season advances. In relation to the stock on hand, the *Herald* says:

It will be seen, by the figures that we present, that the stock on hand is considerably larger than what has been sold. There is probably as much May cheese back as has been sold of June cheese, so that we may safely estimate the entire June make as waiting for a market. There are now not far from 430,000 boxes on the ranges, as the average number each of the 224 factories from which we have returns, have on hand, is a fraction over 432, which for 1,000 factories would give 432,000. Whether there were more than were on hand last year at this time we are unable to say. The make has unquestionably been larger, but the sales have been larger also, as factory-men have sold as fast as possible in anticipation of a general decline in prices. Last year they were holding back for a rise. There was a large stock of old cheese on hand last year, and very little this; but consumption, owing to high prices has been much less at home and abroad, than it was then. As prices come down, we may reasonably look for an increased consumption and a better home demand.

In making the estimates of the amount of cheese in the country, it must be borne in mind that our figures do not include any of the farm dairies, the stock of which must be added to the total factory stock on hand. Another item it is well to consider. Our estimates are for the whole country and Canada; but most of the Western cheese finds a southern and home market. One large Ohio firm writes us that about half their cheese sold this year has gone south and west; the balance has come east. This is the first season, we believe, that Western cheese has found an eastern market to any considerable extent.

Milk and Provision Rack.

The *Country Gentleman* gives a cut, which we have copied, of a very simple and easily constructed rack for milk and other provisions. It is preferable, however, to keep milk by itself. The cut represents a rack which will hold many pans of milk of large size, with a free circulation of air around each pan, which will cause more cream to rise on the



milk than if set on the cellar bottom. It takes up but little room, and can be taken apart to wash or move to any part of the house, and with this article it is easy to guard against ants, emmets, mice, or any other kind of vermin, which are a pest in many houses. The mode of construction is sufficiently clear from the illustration.

We have for more than twelve years used an equally portable contrivance, consisting of a kind of safe with wire gauze on four sides, the top and bottom only being of solid wood—the ends, back, and front forming separate frames. The whole is fastened together with screws, so as readily to be taken apart; the shelves are movable; the wire gauze painted, to prevent rust. We have one for milk only, and another for meat and other provisions. The gauze admits a free circulation of air, and excludes flies; the use of ice renders it still more serviceable in hot weather.

Cheese Making in a Small Way.

Mr. X. A. Willard, in the *Western Rural*, gives the following directions for cheese making on a limited scale and after a homely fashion, which may be of service to beginners in Ca[illegible] as well as in the Western States. H[illegible] s:—

Let us see now how cheaply we can arrange for a primitive dairy. If nothing better is at hand, a common washtub, clean and sweet, will answer the purpose for setting the milk and working the curds.

A hoop must be had from the cooper. Let it be 10 inches in diameter top and bottom by 12 inches high, and fitted with a follower. A very good press may be made in a few hours from a 12 foot plank and some pieces of scantling. About a foot from each end of the plank, set up two short pieces of scantling 4½ inches apart. Fasten them firmly to the plank with bolts or pins. The lever may be a joist 4 by 4 or 4 by 6, and 14 feet long. One end is to be secured by a pin passing through the uprights at one end of the plank, and it is to move freely up and down between the uprights at the other end. A weight hung at the end of the lever, and you have a press that will do good service.

Your milk having been placed in the tub and the number of gallons known, a portion may be taken out and heated in pans over a common stove. The pan holding the milk should be set in another pan holding water, or over a kettle with water in it, so as not to scorch or burn the milk in the pan. Heat the milk and pour into the tub until the mass indicates a temperature by the thermometer of 85°. Then add a quantity of rennet (which has been previously prepared by steeping the dry skins or rennet in water,) sufficient to coagulate the milk say in 40 to 50 minutes. Now put your finger into the curd, raise it slowly, and if it readily splits apart, the mass is ready to cut into blocks with the curd knife. After cutting into checks two inches square, let it remain at rest ten to fifteen minutes for the whey to form. Then carefully break with the hands by lifting up the curds very gently, and when the mass has been gone over let it rest for ten minutes for the curd to subside. Now dip off a portion of the whey into the pans and heat on the stove in the same manner that the milk was warmed. In the meantime continue breaking the curd by gently lifting until the particles of curd are about the size of small chestnuts or large beans. Then pour in the warm whey and continue heating and adding the warm whey until, the mass indicates a temperature of 98°.

Do not be in a hurry, but take things leisurely, continuing the breaking or stirring the curds while heat is being applied. It may now be left at rest for half an hour, then stirred so that the particles will not adhere and this treatment continued until the curd has a firm consistency. Take up a handful and press it together in the hand, and if on opening the hand it readily falls to pieces it is about ready for draining. Throw a cloth strainer over the tub and dip off the whey down to the curd. Then put the strainer on a willow clothes-basket and dip the curd into it to drain. It may now be broken up with the hands, and when pretty dry returned to the tub for salting. Salt at the rate of 4½ ounces of salt to 10 pounds curd; mix it thoroughly and put to press. After remaining from 2 to 4 hours in press, turn, and put to press again, leaving it under pressure until next morning, when it may be removed to the shelf.

Veterinary Department.

Ringbone in Horses.

As we are frequently asked the question, can a ringbone be cured, and as a great many remedies are recommended for the cure of this prevalent and troublesome disease, we will give a short description of the nature and causes of ringbone.

Ringbone consists in a bony growth, technically called *exostosis*, extending around the lower part of the limb—hence the name ringbone. The situation of this osseous disease is immediately above the hoof, involving the pastern joint, and not unfrequently extending to the fetlock joint. In cases of long standing the motion of the pastern joint becomes completely destroyed, and the union of the bones takes place by an abnormal growth. This is called the process of *anchylosis*. Ringbone may either affect the fore or hind limb, and generally proves a very troublesome disease, and in very many cases produces lameness. In Canada Ringbone is a very common disease, and in many instances can be traced to hereditary tendencies, as certain breeds are very liable to be affected with osseous diseases generally, and ringbone in particular; and as long as ringboned horses and mares are kept for breeding purposes, this disease will continue to increase. There may be exceptional cases, where the disease is the result of injury, that a mare affected with ringbone may bear strong and sound progeny; but in nine cases out of ten, the progeny of ringboned mares are apt to be affected with ringbones, sprains, etc; and in proof of this how often do we see colts affected with ringbones when they are young, long before they are subjected to work. We therefore unhesitatingly assert that the great cause is hereditary predisposition, or faulty conformation. No doubt there are also immediate exciting causes, as rapid driving, and rough usage of any kind.

Ringbone is easily detected. It shows itself as an enlargement extending around the pastern joint, and when forming is usually accompanied with lameness, the lameness being increased by pressure or flexion of the joint. In severe and continued cases, the whole muscles of the limb waste to a great extent, and the horse loses condition from the extreme pain.

The treatment of ringbone generally is very unsatisfactory, and it is an incurable disease in so far as removing the bony growth, though curable in some instances in so far as removing the lameness. The horse should have rest, and the joint be kept as easy as possible, and cooling or soothing applications should be used for some time, after which blisters may be used with good effect. One of the best and safest applications is the biniodide of mercury; the hair to be cut off the enlargement, and the biniodide of mercury ointment applied. The actual cautery, or firing iron, in some cases is necessary, and after either firing or blistering, the horse should be kept from work for a lengthened period, and it is generally necessary to blister at intervals of ten or fourteen days.

Strangles in the Horse.

The name usually applied to this complaint is Distemper, although the term distemper is applied indiscriminately to many other diseases affecting the organs of respiration. Strangles is usually defined as an eruptive fever peculiar to the horse, and generally attacks him when young, say from the second to the sixth year. There are exceptional cases where it appears in animals advanced in years, and occasionally it will attack the same animal twice.

This disease is shewn by more or less disorder of the respiratory organs, followed by the formation of a hard tumour, (which afterwards suppurates), in the submaxillary space, or angle of the jaw. Such is the ordinary form of strangles; in some cases, however, it takes on an irregular form, and abscess will occur towards the lower part of the shoulder or in the groin, and not unfrequently in the intestines.

Strangles may occur during any season of the year, but it is generally most prevalent during the spring months, and it appears to come on more readily on those horses that have been running in open sheds during the winter, and then are suddenly placed in a warm and perhaps badly ventilated stable. These sudden changes of temperature appear favourable to the developement of strangles, and more especially a sudden transition from cold to heat. The early symptoms of strangles are similar to those of catarrh or common cold. The horse is dull and languid; he sweats easily, and a very little work or exercise appears to fatigue him: his appetite is impaired, and he has a difficulty in swallowing; the throat is sore, and he keeps his head in a stiff position: gentle pressure on the throat excites a cough, which in many instances appears to distress him very much; his coat is dusty and dry; the ears and legs are usually cold, and the true nature of the complaint soon becomes visible by the formation of a hard inflammatory swelling in the region of the under jaw: the swelling gradually increases, and becomes soft, finally pointing and bursting, and discharging matter freely. Occasionally this swelling will appear without the throat being much affected, when the horse can masticate his food and swallow without any difficulty whatever, and the abscess forms quickly. In some cases, there is a great discharge of yellow matter from the nostrils, and the breathing is laboured: and cases do occur where death takes place from suffocation produced by the abscess. Strangles usually runs its course in from eight to twenty days. In the treatment of strangles the horse should have plenty of pure air, and also be encouraged to take nourishing food; the nostrils should be sponged several times a day with tepid water: the abscess should be encouraged to mature as quickly as possible, and for this purpose, fomentation with hot water, and poultices are useful. The body should also be clothed, and if the appetite is very much impaired, stimulants and tonics should be freely used. When matter can be detected in the abscess, it should be allowed free exit: therefore the use of the lancet in freely opening the abscesses will often prevent extensive sloughing of the surrounding tissues. In extreme cases, where death is threatened from the pressure of the abscesses, &c., the operation of tracheotomy, or cutting into the windpipe, may be successfully performed, and be the means of saving the animal's life. Severe and prolonged cases of strangles frequently terminate in a diseased condition of the larynx, and produce roaring, or whistling

Zymotic Diseases.

In the interesting reports of the Registrar-General, in medical and even in general literature, the term zymotic is now constantly encountered. It refers to a large and important class of diseases which account for one-fourth of the annual mortality in the human subject, which prevail largely and often fatally amongst the lower animals, and which include epizootic, enzootic, contagious and specific disorders. As examples of zymotic diseases in veterinary patients, we may cite strangles, glanders, farcy, and typhoid fever amongst horses; rinderpest, pleuro-pneumonia, and mouth and foot disease in cattle; variola in sheep, with distemper and rabies in dogs. As the derivation of the term suggests, these zymotic disorders, as first pointed out by Liebig, probably depend upon the presence of some fermentescible putrescent or toxic substance in the blood; they all consist, in some form or another, of blood poisoning. The poison in some cases is introduced from without, as in the *contagium* of plague or pleuro-pneumonia, in the bite of the mad dog, or the inoculation with cow-pox or glanderous pus. In other cases the poison appears to be introduced into the body of the patient along with the food or water, as in typhoid fever in horses, or splenic apoplexy in cattle, developed by water rich in organic impurities. In other zymotic disorders, the poison, instead of being introduced from without, appears to be developed within the animal body. This is proba-

bly, chiefly owing to rapid waste or degeneration of structure, or to imperfect elimination of effete or excrementitious products. In this way, fevers, diabetes, glanders, and farcy are induced in horses from violent exertion, and especially when the speedy removal of such waste matters is checked by inaction of important purifying channels, such as the skin, bowels or kidneys.

The zymotic poisons in many respects resemble the more familiar vegetable or mineral poisons. Like them, they have certain distinct and special characters, and develope their own particular train of symptoms and phenomena Aloes, jalap, and the fixed oils are attracted towards the digestive organs, strychnine has an affinity for the spinal chord, digitalis expends its depressing action especially on the heart. Particular zymotic poisons are similarly determined to particular parts or organs. Thus, the virus of rinderpest chiefly affects the submucous textures of the alimentary canal: the virus of pleuro-pneumonia attacks the lungs; the strangles poison involves chiefly the submaxillary, parotid, and salivary glands; the virus of glanders and farcy deranges particularly the lymphatic glands and vessels; the contagion of rabies interferes with the functions of all parts deriving their nervous force from the pneumogastric or eighth pair; the vaccine virus inflames the skin.

Like other mineral and vegetable poisons, the effects of zymotic or animal poisons vary somewhat with their dose, and also with the condition and susceptibility of the recipient. The same doses of opium, alcohol, or mercury, or other medicine, act very differently on different individuals. In like manner the poison of typhoid fever, farcy, or pleuro-pneumonia developes in different animals, and even in the same animal at different times, effects varying considerably in severity. We have known vigorous seasoned horses live for years unscathed in pestilent stables in which glanders and farcy steadily cut down successive relays of fresh inmates. Cows are frequently known to continue for weeks, or even months, proof against the poison which is infecting their less fortunate neighbours. Such poisons as that of rinderpest amongst cattle, the hydrophobia virus, or the bite of the rattlesnake, in all animals resemble such poisons as strychnine, aconite and prussic acid in the terrible uniformity of their effects, and in their developing their particular phenomena in all who imbibe a dose of them. Foul air, bad water, and other sanitary errors which interfere with the purification of the blood, invariably favour the development and usually increase the severity of zymotic disorders. Probably by exhausting the particular blood constituents on which these specific poisons fasten and feed, animals once affected are for some time less liable to suffer again. This is particularly the case with the eruptive fevers, which, like variola in sheep, strangles in horses, or distemper in dogs, seldom occur more than once in a lifetime.

Between the ingestion of a zymotic poison and the appearance of any of its effects, a certain period elapses, somewhat similar to the time which usually occurs between the swallowing of a dose of aloes or alcohol, and the developement of their ordinary physiological effects. But zymotic poisons, like mercury, lead, and digitalis, have probably also a sort of cumulative effect. A considerable period usually elapses before disturbed health indicates the full establishment of their effects. Symptoms of rinderpest usually appear eight or ten days after the animal has been exposed to the special virus; the aphthasis epizootic shows itself in less than half that time; whilst pleuro-pneumonia has a long incubative period, forty days sometimes intervening between the taking in of the poison and the first notable signs of failing health. Hydrophobia presents the most protracted period of incubation yet known. In the human subject six or eight months, and in some rarer and perhaps insufficiently authenticated cases upwards of a year appears to have elapsed between the bite of a mad dog and the first evidences of the terrible hydrophobia symptoms. Amongst animals the incubative stage of rabies is probably sometimes equally prolonged, presenting a serious difficulty in the way of entirely exterminating the disease.

Zymotic poisons in susceptible subjects have a wonderful yeast-like property of self-mutliplication. A speck of vaccine lymph scarcely visible to the unaided eye during the incubative stage, increases until the resultant vesicle contains many millions the amount of the original speck. A whiff of cattle plague virus fastening on a beast within three weeks will generate poison enough to infect a thousand cattle. Invariably each poison produces its own kind. The poison of glanders, hydrophobia, or rinderpest, each reproduces respectively glanders, hydrophobia, and rinderpest.—*North Britlish Agriculturist.*

Inflamed Udders amongst Dairy Cows.

The showery weather, the keen north-easterly winds, and cold nights of the past few weeks, have told injuriously on the dairy cows, have lessened the yield of milk, whilst the fatty matters of the food having been consumed by the cows to keep themselves warm, cream has not been so abundant as could be wished. The sudden alternations of temperature, the hot sunshine shortly followed by the keen chilling winds, besides producing complaints among horses, induced many cases of garget or inflamed udder amongst cows. Those causes which in men and horses give rise to colds in the head or sore throats, are apt in dairy cows to affect the vascular, sensitive, teaming milk glands. The cow comes in tucked up and trembling. Her skin is dry and in a tremor. She does not care either to eat or to drink, frequently she blows as if taking inflammation of the lungs, her mouth is hot and dry; her udder, or sometimes only one or two quarters of it, is hot, swollen and hard; from the congested or inflamed quarter little or no milk is obtained; any milk secreted is dingy and often contains shreds of coagulation. This is cold or catarrh of the udder. The milk glands are congested and inflamed. Frequently, the skin and membrane lining the bag are also implicated in the attack.

When early and rationally treated, the cases seldom give much trouble. The cow must be kept in a comfortable house, and clothed with several rugs or bags until she is warm, and the skin resumes its natural functions. The udder should be drawn at intervals of an hour, so that no milk shall accumulate to excite further irritation. When the bag is very hot and painful, fomentations should be diligently continued for several hours. A dose of laxative medicine is requisite at the very outset, and greatly helps in cutting short the attack, and allaying pain and fever. A suitable combination consists of half a pound each of Epsom and common salt, and a pound of treacle, dissolved together in a couple of quarts of water. To this may be added ten drops of tincture of aconite, the most convenient and effectual sedative for any veterinary patient. If the trembling, heat and swelling of the udder still continue, after a couple of hours repeat the aconite in a pound of treacle and water. Whilst the cow is recovering, and for some days after she is again able to eat, and her udder is in a natural condition, it is wise to keep her in the house, especially if the weather is cold and showery. Many serious relapses occur from cows being turned out too soon, and remaining on the damp pastures during the night. Even cut wet grass, given in the house or yards, is usually injurious. When, from inflammation or other causes, the teats get obstructed so that milk cannot be withdrawn from the inflamed udder, a teat syphon should be used. Without proper professional advice, it is unwise to cut off the teats or make incisions into the inflamed gland, as is sometimes done by dairymen and their servants. Such treatment, instead of mitigating, generally greatly aggravates the case, and even if it does not lead to a fatal issue, of course renders the cow almost valueless for the dairy. —*North British Agriculturist.*

Veterinary Surgeons.—We are glad to learn that quite a number of graduates of the Toronto Veterinary School are establishing themselves in various parts of the Province and are doing well. Among the number, Mr. Thomas Baker has just commenced to practise in Brantford.

Cutaneous Disease of a Horse.—Mr James Rogers, from Egremont, writes:—"I was surprised, a short time since, to see a horse on a friend's farm brought from the pasture field all covered with soft lumps about the size of a small potato, and his mouth swelled as hard as a piece of burnt leather. Please to let me know through your

journal, at your earliest convenience, the disease and the remedy, and cause, as I never saw anything of the kind before."—Reply by Ed.—The disease above referred to was probably the result of the horse eating some irritant herb, leading to a general derangement of the system. We would recommend in such cases a change of food, and give, morning and night, two scruples of the iodide of potassium dissolved in four ounces of water. The mouth should be gargled with alum water twice or thrice a day.

Induration in Cows' Teats.—J. B. I., from the Gore of London, writes as follows: "I have a very valuable grade cow for breeding purposes, which has a gristly substance formed inside one of her teats, about one and a half inches from the end, and about half an inch wide, running all around the teat, but has not given her any pain until lately. As she is only a young cow, I do not wish to send her to the butcher unless compelled to do so. If you, or any of your readers, know of a remedy, you will oblige by replying through your columns." Reply by Ed.—The hard substance within the teat may be removed by using a small concealed bistoury introduced into the teat, and partly cutting or breaking down the gristly substance. Afterwards inject a mild astringent, as ten grains of the sulphate of zinc to an ounce of water.

Dropsy of the Womb.—Stephen Nicholson, of Sylvan, writes as follows:—"You will oblige me by giving me information as to the nature of a disease with which two of my cows have been afflicted, and also suggesting a remedy for the same. The symptoms were as follows: About five weeks before calving, their bellies became unnaturally large, and at times they refused their food. After about a week they would occasionally move their hind legs as though in great pain. Their eyes were sunken in their sockets, and they became emaciated almost to a skeleton. They also had difficulty in voiding their urine, and their droppings were very small. About ten days before their time to calve they both died in great pain. They were stabled in the winter, fed on turnips and hay, and had gentle treatment. One of them calved a dead calf the day before she died. The other kept on her feet, and wandered about until she dropped dead. I gave them a mixture of laudanum, spirits of nitre, camphor, and saltpetre. Did I do right or not?" Judging from the symptoms above described, we are of opinion that the cows were affected with dropsy of the womb—the result, in many cases, of exposure to cold, and perhaps a want of nutritive food. To prevent such an occurrence, cows should have a comfortable stable in winter, and a regular and plentiful supply of nourishing food. In the case of our correspondent, there does not appear to have been any defective treatment. It is not always easy to account for the origin of every case; but as a general rule, attention to proper warmth, ventilation, and nutritious diet, will secure immunity from such diseases.

Stock Department.

Notes on Canadian Herds.

NO. 3.

About half way between Paris and Brantford, a little off the main travelled road, and lying high up on the banks on the east side of the Grand River, is a farm of 500 acres, known as "The Plains." This is the residence of Hon. D. Christie, well known as a breeder of short-horn stock. The soil is of a light warm sandy nature, overlying a strata of gravel, and was originally covered with a scattered growth of small white oak timber, known as oak openings. Mr. Christie first came into notice in 1850, through gaining the Canada Company's prize of $100 for the best 25 bushels of fall wheat, which he did with a sample of what was then a new variety, since so well known as the Blue Stem wheat. We remember seeing the field where the wheat was grown, in Dumfries township—one vast waving crop of grain covering 400 acres, the average yield of which that year was thirty-six bushels to the acre. Stock-raising being now most in favour with the proprietor, the farm is devoted mainly to raising grass and roots, on which to keep the fine herd in good condition, though some 200 acres of grain are raised. As the sale of which we gave an account a short time since was to come off the day we were there, we took a first look at the bulls, which have been already described.

Besides those put up at the sale, there were two others we saw that are to be kept on the farm for breeding purposes, namely, Knight of St. George, an animal somewhat similar to Oxford Lad in appearance, being, however, much smoother and evener. He is a Booth bull, recently imported by Mr. Christie, and a fine animal, color red with some white; he is young, two years old, and not at his prime yet. Knight of St. George, when six months old, cost 200 guineas in England. He was bred by Mr. Carr, of Stackhouse, and got by Prince of the Realm (22627). His dam, Windsor's Queen, is one of the best cows in England. When a month old Mr. Carr refused 250 guineas for her, and he has since refused 500 guineas for her. Her sire, Windsor (14013) was the best bull of his day in England. He won the three national prizes. He was ten times exhibited, and took nine first prizes, twice taking the first prize at the Royal English shows. Mr. Booth refused 1,100 guineas for him. Knight of St. George is a pure Booth bull, of the Bliss family, the most valuable of the Booth tribe of Short-horns. Of this family there have been many distinguished animals exhibited during the past year in England; among them, England's foremost cow, Lady Fragrant, bred almost precisely as was Knight of St. George. Mr. Christie is highly pleased with his calves, and thinks them the best he has had. Another bull, Prince of the Realm, pleased us greatly. He is red, 28 months old, got by Crown Prince of Athelstane (21512); dam Princess of Athelstane; he was bred by Mr. Christie on the farm, but seems to have less substance and solidity than the Knight.

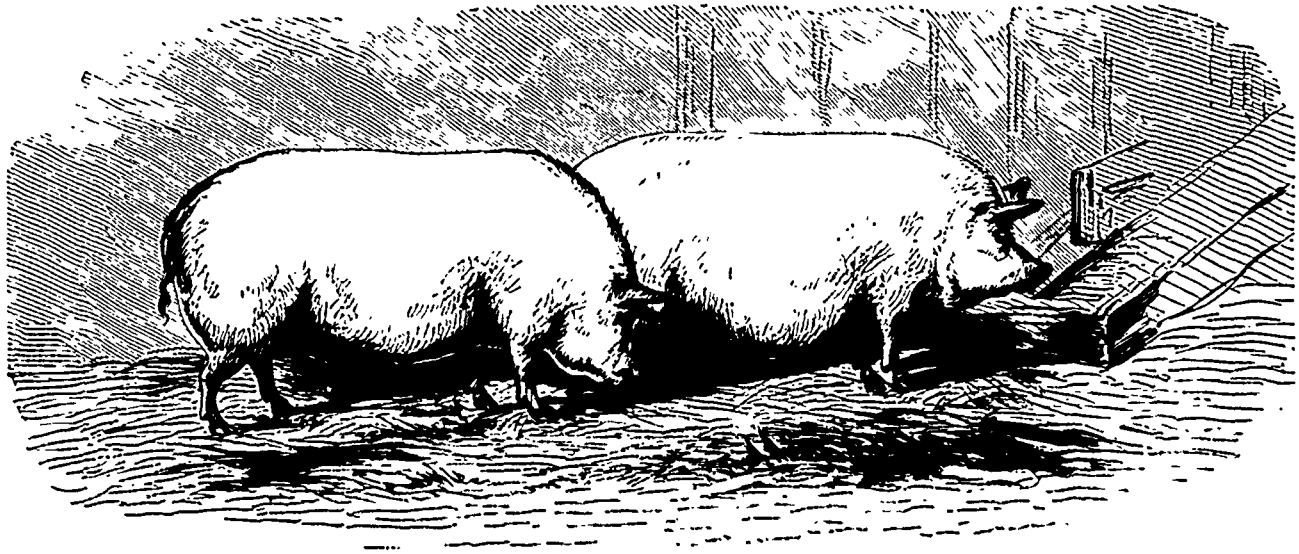
The three well-known imported cows, Queen of Athelstane, Princess of Athelstane and Placida, still stand at the head of this fine herd of short-horns. The former two are now in extra high condition, and have not bred for some time. The latter has a handsome red bull calf, 2 months old, by Knight of St. George. Crown Princess of Athelstane, roan, by Next of Kin (20405), dam Queen of Athelstane, is now a splendid cow, and in fine condition: she has a light roan heifer calf, three months old, by Knight of St. George. Her first calf, Oxford's Princess of Athelstane, is a superb red heifer by Oxford of Athelstane, 6021, a son of Pride of Athelstane by Oxford Lad, and the winner of the sweepstakes at Toronto in the year 1866, although then only ten months old. Rose of Athelstane, a roan cow now four years old, by Crown Prince out of White Rose; has a very handsome roan calf by Prince of the Realm, six months old; he was sold at the sale, though not yet weaned. A roan cow, May Queen, of the Sanspareil tribe, looks to be in low condition, but is an excellent breeder and milker; she has a very fine roan bull calf two weeks old, to Knight of St. George. Louan 17th, a light roan cow imported from Kentucky. She is a small but very fine cow, bred by Mr. Duncan, and a daughter of his celebrated Duke of Airdrie 2743. A very noticeable cow is Josephine 3rd, a roan by Colin Campbell, 3765, dam Josephine by D'Otley 432; she has crumpled horns, and has proved a good breeder, having now a red heifer calf, three months old, by Crown Prince; she was bred by Jeremiah Duncan of Kentucky, from whom Mr. Christie purchased her. Joyful, a roan cow from Josephine 3rd, by Oxford Lad, has a light roan heifer calf, also by Crown Prince. Beauty, roan, also from Josephine 3rd, by Duke of Airdrie, 2743. She has a very promising heifer calf by Knight of St. George. Laura, a white roan, out of Louan 17th, by Lord Derby, 3086, has a red and white bull calf, a month old, by Knight of St. George. Besides these cows, we noticed some very nice heifers; among them Placida 2nd, red, out of Placida by Crown Prince; Princess Imperial, red and white, out of Beauty by Crown Prince; Rose of Sharon, white, from White Rose, by Crown Prince; Princess Louise, dam Louan 17th, by Crown Prince; and a red heifer, Ellie, by Mr. Alexander's Laudable, 5870. Ellie is two years old, and is a heifer of great beauty and promise, purchased from Mr. Sandusky of Illinois, and now in calf to Knight of St. George. There are now some 26 thoroughbred females in the herd. Besides these, there were about 25 head of grade cows and

heifers of an extra good quality, showing how well good blood will tell when sound judgment is used in selecting females from which to breed to the thoroughbred male animals.

The original herd which carried off so many prizes at Provincial Shows when first exhibited in 1864, were mostly from the stock of the well known Scottish breeder, Mr. James Douglas of Athelstaneford. Additions have been made from time to time of stock from well known breeders in Kentucky, Illinois, and Ohio. Very high prices have been offered and refused for some of the younger heifers, but as most of the calves produced have been bulls, Mr. Christie does not seem inclined to part with any of his females yet.

considered any objection to have a touch of black in them. Mr. Crisp, of Butley Abbey, Suffolk, is the leading English breeder and prize-taker in this class, but strangely enough, he has both black, white, and spotted specimens, and values the black ones the highest. The Chinese breed, from a cross of which on the original Suffolk the improved breed has sprung, was a black and white animal, and the fashion in England runs more to black than white pigs. The portraits we give are of a boar and sow belonging to George Roach, Esq., of Hamilton, and were purchased by him from Mr. Crisp, and imported to Canada in 1868. They are both a little over a year old, and in

was a boar of the same breed, bred by Fisher Hobbs, of Essex, England. Both of these are fine animals, and though not in a high condition of fatness, which would be injurious to breeding stock, they show all the best characteristics of the breed in their fine form small bone, and quiet disposition, to a very high degree. Mr. Roach has also several fall pigs from this pair, which are kept at his place in London, where we had previously seen them. They are perfect beauties of the porcine tribe. They are perfectly hardy, and make the very best cross on common stock that can be obtained. Of Suffolks he has quite a number, of which the best animals we saw are a sow and boar imported last year. They were bred by Thomas Crisp, of Batley Abbey, Suffolk, well known as the



IMPORTED SUFFOLK BOAR AND SOW—The Property of G. ROACH, Esq., Hamilton.

The Suffolk Breed of Hogs.

The original breed of Suffolks was a large, coarse, white animal, well covered with bristles, and of hardy constitution. The breed now known under this name have been produced from a cross of the Chinese on the old Suffolk breed, and are medium in size, with round bodies, short limbs, small heads and prominent cheeks, and are mostly white, with fine thin hair, and have an aptitude to mature early, fatten easily, and keep in good condition on a small amount of food. At a year old they will make excellent bacon hogs, averaging from 250 to 300 pounds each, while even younger animals make most delicious and excellent pork. The celebrated pigs bred by the late Prince Albert at his farm, near Windsor, were of this breed, though called Windsors when in his hands.

They are much esteemed in England, especially in Suffolk, though it is not easy to find them pure, as they have been much crossed with the Essex, and it is not considered any objection to have a touch of black in them.

but ordinary condition, the sow having raised a litter this summer. Having seen the originals, we can testify that the artist has succeeded admirably in representing this very fine and promising pair of animals.

Among the Swine

When at Hamilton on the 21th May, we met George Roach, Esq., the well known importer and breeder of thoroughbred swine, and he very kindly drove us out to his farm, two miles west of the city. It is a small place of sixty-seven acres of pretty stiff clay soil, now mostly underdrained and in a high state of cultivation, yielding large crops of grass, roots, and grain. Besides pigs, he also takes an interest in horseflesh, having several fine young horses bred on his farm. We also noticed a good many fine poultry, principally Buff Cochins and Brahma Pootras. The first animal we saw was an Essex sow, with eleven pigs about a week old. The sow was bred by the Duke of Richmond, of Goodwood Park, Essex, from whom Mr. Roach, purchased her. In an adjoining pen

great prizetaker of England in Suffolks. The sow has seven pigs about a month old, and is a very handsome animal, in fine condition, and undoubtedly the best of the breed on this continent, while the boar is equally as good, though younger and not quite so large in size. Mr. Roach's Suffolks have the appearance of being the real "Simon Pure" without any admixture of other blood, so often noticed in swine of this breed, which is done by some breeders to increase their size when intended to be put in condition for show. In a large field of clover adjoining the barn, we saw the three Berkshires Mr. Roach had just had sent out to him on the *Dacia* from England. They comprise two sows and one boar, bred by Arthur Stewart, of Saint Bridge, Gloucestershire. Though but just arrived from a sea voyage, they were in fair condition and quite lively. They are only four months old, but show every fine point to be desired in the breed, and by the time of the next Provincial show will give a good account of themselves.

Mr. Roach has two other larger farms some distance from the city, which we had not time to visit during our short stay; but from what we saw on the one we visited, we judge

that he knows how to make farming pay, and at the same time keeps everything in first-rate order, and only the very best stock of its kind.

Mr. M. H. Cochrane, of Compton, has sold to Wm. Warfield, of Kentucky, the short-horn bull, Robert Napier, imported by Mr. Cochrane last year from England.

A monthly live stock sale has been established at Urbana, Ohio. At one recently held $15,000 worth of cattle, and $1,300 worth of horses were sold.

Short-Horn Sale.—Mr. Ashworth, of Belmont, Ottawa, has sold to W. Findlay, Esq., of Westmeath, county of Renfrew, his bull, the Friar of Belmont, got by Sweetmeat, 20924, out of Lydia Languish, by Sirius, 13737.

The *Farmer* (Scottish) states, that on a farm on Cockburnstrath, Scotland, after a cold storm in the early part of June, nearly six score sheep, which had been recently clipped, were found dead from the cold.

Prize Leicester Ram.—In connection with the illustration of the Prize Leicester Ram in the last number of the Canada Farmer, we should have mentioned that Mr. John Snell, of Edmonton, carried off the chief honors in this class; and the portrait given very correctly represents his fine shearling of that breed, which gained a first prize.

The Islington Horse Show.—The annual exhibition of horses in the Agricultural Hall, Islington, took place during the first week in June, and though the number of entries was considerable, there being 364 exhibitors of horses, and the attendance of visitors mounted up to upwards of eighty thousand persons, yet the English journals characterize the exhibition as inferior to those of former years, in the quality of the animals. Without some change, the show seems likely to degenerate into a monster circus, and the owners of first-rate horses will not be likely to patronize the exhibition.

Whipping Oxen.—It is a cruel and generally useless act of barbarism to whip oxen; yet many farmers are in the habit of continually keeping the whip going when teaming their cattle. Instead of inviting the animals to exertion by proper words, the first intimation the poor creatures have from their master that he desires them to start is a cut of the whip or prick from the goad. This is not only savage, but absolutely wicked, and wholly unnecessary. Another practice often seen is that of pounding and thrashing the oxen because they don't readily back a load, when they have not been taught to back an empty cart down hill. I have no doubt that the selling value of many a yoke of oxen is depreciated from twenty-five to seventy-five dollars by being abused in this way. If animals are desired to work, they must first be taught to work, and when they understand what is wanted of them they will cheerfully comply. But there is a better way to communicate your desires to them than through the whip. Kindness and skilful management are far better. Remember that a "good man is merciful to his beast."—*The People.*

Poultry Yard.

Standard Rules for Exhibition Poultry.

To the Editor.

1. Are not some of the Rules for judging poultry arbitrary and unreasonable?

2. If a first-rate Spanish Cock gets his comb nipped by frost, why should that misfortune, so common in Canada, disqualify him for exhibition?

3. Again: the comb of a Spanish Cock must be straight and high—why must the comb of the hen be doubled up and turned over? And if, as sometimes happens, the hen's comb in height and straightness resembles the cock's, why should that circumstance disqualify her?

4. In game fowls it is an important point that the head of the cock should be neatly and closely dubbed. Suppose the comb should be trimmed high, as some prefer it, would that disqualify?

5. Some fanciers, who keep first-rate fowl, dislike and object to trim their heads at all. Would this neglect prevent them from obtaining prizes? Would it not be as reasonable to require cocks to be clipped or heeled for exhibition?

Reply—1. The requirements of the *Standard of Excellence* may sometimes appear arbitrary, but it is far better to have fixed rules, that the novice may know what excellence to aim at in breeding, and the judges have definite points to guide their decisions, than to leave the whole matter to the fancy of individuals. The *Standard of Excellence* has been compiled by the most experienced poultry breeders from all parts of England, and the Ontario Association have done wisely in adopting it, at least until some competent authorities can substitute a better.

2. A frozen comb would not disqualify, but, as in the Spanish breed the comb is a great point, a bird with a perfect comb would certainly, other things being equal, take precedence over one in which that important appendage was disfigured by any cause. Besides, a frozen comb shows either delicacy of constitution, or some neglect.

3. We do not feel certain about the reason for the rule respecting the Spanish hen's comb, but we suppose it is that the hen's comb is naturally so much thinner than that of the cock, that if it be properly developed it must lop over; and if it were erect it would probably be either coarse or too small.

4. If the comb of a game cock has not been cut close and neat, it would not disqualify him for exhibition, but would diminish his chance of success. Some fanciers prefer cutting their birds' combs high, under the idea that it protects the head, but in this respect we do not think anything is gained by the practice.

5. Some breeders prefer not to dub the game cock they intend to breed from; but such bird would certainly be disqualified, unless he were a stag, which should be exhibited without trimming. The case supposed of the fighting cock is not by any means parallel. Here the trimming and heeling are resorted to for a special purpose, which does not apply to birds for exhibition, and would, indeed, obliterate one of the most important points of excellence—the distinctive beauties of plumage.

New York Poultry Prize List.

To the Editor.

Sir,—The premium list of the New York State Agricultural Society, in the Poultry class, suggests some enquiries, which I make through your journal, in the hope that some of our brother poultry fanciers on the other side will furnish the desired information on the following points:—

What is a Leghorn Fowl?

What is an African Bantam?

What is the difference between a Chinese and African goose?

Is a Madagascar Rabbit necessarily lopped-eared? I think not.

The Hamburgh class includes all in one except Bolton Greys (silver pencilled). This will not be satisfactory to exhibitors.

F. C. HASSARD.

Toronto, July 23, 1869.

The Duck.

The domesticity of the duck is lost in the night of time. On the tables of luxurious Romans the wings and the brain were alone held in estimation; now our cooks throw away the head, not, we trust, from a horror of brains, but from the tediousness of divesting it of its tenacious little feathers.

Pythagoras, when composing his multiplication tables, decapitated those in his yard because of their constant cries. We may observe it is the duck that quacks, not the drake. Some chroniclers of the fifteenth century held that ducks were the produce of decomposed plants, as we find it occasionally asserted now that barnacles are produced from the shell of that name adhering to the sides of ships. As the child when asked what it was made of, replied, "beef," so the duck, feeding in marshes, may be said to be made of its weeds.

Spread over every country on the globe, and nourished alike on animal and vegetable productions, they are omnivorous. Reared with great facility and maturing quickly, the attention of the poultry keeper is naturally directed to them.

The Aylesbury duck can be successfully reared where running water and gravel abound; the Rouen in any locality. In size

and speedy growth the former has a slight advantage; but the perfect white plumage and flesh-coloured bill now affected at exhibitions cannot be perfected save in the neighbourhood of Aylesbury, where the soil and gravel are special.

The first eggs are usually unfertile; wild birds desert theirs.

Abundantly fed and the eggs removed, the duck lays upwards of one hundred eggs, but requires solitude to hatch, and is best supplanted by the hen, which can be had earlier and managed more easily. Nine eggs will suffice for a sitting. Some persons leave space for a few hen eggs in the clutch, putting them down eight days later. They affirm that the little ones are taught better manners by their more astute foster brethren. As the eggs of the duck are more liable to a chill during incubation than those of other fowl, they should be covered with a cloth while the bird is feeding. When the young issue forth, at the end of twenty-eight or thirty days, they can be fed for the first week on worms chopped, rough crumbled bread, steeped in water or milk, then barley or Indian meal; and when about three weeks old, nettles or chopped vegetables may be added at discretion. Greaves or chopped meat may be given before killing or fattening for exhibition. Next to goslings, the rat prefers ducklings, so that care must be taken that this Norwegian invader does not skedaddle with them in his frequent raids. The cat, a penny for the rat's head, and careful poisoning, will drive off this pirate.

Very young ducklings must be kept from getting into water, and thereby contracting cramp; daily renewed litter is imperative in their rearing, and a flat board with a ledge to spread their food upon, as it should not be liquid enough to run.

Mules, much bred in the south of France, are the produce of the Muscovy drake and either Aylesbury or Rouen ducks. Their eggs are abundant and their flesh is delicate. The mule does not reproduce except with one or other of the parent species. The first cross is best adapted for use. Little water suffices them.

The drake may be allowed from six to seven companions, with more the eggs would be unproductive.

The black East Indian ducks, shining with a green metallic lustre, are very pretty. They usually pair.

The Cayuga or lake duck of America is said to be hardy and of a good size. It is a good layer, and its weight is equal to the Rouen, eight to nine pounds. The colour, brown black, white collar, and white flakes on neck and breast; faint green on head, neck and wings.

Soft water is better than hard for ducks; clearness not a desideratum. When for immediate use, the duck is killed by strangulation; if for transport or long keeping, the throat is cut, care being taken not to soil the plumage, which is most useful to the careful housekeeper, as the feathers are considered nearly equal to those of the goose. They can be plucked, like the latter bird, with moderation, and are nearly as profitable. The time for moulting is generally after incubation, which is the proper time to pluck.

Eider down constitutes a source of industry amongst many of the polar region inhabitants, who, at the peril of their lives, seek in rocky clefts nests made of sea herbs, where the eider duck lays her eggs on a bed of down torn from her breast, and again and again renewed, the male aiding if required.

On the canals and rivers of China the raising of ducks is carried on in boats, from which they are sent to feed on the brink of the rivers, and recalled by the sound of a trumpet and a trained dog. As in bee-keeping, the boats change their locality at will, for a fresh field of nourishment. A boat is capable of lodging 2,000 ducks.

The mean term of the duck's life is from twelve to fifteen years, and it is of all birds of the poultry yard the most robust. Its eggs excel those of the hen for omelettes or pastries, but are not as easily whipped for creams, &c., by the cook, and are therefore not such favourites with that artist.

There are many varieties of duck which my space will not allow me to specify. Amongst them are the Bahama, a very graceful bird: the Carolina and Mandarin, both very beautiful, and the Canvas-back, which is reputed by American consumers to have a most delicate flavour, and weighs about four pounds.

I condense from the *Standard of Excellence*, published by the Poultry Club, the following:—

Aylesbury—*Bill*, long and broad; side-view as straight as possible from top of head to tip of bill; flesh-coloured, and free from black marks; *neck*, long and graceful; *body*, long and deep; *back*, long and broad; *wings*, well up and strong; *tail*, stiff, curled in the drake; *thigh*, short; *legs*, short and strong, light orange; *plumage*, pure white.

Rouen—Drake's *bill* same in shape as Aylesbury; *colour*, greenish yellow, with black bean at tip.

Duck's *bill* broad, long, flat, brownish orange, with dark blotch on upper end; *plumage* of both like the wild mallard and his mate. White in the flight feathers of either: clear yellow, dark green, blue, or lead coloured bills: and birds down behind from excessive fat, are disqualifications.

JAMES C. COOPER.

Cooper Hill, Limerick.

RAISING CHOICE POULTRY.—To breed a good chicken, turkey, duck or goose, a good animal of any kind, requires thought, skill, study, observation, and genius. There is as much science, taste, and art, in breeding poultry "to a feather" as in breeding a horse to the highest trotting or racing speed.

Entomology.

Popular Entomology.

At this time of year, when the ravages of noxious insects are at their height, there are always numbers of little entomological paragraphs going the rounds of the press, that well display the need in this country of a Provincial entomologist, to teach the people the simplest facts about the nature and habits of the commonest insects. The following specimens, clipped at random from the columns of respectable journals, may be regarded as fair samples of the ignorance that exists on these matters—ignorance that on almost any other subject would bring upon the writer inextinguishable shouts of derisive laughter.

What would be the effect if we were to assert that "a species of racoon, about a foot and a half long, and as thick as a man's leg, is infesting the cornfields out West, and perhaps in other sections; *its sting is deadly poison?*" Would not every reader at once say, "What a fool the fellow must be who wrote that. A racoon can't sting." To which we might reply, "Did you ever see a racoon?" "Yes, lots of them," answers the reader, "every one knows what they're like." "Well, didn't you ever notice that long thing sticking out behind?" "What, its tail, do you mean?" "No, not exactly, some people call it a tail, but that's its sting, and it's deadly poison!" Imagine the shouts of laughter that would follow this assertion, and yet it is not one whit more absurd than the following paragraph, which one editor after another gravely copies:—

"A green worm, three inches long, and as large as a man's finger, is infesting the tomato vines at the West, and perhaps in other sections. Its sting is deadly poison."

Every year a similar paragraph to this makes its appearance in some country paper, and is widely copied. Sometimes, indeed, it is accompanied by minute particulars as to names, dates, localities, &c., and is not so ambiguous as the above. There is, of course, a big green caterpillar that infests the tomato and potato plants, and that is adorned with a stiffish tail at the end where the tail ought to be, but it can no more sting with it than a dog can with his. It would be thought a waste of words to say that no horse, cow, pig hen, goose, duck, salmon or cod fish, can sting; why should it not be equally unnecessary to say, that no butterfly, moth, caterpillar, beetle, grasshopper, worm or grub can sting, but only bees, wasps, hornets, ichneumons and such like? Everybody knows the ordinary nature and habits of the former, why should they not know equally well the simplest and most apparent facts in the nature and habits of the latter, which are infinitely more common and numerous than the bigger animals?

Here is another specimen :

"The cabbage fly is committing great ravages in many parts of Maine. It was first seen in America, at Quebec, in 1854, and was probably carried to the United States in grain from Canada. It strongly resembles the common butterfly in general appearance."

Nobody expects a horse to live on meat, or a dog on hay, and yet that would not be a bit more extraordinary than for a cabbage-worm to live on grain; and so we say that it is the most utter impossibility that the cabbage-fly should have been imported into Maine in grain from Canada. This insect does not "strongly resemble the common butterfly,"—which butterfly, we may ask, out of the nearly a hundred species that inhabit Canada?—in general appearance," but is itself a white butterfly, common in England, and now, to the grief of gardeners, nearly equally common in the Province of Quebec. As that Province adjoins the State of Maine, and the cabbage butterfly (*Pieris rapæ*) has four good sized wings, it is not difficult to believe that it simply availed itself of its natural powers, and flew across the border!

Another specimen runs as follows:—

"In Middlesex the curculio has been unusually destructive of the currants and gooseberries this season, the trees in several localities being literally stripped by them. We hear of persons who have tried every specific to get rid of the scourge, but without avail."

We would fancy that everybody in Canada knew by this time that the ravagers of the currant and gooseberry bushes are caterpillars of a saw-fly and a moth, while the curculios are snout-beetles, the best known of which attack plums, and occasionally cherries and some of the larger fruits. The curculios never eat leaves, and the currant worms never eat fruit.

At the recent meeting of the Fruit-Growers' Association, it was resolved to petition the Hon. the Commissioner of Agriculture for this Province to grant some pecuniary aid to an entomologist, who should report from time to time on the noxious insects of the country. We earnestly trust that their request may be granted, and we feel quite sure that, judging from the paragraphs we have quoted above, he will have quite enough to do in dispelling the popular ignorance on this much neglected but very important subject.

Insect Extermination.

The following extract from the *Vineland*, (New Jersey) *Weekly*, which we clip from the *American Entomologist*, is well worth consideration and imitation. Individuals amongst ourselves may, possibly, not be so patriotic as Mr. Landis; but surely the inhabitants of towns, or villages, or sections of townships, might club together and offer prizes for the purpose of checking the hosts of noxious insects that appear to be becoming a greater nuisance every year:—

TO THE CITIZENS OF VINELAND.

I am convinced that fruit cannot be successfully raised in this community, or any other, without waging systematic and successful warfare against the insect enemies. This success involves a vast amount of present property and more in the future. With this success Vineland becomes pre-eminently the most valuable place in the Union for fruit culture.

To encourage success in this direction I therefore offer the following premiums, to be awarded under the auspices of the Agricultural Society:—

Ten dollars for the best half-acre of fruit trees kept the cleanest from tree grubs, curculios and apple moths.

Ten dollars for the best acre ditto.

Ten dollars for the best two acres ditto.

Ten dollars for the best four acres ditto.

Ten dollars for the best five acres ditto.

Ten dollars for the best six acres ditto.

Ten dollars for the best seven acres ditto

Ten dollars for the best eight acres ditto.

Ten dollars for the best nine acres ditto.

Ten dollars for the best ten acres ditto.

Together with a certificate of merit, handsomely framed.

The points to which it appears most necessary for people to direct their attention are the following:

First—Borers. Peach Trees—Dig them out with a knife—depend upon nothing else Nectarines—Dig out the borers. Apple trees—Dig out the borers. The first year they can be found with a knife, the second and third years require an annealed wire.

Second—Curculio. Only to be destroyed by jarring the trees and letting them fall upon a sheet, and burning them. Do not shake, but jar the trees. This is to be done early in the morning, and as often during the day as necessary. They infest the apricot, the peach, the nectarine, the plum, the apple, the pear, the quince and cherry. Also gather all the fruit that falls to the ground immediately, as this fruit contains their eggs. They appear from the middle of May until July, but have to be looked for before and after these periods.

Third—The Apple-tree Moth. The great enemy of the apple, the pear and the quince. The remedy for the apple-moth is

1st—Gathering the fruit as it falls to the ground, and burning it or feeding it to stock.

2nd—Trapping them by coiled rope made of hay or rags (not straw) coiled three times around apple, pear and quince trees. These bands should be put upon the trees about the twentieth of June, and examined every two weeks and the caterpillars destroyed. They should be kept on until the middle of October.

The amount of labor this requires when done regularly and with system, is very small in proportion to the immense profit to be obtained. It ensures a full and certain crop of fruit. By this means apricots and plums can be as readily raised as anything else.

I respectfully recommend that associations be formed in all the school districts, of people who will agree to keep their orchards clear of insects: who will meet together once a week, or oftener, for mutual understanding and information, and to take measures concerning the cleaning of those orchards that are neglected. This is of paramount importance until a proper law is obtained upon the subject. These meetings should be held at once, without any delay.

Citizens, fruit culture means painstaking labor. It requires the destruction of insects, and for this labor it will return you a thousand fold. This necessity is a blessing in disguise, as it elevates the business to an art, removing many farmers, also careless people, from competition, making the profits to the careful and industrious proportionately large

CHAS. K. LANDIS.

Vineland, May 10, 1869."

Apple-tree Bark Louse.

To the Editor.

Sir.—In a recent issue of your journal, in reply to a correspondent who enquires for a remedy for the Apple-tree Bark Louse, you say that the time during which they can be successfully treated is limited to a few days.

I have the pleasure of informing you, that according to my experience, you are mistaken for once.

Five or six years ago, I had some trees badly infested with bark lice, two of which were so nearly killed by them that I had given them up for dead. Now for the cure:

In the fall or early winter, after the household ceremony of soap making, I noticed that there was some tolerably good lye remaining, so I took it, and with an old tin dish dashed it all over those two trees, and I think I gave them another dose in early spring. Now for the result: I found the next summer that the scales were all loose, and the slightest touch would knock them off. The trees took a new lease of life, commenced to grow again, and have been growing vigorously ever since. So I considered myself master of the situation, and whenever there is any lye remaining after soap making, I always dash it on the fruit trees, provided always that there are neither leaves, nor buds far advanced, and I have never been troubled with bark-lice since, and the bark is smooth and bright as a dollar (and much easier to get hold of); the trees have grown surprisingly, so that if the little rascals go to the top, they may have it all their own way, for I cannot throw lye up there without a catapult, or some such contrivance, which of course lye would soon damage.

J. Glover.

St. Thomas, June 17th 1869.

Note by Ed.—We are glad to learn from Mr. Glover that he has been successful in treating the Bark-lice in the manner above described. Strong alkaline solutions are al-

ways considered the best remedy for these and similar pests, but a difficulty in applying them is, that, when strong enough to destroy insect life, they are apt to destroy vegetable life as well. By using lye, however, when there are no leaves or opening buds to be injured, good appears to be effected. The reason we limited the application of a solution of soap to the short period during which the bark-lice are unprotected by their usual scale, is because it is so difficult to get any solution that will penetrate the hard scale, and the eggs that are under it in winter, and the louse in summer. The opinion we advanced in the article referred to, is corroborated by the testimony of Mr. Riley, State Entomologist of Missouri, and by Mr. Walsh, who holds the same position in Illinois, (see their respective First Reports): the latter gentleman sums up the results of his careful report as follows:—"1st. Strong tobacco-water has no effect whatever upon these Bark-lice, no matter at what time of the year it may be applied. 2nd. Strong alkaline washes have no effect whatever upon these Bark-lice, no matter at what time of the year they may be applied. 3rd. A strong solution of soap will kill almost every one of these Bark-lice that it touches *shortly after they hatch out*, but has no effect whatever upon *the perfected scale*. 4th. Petroleum, or kerosene, or probably any oily or fatty substance, will kill every Bark-louse, eggs and all, that it actually touches at any time of the year. 5th. Scrubbing the limbs of a tree with a stiff brush, shortly after the Bark-lice have hatched out, will destroy them, and remove them from the infected surface; but no such mechanical appliance can remove, or otherwise affect the perfected scale, simply because it sticks too tight, and is of too hard and solid a texture. 6th. By scraping the bark with the edge of a knife, or other such tool, even the perfected scale may at any time of the year be removed and destroyed." With regard to remedy No. 4., the use of petroleum, kerosene, and such substances, is a very ticklish experiment, as we know them by experience to be very injurious to the life of the tree; some, however, have used them successfully *in the winter and very early spring*, but they are deadly to vegetable life in summer.

Maple-tree Borer.

We have received a fine specimen of this very handsome beetle from J. S. L., Rondeau, Ont., which reached us, he will be pleased to learn, alive and in good condition. It was picked off a dandelion leaf, but that, of course, was an accidental situation for it, as in its beetle state it frequents flowers for the sake of the pollen, and may sometimes be found about maple trees. It is not at all a common insect; entomologists usually look upon the capture of a specimen as the obtaining of quite a prize. Its proper name is The Handsome Clytus (*C. Speciosus*, Say). In its larval, or grub state, it bores into the wood of the sugar maple, sometimes damaging the timber very much, but it is hardly common enough to be considered an enemy. A somewhat similar insect is the Locust-tree Borer (*Clytus flexuosus*, Fab.), which has destroyed nearly all the locust trees in the neighbourhood of Toronto. The specimen before us is an inch long, of a rich velvety-black color, beautifully marked with bright yellow spots and bands: the hinder part of the body beneath is yellow with narrow dark bands, which give it a very waspish appearance, and no doubt serve to protect it from many foes. Most people, indeed, would be afraid to touch an animal that looks as if he was armed with a terrible sting, whereas in reality he may be handled with perfect impunity, and is of quite an innocent disposition.

The Rose Bush Slug.

To the Editor.

SIR,—I believe this pest of the dwarf pear and rose bush will be found to be neither slug nor caterpillar, and of a far lower organization than either. Its ravages are most unsightly to the garden. May I offer you a certain means of banishing it, so cleanly in its use that the most fastidious need not refuse to avail themselves of it, and to benefit their plants at the same time?

It is a club-headed transparent worm, that becomes when filled with its food a dark green, presenting itself when the leaves are abundant enough for shelter, and in that state of succulency as to afford their juices for its food. During the absence of moisture, it is to be found solely on the lower side of the leaf; but as soon as there is any indication of moisture, it appears on the upper side, where it can neither live nor feed under other circumstances. Its presence at first is indicated only by a few skeleton leaves, and it points to a caustic as the most efficient mode of banishing it from our plants. One presents itself that will in its use be at the same time beneficial to the plant itself. In the evening, or at the farthest, the next dewy morning, after you observe the affected plant by its skeleton leaves, when they are feeding on the upper side of the leaves, powder quick lime on the worms; a very little will cause them to discharge their food, when they become dried up, transparent objects, incapable of further mischief.

I offer this mode of riddance from having tested its efficiency myself.

JAS. G. HUSBAND,
Guelph.

NOTE BY ED.—The slugs on the rose-bush are quite a different species of insect from those on the pear; the former are naked, pale green, and yellowish beneath, while the latter are covered with a thick, very dark green slime, which quite conceals the real form and colour of the insect. They both, however, belong to the same genus of Saw-flies (the technical name of the former being *Selandria rosæ*, Harris, and of the latter *S. Cerasi*, Peck), and both may be destroyed in the same manner. Dusting with quick-lime, as our correspondent recommends, has been employed as a remedy against them with some success. We have found syringing them with strong soap-suds the easiest and most convenient, and at the same time a very efficacious plan, besides the advantage it possesses of cleansing the leaves and not rendering them unsightly with dust, as is the result of using lime.

Squash Bugs and Cucumber Beetles.

The large insect infesting the Squash, sent us by Mr. W. H. Abraham, of Chippawa, Ont., is that well known and abominable pest, the "Squash-bug" (*Coreus tristis*). Some of these bugs live through the winter and lay their eggs on squash and pumpkin vines early in the summer, and after that there are continuous broods of them till the frost cuts down the vines in the autumn, when the bugs may sometimes be found trying to puncture the hard rind of the fruit.

Diluted coal oil, as tried by our correspondent, we should imagine to be a good remedy. Frequent drenching of the affected plants with strong soap-suds, combined with picking off and burning the leaves that are covered with young bugs and those on which the eggs are laid, we have found efficacious. The great trouble is that the remedies have to be continually applied all through the summer. This year we did not plant any squashes, because a neighbour raised last year, in a field close to our garden, such an enormous quantity of the horrid bugs on his pumpkins, that we knew it would be an endless fight to raise any squashes, and they were hardly worth the trouble. If all would unite in trying to exterminate these pests, we should in a few years be very little troubled with them, but it is difficult for isolated individuals to do much.

The small yellow beetle, with three black stripes on its wing cases—sent with the above—is commonly called the "Striped Cucumber-beetle" (*Diabrotica vittata*), from its being generally found on this plant; it also attacks the leaves of melons, squashes, and other members of this family of plants (*Cucurbitaceæ*). It is very injurious when the plants are young and unable to stand the loss of some of their leaves, but afterwards it does not inflict so much damage. The young vines may be protected by a frame covered with gauze or tarletan instead of glass. How best to kill the beetles is more than we can decide; a very large number of remedies have been proposed by different experimenters, such as dusting with lime, soot, plaster of Paris, sulphur, and even Scotch snuff, drenching with tobacco-water or soap-suds, picking off and crushing, &c. Cresylic soap would probably be found efficacious.

Red-Spider on House Plants.

(To the Editor.)

Sir,—My house plants have this year been attacked by an insect in the shape of a minute red spider. I have tried in many ways, but in vain, to get rid of them. Amongst other things, I have used tobacco smoke, so injurious to other enemies of the Green-house, but this does not seem to have any effect. They eat through the leaves, and in a few days destroy the plant. Knowing, as I do, that many excellent things have from time to time appeared in your valuable paper, I am in hopes that, by writing to you, I may meet with that success I have hitherto failed to obtain. If through your columns you can furnish a remedy for these pests, you will, I am surp, confer a boon not only upon myself, but also upon numbers of others, who are annoyed in a similar manner.

ROBERT T. BURNS.

Kingston, June 21st, 1869.

Note by Ed.—The red-spider, (*Acarus telarius*) is a well known pest on house plants, and in vineries. The best remedy for it, (and we may mention, for mildew also) is the application of powdered sulphur. Where many plants require to be treated, the easiest mode of applying the remedy is to make use of a bellows constructed as follows:—"Cut the nose off a common pair of bellows, and attach in its place a tin tube, about an inch in diameter, and from one and a half to two feet in length as required, turned up a little at the end, and covered at the tip with wire gauze. About the middle of this tube above fasten a small hopper with a cover in which to hold the sulphur, having a hole large enough at its base to allow the powdered sulphur to drop slowly through; a single puff of air will raise quite a cloud of sulphur, which may be directed wherever it is needed." These bellows can be procured, ready-made, at Piper's, Toronto.

Chinch Bugs.

The Editor of the *American Entomologist* thus sums up a long and valuable article upon the Chinch Bug:—"We consider the following important points to be firmly established:

1st. Chinch Bugs hybernate in the perfect or winged state in any old dry rubbish, under dead leaves, in old straw, in corn-shucks and corn-stalks, among weeds in fence corners, etc., etc. Therefore all such substances should be burned up, as far as possible, in the spring.

2nd. The earlier small grain can be sowed in the spring, the more likely it is to escape the Chinch Bug; for it will then get ripe before the spring brood of bugs has had time to become fully developed at the expense of the grain.

3rd. The harder the ground is where the grain is sowed, the less chance there is for the Chinch Bug to penetrate to the roots of the grain and lay its eggs thereon Hence the importance of fall-ploughing and using the roller upon land that is loose and friable And hence, if old corn-ground is sufficiently clean, it is a good plan to harrow in a crop of small grain upon it without ploughing it at all.

4th. A single heavy rain immediately checks up the propagation of the Chinch Bugs. Continued heavy rains diminish their numbers most materially. A long-continued wet season, such as that of 1865, almost sweeps the whole brood of them from off the face of the earth; but from the rapid rate at which they multiply, there will always be enough left for seed for another year. It may be laid down, not only as a general, but as a universal rule, that this insect is never ruinously destructive, except in those sections of country where there is continued hot dry weather; and that if, in two adjoining districts, there has been a dry summer in one, and much wet weather during the summer season in the other, however plentiful and destructive the bug may be in the first district, it will scarcely be heard of in the second."

White Grubs.

To the Editor.

Sir—I send along with this three specimens of an ugly looking chrysalis or caterpillar, which lives mostly under ground, and does a deal of mischief in the garden, and is very plentiful this year. It appears to me they live on the roots of vegetables and flowers too. I have sometimes wondered to see fine healthy strawberries, and even tomatoes, fade all of a sudden, and on taking hold of the top it came away at once. Some two or three years ago they destroyed a number of fine double balsams in this way. On hunting round the roots, I found one or two thumping fellows like those I now send. They are something like cockchafers: but perhaps you will favour your readers with a short sketch of them.

F.

Fergus, June 25, 1869.

Note by Ed.—These specimens sent were what are commonly called "White Grubs," the larvæ of the abundant "May-beetle," "June-bug," or "Cockchafer," (*Lachnosterna quercina*) as the parent insect is variously termed. A brief notice of this pest is given in our last issue, under the heading, "A Batch of Noxious Insects," and a fuller account, with woodcut of the beetle, in the Canada Farmer for July 2nd, 1866, page 199.

The Potato Sphinx.

R. C. T., of Comber, Co. of Essex, Ont., has sent us a specimen of the curious chrysalis of the Potato Sphynx (*S. quinque-maculata*. Haw.), which is remarkable from its long trunk-like tongue-case, attached to the body like the handle of a jug. From this chrysalis a large and handsome greyish hawk-moth comes out about this time of the year, and may sometimes be seen at dusk, hovering like a humming-bird over flowers, and extracting their honeyed juices with its long flexible tongue. The caterpillar, which is produced from the eggs of this moth, grows to an immense size, and feeds voraciously upon the leaves of potatoes and tomatoes; its depredations are chiefly observable about the end of August or beginning of September, when it has attained to its full size. Were it to appear in great numbers it would, of course, be very destructive, but it is seldom common enough to be more than an object of curiosity. Our correspondent will find a fuller account of the creature, with life-like pictures of it in all its stages, in the Canada Farmer for Dec. 2nd, 1867, page 365.

Emperor Moth Cocoon.—The same correspondent has also sent us an old silken cocoon of the large Cecropia Emperor-moth, which he probably took off one of his apple trees. As he has not asked for any information respecting it, and our space is much occupied just now, we must content ourselves with referring him for pictures of the moth and cocoon to the Canada Farmer for Oct. 15th, 1868, page 316.

Currant-bush Saw-fly in Nova Scotia.—We have just received from a friend who resides at Halifax, Nova Scotia, some specimens of this pest of our gardens, with the statement that it is very numerous and very destructive in that neighbourhood. It seems that our Lower Province friends are as badly afflicted as we are with this unmitigated pest. We hope they will not class it among the other Confederation grievances, and accuse Upper Canada of having sent it to them on purpose!

The Wheat Midge in Kentucky.—The midge is making terrible inroads on the wheat in the vicinity of Mayslick, in Mason county. This will prove a great calamity to that portion of the State, as the farmers this year were making a last effort toward raising wheat as a staple production of the county. As seen with the naked eye, the wheat fly and the midge appear no larger than the eye of a very small needle, but when subjected to microscopic examination they resemble the tobacco worm, the fly being perfectly black, and the midge of a golden hue, and so transparent that the blood may be seen coursing through its body.

Currant Worms.—Our valued correspondent "F," of Fergus, Ont., has sent us some leaves of the currant with the white eggs of the saw-fly along the ribs on the under side, and says that "last year was the first time the currant pest appeared here, and if it is to be an annual visitation, amateur gardeners may as well give up the business." Instead of giving up the business, we should recommend the good people of Fergus to make a strong and united effort to get rid of the pest, and give it such a check by means of hellebore that it will take some time to get ahead again. Suppose Mr. F. and his friends were to get up a few prizes, and encourage the destruction of these and other pests. We think he would find it a paying speculation. A reward of some choice fruit tree, new shrub or plant, might be offered for the cleanest kept garden, in an insect point of view, lesser rewards for those that come next, and something, down to an Early Rose potato or a strawberry plant, for every one who joins in the good work. Let us hear from him again on the subject.

Uses of Cockchafers.—Through the columns of the *Moniteur Scientifique* one learns that nothing can be better to grease machines with, and prepare salad, than cockchafer oil. In Prussia the people have reached the advanced stage of making cockchafer flour, which at present is only employed for the purpose of making cakes for young pheasants, partridges and quails. In this country (France) an attempt has been made to introduce the white worm or larva of the cockchafer into the kitchen as a substitute for the snail, but gentlemen who are voracious where *Helix pomatia* is concerned, turn up their noses at the grub of *Melolontha vulgaris*. A savant of the name of Jonglet proposes to extract from the cockchafer colouring matter which, it is said, will make rapid strides in industry and create a small revolution in the commercial world. He states that he can get yellow out of the obnoxious insect of a colour between chromium and gold, and that each cockchafer yields a few centigrammes. Several specimens of silk dyed with this new colour have been exhibited and much admired. Taken all in all, the cockchafer, what with the amount of manure he furnishes when slain in proper quantities, and the uses above mentioned, stands a fair chance of being classed as a valuable insect, and some day we may hear philanthropic persons calling out against their wanton destruction—*Land and Water*.

Grape-vine Caterpillars.—About a month ago we received from Mr. James Brown, of Toronto, a specimen of a small caterpillar that was eating the tender buds of his Clinton grape-vines. When it first came into our hands it was exceedingly small, and nearly as fine as an ordinary cotton thread; it gradually grew, however, in length and girth, and appeared very nearly full-grown, when yesterday, to our regret, on opening the box to give it its daily supply of food, we found it shrivelled up and dead, and on a leaf alongside a suspicious-looking silken cocoon, which probably contains the pupa of the ichneumon that destroyed it. How it could have got at the caterpillar is a mystery to us. It is very provoking to an entomologist to find, after weeks of care and attention, that his pet specimen, to whose development he looked forward with much interest, has succumbed to the insidious attacks of some parasitic foe, and yet this often happens. It is on this account, and not from greediness, as might possibly be fancied, that we always ask our friends to send us plenty of specimens. Out of a number we feel pretty sure of being able to raise some. The same gentleman sent us last week two more caterpillars, also infesting the grape, of the same Geometer, or Span-worm family, as the previous one, which we are now endeavouring to raise, and hope to have better luck with. They are nearly an inch long, and of a beautiful green colour, with a line down the back from head to tail, of deep velvety brown or maroon colour, edged with white; the intersections of the segments are also marked with transverse white lines. Like the preceding caterpillar, they are new to us, but we shall do our best to rear them, and, if successful, give an account of them at some future time.

Apiary.

Irregular Swarming.

To the Editor.

Sir,—There was an incident took place this week in my bee-keeping experience, concerning which I should be glad of an explanation. I had on this day week two hives, one of which swarmed. The bees lit in a small apple tree, and I put them into a hive. They were no sooner in than they all came out again, and swarmed on the side of a box under the hive. I put them in again, and they came out as before. This time, however, about two-thirds of them went back again into the hive they came out of at first, and the rest clustered on the box as before. I now went and brought another hive and put those that remained into it, and they staid there. On last Monday the other hive swarmed, and part of the swarm, about a quarter I should say, clustered on the side of my bee-house, the remainder forcing their way into the old hive that had swarmed on the Saturday before. I took those that were on the bee-house and carried them away to the small swarm I had put in on Saturday, and they went in very willingly, and all have gone to work since. In the afternoon of Monday they swarmed again out of the old hive, both those which had gone back in on Saturday, and those which went in on the forenoon of Monday. I then put them into the hive in which they would not stay on Saturday, and they have gone to work all right since. My two new hives, therefore, are composed of part of each of the two old ones. Can Mr. Thomas give any explanation of this strange conduct on the part of the bees?

DANIEL SULLIVAN.
Malcolm P.O.

Reply—When you hived the first swarm that clustered on the apple tree, you failed to get the queen. She probably took wing. When you hived them the second time she was still missing, and of course they would not stay, but came out, and commenced to enter another stock. But before they had all entered, the queen arrived, and lighting upon the box, a portion clustered with her. These you hived, and they staid.

The second swarm that issued, instead of clustering properly, part of them commenced to enter your other stock, which is quite usual for bees to do. The queen went with those that entered the other stock, and those that clustered on the side of the bee-house were without the queen, and if left to themselves would also have gone into the other stock; but you hived them with your small swarm, where they found a queen and were satisfied. In the afternoon the queen that entered the old stock came out again with a swarm. When she went in there was no queen there, as the queen was in your new hive with your small swarm taken from the side of the box, but she found queen cells, and they were guarded, and she would not stay. If the bees had allowed her to destroy the cells the stock would not have swarmed again in the afternoon.

It is well always to sprinkle bees with cold water while in the cluster before hiving, as neither the bees nor queen are as likely to take wing if sprinkled with water.

J. H. THOMAS.

Ontario Bee-Keepers' Convention.

I am requested to announce to the bee-keepers of Canada and the United States that a Bee-keepers' Convention will be held in the City of London, Ontario, at the time of the coming Provincial Fair, on Tuesday, Wednesday, and Thursday evenings, Sept. 21, 22, and 23.

Bee-keepers who may have subjects to offer for discussion, or suggestions to make, will communicate the same to me, any time during the month of August, in order that they may be arranged and published as early as possible in the month of September, when the hour and place of meeting will be announced.

I trust there will be a large attendance of the bee-keepers of Ontario and Quebec, and those interested in bee-culture.

A warm invitation is extended to bee-keepers in the United States to meet in convention with us.

J. H. THOMAS,
Apiarian.

Brooklin, Ont., July 30.

Journals giving the above an insertion will promote the interests of bee-culture in Canada.

Bee Queries.

Why do bees swarm before the honey-boxes are filled?

Are young bees generally hatched in the honey-boxes, or are mine an exception?

CULTIVATEUR.

Reply.—Bees swarm before honey-boxes are filled, because they have become very numerous, the hive is filled with brood, and they cannot labour to advantage.

Young bees should never be hatched in the honey-boxes. If boxes are put on at the time of hiving, and the bees are allowed to enter them, the queen is very likely to enter also, and as the first comb will be built there, she will commence to lay there, when, of course, young bees will be hatched there.

J. H. THOMAS.

"A young apiarian" disclaims any intention of wishing to advertise any particular hive, and assures us he made his enquiries respecting the Mitchell hive solely with the view of eliciting information.

Bees Gumming Frames.

To the Editor.

Sir,—Would you be so good as to answer the following enquiry: Can bees be prevented from gumming the movable comb frames in Thomas's hive, and if not, by what means can the gum be removed so as to move them?

Last year I got Mr. Thomas's patent hive, put a strong first swarm into it, examined it, according to the direction of his book, to see that they were building their combs straight in the comb frames: afterwards I went to turn down the revolving band, to give them a near way of access to the honey-box, but it was so gummed that it was with difficulty I got it moved.

This spring, I wished to get an Italian queen. Before I would order one I thought it best to examine my hive, but when I went to move the comb frames I found them gummed fast; I took a knife and cut the gum at the top and with difficulty succeeded in getting one loose. I tried the next one to it in the same way, but broke the frame without being able to start it. I thought "movable comb frames" a misnomer. NOVICE.

Ans.—Bees will gum the frames of any frame hive, and they cannot be prevented from doing so. To one who understands them, the gumming is not of the slightest account. I am daily removing frames from my hives, and never think of removing the gum, nor do I have any trouble with it. All that is necessary is to take a common screw-driver, and put it in between the hive and frames, prying them first to the rear and then to the front of the hive, which will loosen them, when they can be removed without difficulty. Blow a little smoke on the bees, and drive them down out of the way, and when the frames are loosened, place four or five of them nearer together than when in their proper position, which will give abundance of room for removing a frame.

Brooklin, Ont. J. H. THOMAS.

The only instance of the occurrence of the very distinct genera of *Apis* and *Melipona*, both honey-storing genera, yet known to exist indigenously in the same locality, is found in the island of Java.

The enormous quantities of honey produced may be comparatively estimated by the collateral production of beeswax, which it exceeds by at least ten to one. When we reflect upon what masses of the latter are consumed in the rites of the Roman Catholic and Greek churches throughout the many and large countries where those religions prevail, we shall be able to form a general estimate of the extensiveness and universality of the cultivation of bees. Nor are these the only uses to which wax is applied, and the collective computation of its consumption will show that bees abound in numbers almost transcending belief.

Correspondence.

The Woodpecker.

(To the Editor.)

Sir,—Having read some articles, recently, in your periodical, anent the supposed injuries inflicted on trees by woodpeckers, I trouble you with the following anecdote.

A few years ago, during mid-winter, while standing in my yard, I noticed a woodpecker (*Picus erythrocephalus*) tapping a stick of dry, *sapless* cordwood. After watching its persevering attack for some time, I took the stick of wood and split it with an axe, laying bare the grub of a borer, discovered by the unerring instinct of this unseasonable bird.

I replaced the stick in its former position, but having been called into the house on a matter of business, I was unable to watch, as I had intended, the further movements of the bird. On returning to the yard, however, an hour or two subsequently, the grub had disappeared, and I entertained the pleasing hope that the woodpecker had not been disappointed of its well-earned meal.

B. A.

Lakefield, North Douro, C.
July, 1869.

Wells.

To the Editor.

Sir,—I have been reflecting upon the common and old time method of constructing wells, and have arrived at the conclusion, that it is an unnecessarily clumsy and expensive contrivance, and fails in some important particulars; and, as you may already surmise have also arrived at the conviction, that the purpose may be more cheaply, as well as more perfectly accomplished, by a plan of my own, which I will now briefly describe for the benefit of all whom it may concern. Let it be understood, however, that I have not carried my scheme into practice, and cannot therefore warrant it. The well having been dug in the usual manner, I would suggest, that, instead of being walled up with stones, it be tiled in the following manner. The bottom of the well having been first covered to the depth of six or eight inches, with coarse gravel, seven tiles of the largest size that can readily be obtained are to be arranged in it: one in the centre, and six encircling that one, all of course standing vertically; each alternate one of the circumferential six being propped up with brick, or stone, so that it may stand half its length higher than the other three, in order that, as the tiles are built up, the joints of the outer ones may be broken and the danger of displacement be thereby lessened. The space outside of the tiles and the interstices between are now to be filled up with fine gravel. Then another tier of tiles is to arranged above and in line with these, and packed about with gravel in the same manner, and so on up to within say ten feet of the surface. Each of the outer six tiles is now to be capped over with a flat tile or stone, over which one or two feet of fine gravel may be filled around the central tile, which is to be continued up to the surface, and for the remaining eight or nine feet well packed around with clay. If for the last ten feet nearest the surface sufficiently large glazed tiles, with one end large enough to receive the lower end of the one above it, could be obtained, it might be well to use them, and lute or cement the joints. To raise the water, a pump would of course be necessary, with a bottom log or pipe small enough to enter the central cone of tiles readily. It will now be seen that a sufficiently large reservoir is formed by the tiles concentrically arranged in the lower part of the well, (for they all communicate through the coarse gravel in the bottom), and that the impurities which find their way into ordinary wells from above are perfectly shut out. Rats, mice, toads, worms, &c., cannot get into it; nor can surface water or the leakage of drains enter it, if glazed tiles be used as recommended, and the reservoir be kept deep enough below the level of neighbouring drains. Charcoal might, if thought desirable, be mixed with the fine gravel used, to make a more perfect filter, and instead of the glazed tiles, four thick hemlock planks, with their sides well nailed together in a square form, might be used. It may not be unworthy of notice that such a contrivance would much more nearly resemble a natural spring, and the water being more closely confined, would be more like spring water than that from an ordinary well, which from its exposure must part with a considerable portion of its carbonic acid. No one, to whom this plan, on a thorough consideration of it, may approve itself, will, I hope, be deterred from trying it because it is not patented. Very little heed is, according to my experience, usually given to advice proffered gratis, still it may possibly be good sometimes. It is travelling beyond my subject, but perhaps you will allow me in this connection to offer the suggestion, that in the talk we hear just now about the abrogation of the patent laws, sufficient attention has not been paid to the effect which such abrogation would have in preventing many really good inventions from being brought into practical operation. In minor matters a patent is regarded as a sort of guarantee that they are worthy of trial, and therefore serves as an inducement to bring them into use; while in larger ones, which involve the expenditure of much skill and capital, no one might care to risk an experiment even though information with regard to the invention was supplied gratis, without being protected in the exclusive right to make, use, and sell it after the invention was reduced to practice, and fairly introduced to the public.

W. D. EASTWOOD, M. D.

Whitby, July 27th, 1869.

Note by Editor.—The above communication may suggest a valuable hint or two, even if the plan proposed should be deemed too expensive, and require modification. We presume by tiles, Dr. Eastwood means earthenware *pipes*, like drain tiles. We are satisfied that both wells and cisterns, especially in towns and villages, require some provision for filtering the water to render its use as a beverage perfectly wholesome, and the subject is one of very great importance that has been too much neglected. We shall be glad to hear from our correspondent on the other subject to which he refers.

Early Reaping Machines.

To the Editor.

Sir,—In a recent issue of your journal there appeared a communication from W. B. Catter, on Bell's reaping machine, stating that he had seen a drawing of it in an old agricultural magazine of 1815. I think it no detraction from the merits of Bell's invention to say that several reaping machines had been tried before his time. Several machines had been invented, but were not brought into general use, as the prejudices of farmers themselves have always been slow to adopt and encourage new methods of harvesting.

As early as 1812, the late Mr. Smith, of Deanston, brought out a reaping machine to compete for a premium of £500 offered by the Dalkeith Farmers' Club for an effective reaping machine, and though not altogether successful, after several trials, Mr. Smith received from the club a piece of plate of the value of fifty guineas, besides silver cups and a gold medal from Russia. This machine appeared at intervals with different modifications until the year 1835, when it worked pretty successfully at the meeting of the Highland Agricultural Society at Ayr. At that trial it was in the form of a revolving cutter, the horses walking behind, and cut a regular swath 5½ feet wide.

In 1815 a Mr. Scott, of Ormiston, made a reaping machine somewhat similar to Mr. Smith's, but it received no encouragement, and was laid aside.

In 1820 or 1821 a Mr. Mann, of Raby, in Cumberland, England, invented a reaping machine on the revolving principle. His cutter, instead of being circular, was twelve-sided, and instead of pushing his machine from behind, he placed his horses before the machine, and they walked by one side of the standing grain, as all machines at present do.

In 1822 a Mr. Ogle, of Rennington, near Alnwick, England, invented a reaping machine, which worked upon wheat and barley, but as it received no encouragement, only one was made. Then in 1826 the Rev. Mr. Bell invented his machine, which has been used on his brother's farm ever since 1828. If Mr. Carter is correct about the date of the magazine, the drawing to which he refers must have been a representation of one of Smith's machines, or of Scott of Ormiston's machine, as Bell's was not invented till 1826—a year, by-the-by, noted as the dry summer.

W. R.

Cobourg, July 13th, 1869.

Gypsum.—"Cultivateur" need not hesitate to apply gypsum to clover intended for a seed crop.

Ditching Machine.—E. P. Beaufort enquires if we could refer him to any manufacturer of a good ditching machine. We do not know of one in Canada. The drain tile ditching machine advertised and noticed in our columns some time ago, is only adapted for its specific purpose, and not for constructing an open ditch. If any such machine is manufactured in Canada, let the maker advertise. An implement of this kind is much needed.

The Canada Farmer.

TORONTO, CANADA, AUGUST 15, 1869.

Crop Prospects in Europe.

By the latest English agricultural papers we find that there has been a great improvement in the crop prospects. Dry weather had set in, and continued for some days, and the hay crop was being harvested. The early wheats had been much injured by continued wet cold weather, but those fields that were late in blooming were turning out better. It is estimated that the English wheat crop will be below an average, as also will barley, while oats were promising to be over an average.

The wheat crop in France will also be deficient in weight and quality, while in Italy, Germany and Hungary, it would be fair, but not equal to last year in yield.

Under the influence of the fine weather prevailing, the rise in the price of grain had been checked, and on July 13th the top price of wheat in London, England, was 55 shillings per quarter of 480 pounds, while the average was 54s. 3d., or 12s. 4d. less than at the same time last year.

To make up for the deficiency in the cereal crops, the pulse crops appear to be considerably above an average in yield, while the hay crop is unusually heavy, grass abundant, and root crops of all kinds, including potatoes, have never promised so great an abundance as they show this year. As a consequence, meat, which was unusually dear last year, is now comparatively cheap, and the excess of consumption in meat will go a good way towards keeping down the prices of grain. Yet, on the whole, we think that wheat is too low, and will go up by the Fall.

In hops the report is that the crop will be a very short one indeed. The plants are badly affected with vermin and blight, and the advent of dry warm weather seems rather to have increased than diminished the evil. There will be less than half a crop, and that of inferior quality.

Notes on the Weather.

The past month of July has been a continuation of the preceding one in the over-abundance of moisture, and the absence of any high degree of heat. As a consequence, we find that the hay crop has been scarcely more than half got in by the time the winter wheat required attention. The great abundance of rain has rendered the hay crop heavier than was anticipated, and the cereal crops show a very large growth of straw, while the later ripening fields of wheat are more or less rusted.

The mean temperature of the month is 64° 7, being 2° 6 below the average of 29 years, and 11° colder than last year. But in two years in the last 29 has July been colder, namely, in 1843 and 1860.

The highest temperature was 84° 9 on the 15th, the lowest 49° 8 on the 16th.

There have been 4 clear days, 27 cloudy days, and 15 days on which rain fell. The rain-fall has been 4.610 inches, of which more than half fell on two days, namely, 1.600 on the 15th and 1.280 on the 27th. The rain-fall exceeds that of July last year by 4.100 inches.

There have been no less than nine thunderstorms during the month, so that there has been quite an excess of electricity in the atmosphere, rendering the season a comparatively healthy one, notwithstanding its wetness.

The prevailing winds have been from the west and south-west.

The nights and mornings have generally been very cold, and so helped to check any undue tendency to rust in the grain crops, which do not seem to have been injured to any extent by rust, although many of the later samples of grain we have seen are more or less rusted. The unusual coldness of the weather also

seems to have checked the ravages of the midge; we hear scarcely a mention of its appearance this year, except occasionally in the barley, and have great hopes that from the check it has experienced this year, it will become nearly used up, and prove less troublesome to our grain crops in the future than it has in the past.

Reclaiming Marsh Lands.

Some time since, we referred to the official reports of the engineers appointed by the Public Works Department of Ontario to examine into the cost of reclaiming marsh lands in the Counties of Kent and Essex, and, we believe, in the County of Bruce also. It is well known that there are extensive tracts of fertile land lying idle in those counties, simply because they are too much flooded to allow of cultivation. The result of the surveys and examinations by the engineers was to show that a proper system of drainage would in each case make available for agricultural purposes many thousands of acres of good land, though at the same time, of course, it was shown that the cost would be very considerable.

We understand that since that time an engineer has been employed by the Ontario Government, making a similar examination of the swamp lands in the township of Brooke, in the county of Lambton. The Brooke swamp extends along the entire westerly side of the township, and is about three miles in width at the north end, and over seven miles at the southern extremity of the township. The levels taken along the concession lines and road allowances, show the surface to be an inclined plane, having two inclinations, one falling to the west, and the other to the south. The easterly limit of the swamp is an irregular line nearly parallel with Bear creek, but the inclination is such as to prevent the water falling into that stream. The surface of the land is very level, and the soil good—being a deep black mould over clay. If drained, it would make rich land for agricultural purposes. The timber is varied, and includes black ash, elm, soft maple, birch, beech, maple, cherry, basswood, oak and tamarac. There is an extensive marsh of black alder and dogwood. The township of Enniskillen, which adjoins Brooke, also contains a large quantity of wet land; but no survey has been made of that, though it is believed that the drainage of the eastern part of that township might be combined with that of Brooke, and a saving of expense be thereby effected.

For the drainage of the tract in Brooke before described, it is proposed to have two main drains crossing the concession road lines at right-angles, and discharging into streams leading into Bear Creek. To render the main drains effective it is proposed to have branch drains leading down each concession road line, and emptying into the main drains. The chief main drain is to be 10 miles, and the other main drain is to be 3½ miles in length. The size and discharging capacity of these drains are to be ample for carrying off the water in the spring. The branch drains which are to drain the concession lines will be in the aggregate 22 miles in length. The cost of the chief main drain is put at $1,595 per mile or $15,950 for ten miles. The other main drain at $1,336 per mile will cost $4,449, while the branch drains at $500 per mile would cost $11,000. The total cost would therefore amount to $31,399. For that expenditure it is claimed that no less than 28,400 acres would be reclaimed from swamp. The cost would be $1.10½ per acre. The higher land surrounding this swamp is readily bought at $10 per acre when any of it is offered for sale. The present value of the swamp land aside from the timber is very small. Putting its value aside from the timber at $3 per acre, and assuming that if drained it would be worth $8, it is computed that the proposed drainage scheme would add $5 per acre to the value of the whole tract. At that rate the gross increase in value would be $142,000, and certainly if that could be procured for an outlay of less than $32,000, the margin would be a very good one. About the importance of reclaiming marsh lands for settlement where it can be done, there is not room for two opinions. Aside from the pecuniary advantage that may be secured, there is commonly the still greater advantage of removing a source of malaria and disease, and destroying a haunt of wild beasts and noxious creatures of other kinds. Once it is reclaimed, marsh land frequently makes the best of agricultural soil, because it has been for generations the receptacle of vegetable and other fertilising deposits. At the same time, it is necessary for the Provincial Legislature to proceed with caution in dealing with these swamps. Preliminary estimates are proverbially unreliable, and it is possible that a scheme might be undertaken which in practice would prove quite inadequate, and would leave the swamps after all but half drained. Unless they can be thoroughly drained, and the land made good for farming purposes, there is no use of meddling with them at all. No doubt the whole subject will come before the Legislature next fall, when with all the engineers' reports before them, Members will probably be asked to consider the Ministerial policy, whatever that may be.

Gentlemen Farmers.

There is a very general impression abroad that farming does not pay, and cannot be made to pay, except where the farmer does the lion's share of the work, and makes a slave of himself; and that to be a successful farmer, a man must either be a boor, or possess capital enough to go largely into breeding fancy stock, and spend his time in travelling about from place to place to find purchasers for them at high figures, while his farm is left to the care of a manager. A good deal of ridicule has been unjustly attached to the term "Gentleman Farmer." The truth is, a gentleman farmer is one who has been not only brought up to farming as a business of life, or taken to it as a means of livelihood, but has also received such a good education as to be able to divest himself of prejudices, and use his brains to assist his hands in his labours; one who looks upon his calling, not as one of unceasing toil and drudgery, to be followed in the beaten path made by his father or grandfather before him, but rather as a profession, and is therefore able and willing to bring the lights of science to his assistance. It is one thing to be a "gentleman," and quite another to be a "genteel man." One can be a gentleman and yet find it no disgrace or dishonour to hold the plough, drive the team afield, or be able at any time to throw off his coat, and not only work himself on the farm, but show his very laborers how their work should be properly done, by himself setting the example. The thing known as "gentility" is a modern, mawkish, sentimental humbug, compounded from the concentrated essences of conceited ignorance, pride and laziness, and those who affect it are set down as asses by every sensible member of the community. The London *Advertiser*, whose editor, though he makes no pretensions to a knowledge of farming, has a just appreciation of the pleasures and profits to be derived from the pursuit of agriculture, gives in a late number, a sensible article under the same caption with which we commenced this, and we think some extracts from it well worth transferring to our columns.

"We should like, if in this country we could show that a rich man, of cultivated intellect and fine taste, can live on a farm and make it pay, and be what the

world calls a gentleman through it all. For this desirable end there needs so much land and there needs such a kind of a man. The land is easily got. He who wants it has but to ride across the country, and when he sees a farm he thinks he would like, go and ask its price. It is more difficult to bring the right kind of man to the land than the right kind of farm to the man. The man must have capital. This is indispensable to a farmer who does not lay himself out for manual labour. He must have a love for country life and pursuits. A discontented ruralist is like a bed of Canada thistles; he infects the whole neighbourhood. He must have application. Farming success is made up of small gains. A farmer who lives by farming must make his farm serve him, just as a man of business makes his business his study, and makes it serve him. A gentleman farmer must not stop a team at work to get one of the horses for a buggy drive into the city. He must do largely as other farmers do. Useless expenses are to be kept down. The active every-day superintendence of operations going on must be his chief employment. He will find that there is plenty to do on a large farm without working much with his own hands.

And the more cultivated, gentlemanly men who engage in this most ancient and honourable calling the better. It yields a surer return for ten thousand dollars invested than any kind of business that we can name. It affords the most agreeable alternations of exercise and healthy quiet. It is a life of healthful vigour. It is a business that can very properly and safely be recommended to a man's children, and it is above all others suited to that calm evening of life so many are looking forward to and so few attain."

The great want of the country is more gentlemen farmers, men who can and will not only put their shoulders to the wheel when necessary, and work, but also direct their labours, as well as the labours of others, with an intelligent discrimination of the necessities and requirements of the soil, the season, the crops, and the markets. In order to have more of such a class, we must endeavour to obtain and support agricultural colleges, where the more intelligent and sensible of our rising generation of young men can be taught how to put into practical application the principles of modern agriculture, without being first subjected to the drudgery of working under a boorish taskmaster at the outset of their career, in order to acquire a practical knowledge of the details of their profession as agriculturists. The time is not far distant, we hope, when schools of agriculture will become a necessary part of our educational system.

Fruit as Food.

It will be admitted by all that the subject of the food we eat, and the ways and means of using it in such a manner as to render life healthful and enjoyable, is one of importance, deserving of more attention than is usually given to it.

There are two standpoints from which we may view the matter of the value of the food we consume, and its relation towards keeping up the stamina of the mind and the healthful vigour of the body. One is that of the Chemist, who with the help of his retorts, his scales and weights, his long array of intricate symbols and figures, will give us a learned dissertation tending to demonstrate that while wheat, or the flour made from it, contains eighty to ninety per cent of nutriment, potatoes or turnips contain but little, and fruit still less, and that therefore wheat, if not the only food especially adapted to our wants, is at least the only one we can use to advantage.

The other is that of the Physiologist, who, unable to discover any direct or tangible method of controverting the facts and figures given by the Chemist, still maintains, with truth, that materials apparently containing but little nutriment in themselves, do, when used as food, exercise a most beneficial effect on the system of the animal frame and conduce largely towards keeping the functions of life in a state of healthfulness and vigour.

If we take the estimate of the value of fruit, as put upon it by the chemist, we should come to the seemingly correct, yet false, conclusion that the best of fruits contain but little nourishment. Yet it has been proved, time and again, that human life can not only be supported for a length of time on fruit alone, but also kept in a healthier condition than if wheat only had been relied upon. There are times and seasons when a pound of ripe strawberries or grapes are worth more as food to man than the same weight of wheat or beef, because they satisfy a want felt at times in that wonderful and curious structure composing the human body. During summer we do not require to consume food in order to generate animal heat as in winter, therefore lighter and less nutritious diet will fulfil all the requirements of the system.

It is especially in the hot season of summer that the lighter and more acid fruits, such as strawberries, raspberries, currants and grapes exercise a beneficial influence on our system when taken as food. The use of fruit keeps the blood cool, dilutes it to a proper degree of fluidity, and prevents feverishness. It has a tendency to keep the kidneys in a high degree of healthful action, and the bowels regular. In children the use of ripe fruit tends to keep them free from worms, it having been established by experiment that the juice of ripe currants will kill an intestinal worm in three minutes, while Morphia failed to do it in less than eleven minutes.

Since the introduction and cultivation of small fruits in the Western States so largely as to enable all to obtain fruit during the summer season, it has been remarked that ague and intermittent fevers have become greatly modified, and attacks from them much less frequent. One county in Ohio noted for its liability to induce ague, has, since its inhabitants have been induced to grow and use fruits, become comparatively healthy.

The most eminent physiologists now concede that often the best medicine to ensure a constant freedom from disease, and a restoration of health to the vital functions of life, when they have become deranged, is ripe fruits freely used.

The worst cases of dyspepsia have been cured by the free use of ripe fruit.

Were we to substitute fruit in place of those foods and drinks we use, that influence the passions and inflame the blood, we should need less restraint for wrong doers, as our heads would be clearer, our blood cooler, our nerves steadier, our impulses more subject to reason, and our lives would be a hundred per cent truer and better. But it is essential that the fruit we eat in its raw state should be ripe, or that its acidity should have become so far modified as to render the article palatable and sweet to the taste. The best time to eat fruit is in the morning, which is just the opposite of the practice generally followed. In hot climates, fruit is eaten at breakfast and luncheon, rather than at the evening meals, but is always considered wholesome whatever time it is eaten.

We cannot avoid saying something on the practical point, of how the general public are served by those, who, if they chose, could serve them well, but instead, think to serve only their own ends, and the interests of their own pockets, and in doing so put the enjoyment of the greatest blessing of life, health, beyond the reach of any except those who have well filled purses.

This season there is an enormous crop of small fruits, especially strawberries, raspberries, blackberries, and currants, and so great a breadth of land is now devoted to their culture, that there is no excuse for maintaining the exceptionally high prices that have hitherto ruled in the fruit trade. Strawberries are selling in the United States, from the growers, at 5c to 8c per quart, and the average price to the end of the season will not reach over $1 50 per bushel. 418 tons of strawberries were brought into Chicago, from a single point in Southern Illinois, between 26th May and 10th June. 150 bushels per acre is a common yield this season. Raspberries and

blackberries will give more. At Oakville, 22 miles from Toronto, there is a most abundant crop of strawberries this year. So large is the crop, that the cost to consumers need not exceed ten cents per quart, and still a very large margin of profit will be left to the dealer.

The great cause of complaint is against the exactions and rapacity of the middlemen and fruit dealers, who come between the grower and consumer, and monopolize more than a lion's share of the profits in the business. One dealer in Toronto, we are told, makes a clear profit of $75 per day on his sales of strawberries alone, since the commencement of the season. The retailers not only keep up the price of fruit to an exceptionally high figure, but make a double profit by the way they serve out the fruit. The grower, whether he sells by the quart or bushel, gives full measure, heaped up. The dealers transfer the fruit into little berry boxes, which they sell as a quart each, while in point of fact these boxes vary greatly in size, some of them being so small that three of them will barely hold a quart, others if heaped would still lack full measure. To avoid this cheating, which will otherwise become established as a custom of the trade, let consumers either insist on having the fruit measured in a legally stamped measure, or buy only by weight, in which there can be no deception. A full quart of strawberries, raspberries, or in fact any fruit that has not a large amount of stalks attached, like the cherry, will weigh from 26 to 30 ounces.

Again, in order to keep up artificial prices, large quantities of fruit are destroyed, or fed to pigs, by dealers, and what is worse, they will often put out a few boxes of a large consignment just received in fresh condition, and mark them up to high figures, and sell a few, perhaps half. A day or two afterwards they sell the balance at a reduction, when they well know, that fruit becomes unwholesome in a short time, through the setting in of fermentation, and they could have sold the whole at once, had the price been but reasonable. Partially decayed and fermented fruit has a great tendency to cause bowel complaints in warm weather. In buying fruit select only that which is ripe, fresh, and sound.

Fruit and Flower Stealing.

One of the greatest troubles the fruit grower has to contend with is the constant disposition shown by the younger members of the community in which he resides to appropriate to themselves the fruits of his labors; this is especially the case near the towns and larger villages, where among schoolboys it is too often considered a very venial offence to rob the garden or orchard of some neighbouring farmer or horticulturist. Only those who have grown fruit and watched their trees with care to save them from the many enemies they have to contend against, can form an idea of the terrible annoyance one suffers when he finds that all his care and trouble have been devoted in vain, and that just as he was about to realize his anticipations of gathering the fruit, his garden or orchard has been invaded by a parcel of boys, and not only the fruit stolen, but a vast amount of destruction done to the trees by breakage of their limbs, and to the gardens by the ruthless trampling down of vegetables and flowers of every sort. So great an evil is this becoming, as the area of fruit growing extends, that it will be absolutely necessary either for Corporations or the Legislature to interfere in the matter, and enforce as well as pass laws upon the subject, making it not only a penal matter, punishable with imprisonment, to steal fruit or flowers, but also to allow the thieves to be arrested on the spot by any person who may catch them at their nefarious work, and convicted on the evidence of one witness. Fruit stealing would be still less likely to be looked upon as a venial offence if the offender were to be well horsewhipped.

Parents and teachers might do much towards raising the standard of morality among children in this respect were they to exercise their authority to punish and put a stop to fruit-stealing, instead of passing it over as a slight offence, or boyish escapade.

Fruit stealing is not, however, confined to the boys, for we very strongly suspect that some of the lowest class of huxters in our markets do not scruple to rob orchards and fruit gardens by wholesale, when they can find a chance of doing it undetected. We have known a large orchard, loaded with choice apples, to be entirely stripped of its fruit in a single night. The only protection the orchardist can depend on is to keep a well-trained savage dog, and exercise eternal vigilance in watching his fruit, especially on moonlight nights, and very early in the morning; and we should imagine that under the new Vagrant Act, just come into force, he would be justified in arresting and bringing before the nearest magistrate any suspicious persons found about his premises, or even in the roads, at unseasonable hours.

We have noticed another practice that is becoming far too common, and that is, the stealing of flowers from gentlemen's gardens in the cities, in order to make up into bouquets, to be afterwards sold. This is a kind of Vandalism that we should not have believed could be carried out to the extent it is done in Toronto, but for the fact that in our early morning walks through the city we have observed parties entering several gardens one after the other, about sunrise, and making off hurriedly with great bundles of flowers on noticing our approach. This practice does not seem to be confined to the poorer classes, for on one occasion we noticed six or eight respectably dressed big boys going together in a party, entering every garden they came to, and gathering all the flowers they could find. Most of the city gardens are only made secure against the incursions of stray cows, pigs, and horses, and the gates left on the latch at nights. Keeping them locked would doubtless prevent these Vandals from entering them. They not merely pull the flowers, but in many cases, in their haste, pull up whole plants by the roots, and throw away the stalks in the street, after despoiling them of their blossoms. As a matter of course, no policeman is to be seen about so early in the mornings.

City Cousins at the Farm.

The dog-days have come at last, and though the heat is nothing to what it was at this time last year, still in the city, with its concomitants of dust and bad odours, it is enough to drive every one away who can manage to own cousinship, or something like it, to some friend in the country.

Farmers are generally glad to see their city cousins, whenever they condescend to "honour them with their presence," but they may be excused if in these busy times of haying and harvest, they would rather not have city folks on their hands. It is too much of a good thing to expect any assistance in the field work from those who, perhaps, have never spent a day in the country, except for pleasure.

Now, a word to our city cousins, who, we hope, will appreciate a desire on our part to see them enjoy themselves in the country, without at the same time doing so to the inconvenience of their country cousins. In the first place, do not go into the country till the middle of August, by which time the rush of the harvest season is over, and the farmers are beginning to feel some leisure. But if you must go in July, make up your minds to give as much help, or at least as little trouble, as possible, which you can do if you like. Do not take out a lot of trunks and bandboxes full of city frippery to show off to the cows, and draggle through the grass and bushes, but have everything of plain yet substantial mate-

cials, and ignore all bright red colours in dress or shawl. Drink milk, and plenty of it, or milk diluted with water. If you find you can do little or nothing in the way of help, you can keep out of the way of those who are busy.

Farmers should not be afraid to set the fine gentlemen to work. They can hoe potatoes or corn, make or pitch hay, drive the cattle to water, bring the cows home at milking time, weed the garden, and generally execute any little odd jobs that do not require much handiness. Introduce them to the dignity and the sweets of labour, and let them see how utterly helpless and insignificant they are beside those whom they laugh at in the city as "country cousins."

Report of Canadian Dairymen's Association for 1867 and 1868.

We have received a copy of this report from Mr. James Noxon, Ingersoll, the Secretary. It is a pamphlet of 154 pages, well written and neatly printed, of which sixty pages are devoted to a full report of the three addresses given by X. A. Willard, the great authority on dairy matters, and thirty pages to interesting addresses from several parties at the American Dairymen's Association meeting for 1868. Of the rest of the matter, much, if not all of it, has already appeared in our columns. Every dairyman in the country should possess a copy, and study the facts and figures embraced in Mr. Willard's addresses, line upon line and precept upon precept; and we trust that a more liberal pecuniary support will be given to the Association than by the report we see has been tendered, for, as Mr. Willard says, "Dairy farming is an important branch of agriculture, destined from year to year to further the commercial interests of the country and add greatly to its wealth." It is through such a body as this Association, and the proper promulgation of its reports, that an interest is excited and knowledge disseminated all over the country, which cannot be done unless funds are provided to carry out the objects contemplated.

The Council of the Society of Arts have this year awarded the Albert Gold Medal to Baron Justus von Liebig, Associate of the Institute of France, Foreign Member of the Royal Society, Chevalier of the Legion of Honour, &c., for his numerous valuable researches and writings, which have contributed most importantly to the development of food economy and agriculture, to the advancement of chemical science, and to the benefits derived from that science by arts, manufactures, and commerce.

Bee-Keepers' Convention.

Conventions for all purposes, political, scientific, and social, are the order of the day; and there can be no doubt that they exert a powerful influence in awakening public attention, and eliciting and disseminating valuable information founded on practical experience under every variety of condition. The Bee-keepers, both in Europe and on this continent, have availed themselves of the prevailing fashion. In Germany a very interesting meeting of apiarians was held some time back, and still more recently our neighbours in the United States held a convention for the discussion of matters connected with bee-culture—a branch of industry which has been brought within the domain of science, and is yearly assuming greater importance.

We are glad to find that the apiarians of Canada are bestirring themselves in preparing for a similar gathering at a very opportune time, and would especially direct the attention of all interested in this pleasing and profitable pursuit to Mr. Thomas' announcement, in another column, of the Convention to be held in London, during the week of the approaching Provincial Exhibition. We heartily wish success to the undertaking.

Fall Shows.—As the time of holding the Fall Exhibitions is drawing near, we should feel obliged if the secretaries of Agricultural Societies or other correctly informed persons, would apprise us of the time and place of holding the various shows in their neighbourhoods, that we may publish as complete a list as possible. We would also direct the attention of the secretaries and managing directors of the societies to the advertisement of the Globe Printing Company, who are prepared to print Prize Lists, Placards, and Handbills, in any desired style, and on the most moderate terms.

Diehl Wheat.—Mr. McNair, of Richmond Hill, showed us an excellent sample of Diehl wheat just ready to harvest. The heads are full, and the berries plump and white. The seed was obtained from last year's crop, grown on the same farm, and the yield then was over forty bushels to the acre. Judging by the present sample, the yield of this year will not be less. The heads seem heavier, and there is no sign of midge. The straw, as might be expected, is longer. By reference to the advertising columns, it will be seen that Mr. McNair will have a supply of seed for sale.

Premium List of New England Fair.—The Premium List of the New England Agricultural Society, for its sixth Annual Exhibition, to be held in connection with the Fair of the Maine State Agricultural Society, at Portland, Me., on the 7th-10th of September next, is now being circulated. We notice with pleasure that the premiums for trials of speed of horses do not absorb the larger part of the sums offered in premiums, as has been the case at some former exhibitions of this Society. The List will be sent to all who apply, by addressing Col. Daniel Needham, Groton, Mass., or S. L. Boardman, Augusta, Me.

Horticulture.

EDITOR—D. W. BEADLE,
CORRESPONDING MEMBER OF THE ROYAL HORTICULTURAL SOCIETY, ENGLAND.

Summer Meeting of the Fruit Growers' Association of Ontario.

HELD IN THE TOWN HALL, GALT, 6TH JULY, 1869.

The Ontario Fruit Growers' Association met on July 6, at 11 a.m. The President of the Association, W. H. Mills, Esq., of Hamilton, took the chair. D. W. Beadle, of St. Catharines, acted as secretary, and Mr. John Allan, of Galt, as assistant-secretary. A considerable number of gentlemen were present from London, Hamilton, St. Catharines, Brantford, Brampton, Ayr, Dundas, Paris, and Woodstock.

The room was most tastefully decorated with evergreens, the tables ornamented with splendid bouquets of flowers, fine specimens of fuchsias in full bloom, and two plants in flower of the rare and beautiful Golden-banded Lily (*Lilium auratum*) from Japan, which filled the room with its delicious perfume.

Messrs. W. Saunders, of London, D. Caldwell, of Galt, and A. M. Smith, of Grimsby, were appointed a committee to report upon the fruit exhibited.

The discussion on small fruits then commenced. The first item introduced was the

STRAWBERRY.

Mr. Bishop, of St. Thomas, said that on his ground, Wilson Albany, Bishop's Canada Seedling, and the Hooker, were the best croppers. The Wilson Albany he considered the best cropper and carrier on his ground. The Triomphe de Gand was a better carrier than the Hooker. His own seedling turns out very well, and is much sought after; he has hard work to sell the sour fruit, buyers are so much after the seedling. He sells at 12½ cents per quart, but by taking $10 or $12 worth he lets them go at 10c.

Dr. Beadle—I would like to ask what are the distinctive qualities of the seedling.

Mr. Bishop—It does not carry as well for long distances as the Wilson Albany. Its productiveness is next to that berry.

Mr. Reid, Port Dalhousie, who had on view a considerable assortment of new varieties, said—What I have brought before you is the result of the hybridizing of the last three years. The enormous berry called the Victoria Russell is between

Myatt's British Queen and Russell's Prolific. There is very little trouble in hybridizing, because Russell's Prolific is a pistillate plant; the Myatt is a perfect flower. Place them under a small box covered in with half a dozen panes of glass: they are sure to hybridize. The result has been an enormous seedling, which possesses an excellent flavour. The plant is very robust, the flower perfect, is productive, sets its fruit much better than many of our other varieties. It is not so productive as the Wilson, rather more so than Jucunda or Triomphe de Gand, on my ground decidedly so. Its flavour resembles the British Queen, the pine-apple flavour; has a very strong fruit stalk. The soil in which it is grown is a sandy loam. The plant is quite hardy. It does not ripen all at once, but continues to do so during the season.

A berry of the Victoria Russell was placed in the scale, and found to weigh an ounce and sixty-nine grains, apothecaries' weight, and measured six inches and five-eighths in circumference. Avoirdupois weight of the berry described is one ounce and a half and five grains.

Mr. Reid proceeded to describe the Excelsior, also a hybrid, between Myatt's British Queen and the Iowa Berry. (A specimen of the Excelsior shown weighed one ounce and a half avoirdupois.) Its foliage is very large, the stem stands about 18 inches from the ground. Its flavour is better than the McEvoy varieties in general, acid in taste. It is hardy and vigorous, and stands the winter well. It is a pistillate plant. The soil upon which it is grown is a firm loam. I consider the Victoria Russell the richer and more productive berry. The next berry shown by Mr. Reid was the "Ladies' Pine," a cross between the Burr's New Pine, a pistillate, and the Swanstone Seedling, a hermaphrodite. This trial was for quality, and I consider it highly superior, having met none to excel it. It has a white flesh, and a delicious pine-apple flavour, moderately productive, sets its fruit better than Triomphe de Gand, and is more productive. It is a pistillate variety.

Dr. Beadle tried it on a light sandy soil, and found it not very productive, but on placing it in a more clayey soil its productiveness was improved.

Mr. Reid then described the "Delicieux," a cross between Myatt's British Queen and Reid's Late Pine. It is very hard and firm, and will carry any distance; pine-apple flavour. It is late, but very productive, continues to blossom for six weeks, is about as productive as Triomphe de Gand, and about the same size. It has a very long stem. Has a perfect flower.

Mr. Reid then described the "Marguerite," of the Triomphe de Gand variety, but a better setter, imported three years ago from England by Mr. Goldsmith, of St. Catharines; stem lies flat, foliage strong and healthy.

Mr. Goldsmith said that in England the Marguerite is of the Triomphe de Gand family, hardy and more productive; its flavour is better, the blossom is perfect.

The members adjourned for dinner, in answer to an invitation from the local members of the Association.

After dinner.

Mr. Reid showed another hybrid, a cross between the "Wilson" and the Triomphe de Gand. Also, another specimen which he calls the "Golden Seeded," a cross between Triomphe de Gand and the Wilson.

The Secretary read a letter from Mr. A. D. Bennet of Brantford, apologising for non-attendance. He also intimated that the next meeting would be held at London, during the Provincial Exhibition.

Mr. Sanderson, Brantford, invited the members to hold their autumn meeting in that town, and said the people of Brantford would do all in their power to make matters comfortable.

The President informed the speaker that his proposition would be considered by the Board of Directors.

The Mayor of Galt, Adam Ker, Esq., was then called to the chair

Mr. Bishop, of St. Thomas, presented a plant of a second seedling called "Bishop's Canada, No. 2," from Triomphe de Gand and the Hooker; flesh red, seeds on the outside, a good carrier, and late. The Leaf-roller (an insect) injured the blossom so much that he was unable to bring a specimen along. Does not wish to sell any plants until he discovers means to destroy the insect.

Dr. Beadle wished to know if any other gentleman had also met with this insect leaf-roller.

Mr. Saunders, of London, had also met with this insect.

Mr. Reid, of Port Dalhousie, had also met with the same insect among the peaches as well as the strawberries. It eats the blossoms in the larva state.

The subject, "what strawberries have become most profitable for market?" was next taken up.

Dr. Beadle stated that he was continually in receipt of letters asking for information on this point.

Mr. Sanderson, of Brantford, said the Wilson is almost the only market berry. Other varieties are being tested.

Mr. Bishop also finds the Wilson, Bishop's Canada Seedling, the Hooker, and the Triomphe de Gand, to be the best. Hopes to be able to raise seedlings to prolong the strawberry season for a month.

Mr. D. Caldwell, of Galt, said his experience went to show that in this neighbourhood the Wilson is the most prolific. It keeps up the season for about three weeks.

Mr. Reid, of Port Dalhousie, finds the Wilson, Triomphe de Gand, Marguerite, Ladies' Pine, Jucunda, and Read's Late Pine, best for market. These extend the strawberry season about three weeks beyond the usual time.

Dr. Beadle made anxious inquiries about the much-talked of Mexican strawberry. He had been told that it was one of the humbugs of the age. He wished for light on the subject.

Mr. Reid, of Port Dalhousie, had tried the Mexican, but thought it a failure. It seems to be the little Alpine variety.

Mr. Bishop finds it to be similar to a small ever-bearing variety which he has grown for some years. He procured a few from the proprietor, but found them to resemble in every particular those he had before. He could not recommend it without believing that he would assist in swindling his fellow man.

Dr. Beadle believed it to be nothing more or less than the wild American strawberry.

Mr Holton called attention to a sample of a very fine strawberry, which had been brought here.

Dr. Beadle said it was named "Golden Queen," but good judges at Geneva, and Mr. Mills, our President, had examined them carefully, and pronounced them to be "Trollope's Victoria." There is no doubt that this Golden Queen will be hawked about by some enterprising Yankees, and sold at an exorbitant price, when the same berry, under its correct name of Trollope's Victoria, can be procured at a moderate rate.

RASPBERRIES.

"What raspberries are found to be hardy and succeed well?" was the next subject taken up.

Mr. Bishop said the Philadelphia, a red berry, promised well on his ground. His plants are loaded well. Brinckle's Orange and the Naomi are also promising pretty good. The latter he had procured from Cleveland.

Mr. Reid said Brinckle's Orange, a white berry, Fastolff, a red berry, and Franconi, he finds the most productive.

Mr. Caldwell's experience leads him to think that the Philadelphia takes the lead.

Mr. Crawford, of Brampton, said but few raspberries had ever been raised in his locality. He thought, however, that the varieties named had been most successful.

Dr. Beadle said, if this association would meet next season in or near St. Catharines, he would be able to present a number of excellent varieties of raspberry.

Mr. W. Saunders, London, chairman of the fruit committee, read the report upon the fruit examined, which was as follows :

REPORT.

Your committee appointed to examine the fruits on the table submit the following report :—

Dr. Bonner, Galt, exhibits one plate strawberries, Wilson's Albany; three plates cherries, Elton, Rockport Bigarreau, and one unknown variety; one plate English gooseberries, very fine, name unknown; one plate currants; also samples of peach, apricot and nectarine, grown in the open air. These are in a healthy condition, and nearly half-grown.

Mr. Martin, Cayuga, three varieties strawberries.

John Scott, Galt, exhibits clusters of cherries on branch for name (it is the Elton), a very fine fruitful example.

John Dowker (Galt), fine samples of Early Rose and Carter potato, also a fine plate of Munroe's scarlet strawberry.

Mr. Caldwell, Galt, three plates strawberries, Agriculturist, Jucunda, Wilson, very fine; also a good sample of white grape currants.

Mr. Tassie, Galt, specimens of Jucunda, Agriculturist, and Wilson's Albany, from plants three months out, all very fine; also plate of White Smith gooseberries, and a plate of cherries, hardly ripe, thought to be black Tartarian.

A. M. Smith, Grimsby, one plate Triomphe de Gand, including some very curious samples of abnormal growth; also one plate Jucunda, very fine.

I. Freed, Hamilton, sends three varieties strawberries, Bishop's Seedling, Jucunda, Metcalfe's Early; also a fine sample of Governor Wood cherry.

Mr. Holton, Hamilton, Burr's Seedling cherry and McAvoy's Seedling strawberry.

Mr. Fernley exhibits three varieties strawberries, five cherries (Black Tartarian, Governor Wood, Elton, American Heart and May-duke) all good samples; also five gooseberries (Whitesmith, Ironmonger, Ploughboy, Hedgehog, and one unnamed.

Mr. Eunice, Galt, five plates gooseberries, unnamed.

Mr. James Heslop, Dundas, exhibited three seedling gooseberries grown by John Brooking, Ancaster, one of which, a seedling of Warrington, said to have been fruited nine years, and very promising, free from mildew.

Mr. Charles Arnold, Paris, twelve varieties strawberries—Wilson, Russel's Prolific, Metcalfe's Early, Jenny Lind, Hooker, Cutter's Seedling, Triomphe de Gand, Agriculturist, Jucunda, Viscountess Hericart de Thury, Bishop's Seedling, and Victoria.

Mr. Luke Bishop, St. Thomas, a very fine plate of Bishop's Canada Seedling, which for flavour and fragrance fully maintains its former character; samples of the same, one year old plants in fruit, were also shown; a sample of Bishop's Seedling, No 2, a late variety; also a very fine plate of Triomphe de Gand.

W. H. Mills, Hamilton, fine samples of Trollope's Victoria, La Constante and Triomphe de Gand Strawberries, one plate cherry currants, five varieties gooseberries (very large and fine), one plate Governor Wood cherries.

John H. Millar, Galt, Munroe's Scarlet and Wilson strawberries, three gooseberries (all very fine), one plate green plums, one plate cherry currants.

John Davidson, Galt, a fine plate of Wilson's Albany strawberry.

Mrs. C. Macgregor, Galt, two varieties of currants, two of strawberries, one of cherries.

Mr. Reid, Port Dalhousie, exhibits nine varieties of strawberries—Jucunda, Marguerite (a very large foreign variety), and seven seedlings of his own, two of them, Russel's Victoria and Excelsior, of monstrous size, but lacking flavour in their present state, Delicieux, not quite so large, but higher flavoured, Ladies' Pine, a beautiful white fleshed variety of delicate flavour, also two unnamed varieties, which promise to be very productive.

Your committee congratuates the association on the unusually fine display of small fruits, especially strawberries, which much surpass anything they have ever before seen.

Great credit is due Mr. Reid for the excellence of his display in this department—his seedlings are evidently of great merit.

It is a great source of pleasure to your committee, and must be to all who take an interest in the prosperity of our association, to witness the increasing interest manifested and the progress made in fruit culture.

CHERRIES.

The subject of cherries was next taken up.

Mr. Caldwell, of Galt, said the Dukes and Morellos did very well. The Heart varieties burst in the buds—the cause of this is the long and severe winter. The Early Spanish is the variety mostly grown about Galt. The Early Richmond he thinks will yet succeed well.

Complaints were made by several gentlemen that the birds eat up all their cherries.

Dr. Beadle suggested that a stuffed cat with glass eyes would frighten away the birds.

Mr. Martin, of Cayuga, had also a difficulty in keeping away birds. Even nets had not kept them away.

Mr. Gibson, of Dumfries, had only grown the common Canadian cherry, which had done well with him.

Mr. Reid grows the Black Tartarian, Black Eagle, and Yellow Spanish, which succeed best.

Mr. Holton, of Hamilton, said the Early Purple is the best cherry, but the birds are particularly fond of them. Butner's Yellow Cherry is a good healthy tree, has a fine berry, but late in ripening. The Governor Wood is not so good a cherry as he expected from the reports from the other side.

Dr. Beadle said that about St. Catharines they are able to raise all these varieties without much trouble. Along with Mr. Holton, he considered the Early Purple the best very early sort. The Governor Wood comes next, and fills a gap. It is a nice, juicy, pleasantly flavored cherry.

Mr. Holton recomended, for cooking purposes, the Donna Maria. The Elkhorn he found to be a firm cherry, but apt to rot.

Dr. Beadle then moved, seconded by Mr. Sanderson, of Brantford, the following resolution ;—

Resolved,—That considering the incalculable injury done every year by insects to farm and garden crops, this meeting respectfully and most earnestly requests

the Hon. the Commissioner of Agriculture for the Province of Ontario to grant some pecuniary aid to a properly qualified person to investigate the habits of such insects as are injurious to the farmer and gardener, with a view to the discovery of practical remedies, and to report thereon from time to time. Carried.

Professor Buckland then requested the opinion of the meeting as to whether the depredations of insects were in excess of those of previous years, and in which class or department they were on the increase.

Mr. Martin, of Cayuga, said it would be a very wise move to combine horticulture and agriculture in the request for a Provincial Entomologist; he was of the opinion that as the insects retreated from the frontier the back settlements were attacked.

Mr. Bishop, of St. Thomas, said that he had succeeded in keeping gooseberries and currants perfectly healthy by the following plan; he mixed

1 quart of ashes, unleached,
1 " soot,
1 " flour slacked lime.

Shake a handful in the centre of the bush in a very wet time, before the leaf puts out, while the insect is very young As this does not kill quite all, he then puts on a leathern glove and strips off the second brood, as the above receipt proves too strong for the leaf; he was of the opinion that the insects were on the increase, and strongly recommends the appointment of a practical entomologist.

Mr. Crawford, of Brantford, said insects in his locality were on the increase.

Rev. Mr. Burnet stated that the curculio with him was on the decrease.

Mr. T. Sanderson, of London, stated that curculios were on the increase.

Mr. Arnold, of Paris, thought that the curculios, instead of being on the decrease, had only changed their diet.

The President then offered the following resolution:—

Whereas the Council of the Provincial Agricultural Association of Ontario has offered the sum of $50 for the best collection of named varieties of fruits:

And whereas it is desirable that the members of the Fruit Growers' Association of Ontario should make every exertion towards securing a creditable display of fruit, in order not only to secure the prize for the benefit of the Association, but to advance the interests of fruit-growing in the Province of Ontario;

Be it therefore resolved, That each member who can contribute be invited to do so, by a printed circular, in which he may be requested to name the varieties of the best specimens of fruits he may feel disposed to supply, a few days before the Exhibition; and that a copy of this resolution be forwarded to members who may be likely to contribute, with a letter from the Secretary, stating where, when, and in what manner such fruits should be forwarded to the President, to meet the requirements of the coming Exhibition. Carried.

He suggested that the different individuals should send to local committees, and they forward to head quarters.

Dr. Beadle thought it would throw a damper on individual efforts, and thereby destroy competition.

Prof. Buckland thought the prize would call out competition from the States and the Lower Provinces, and that we need have no fear but there would be plenty of competition.

Dr. Beadle then moved that the autumn meeting be held at Brantford, at the request of the members of that locality. Carried.

Mr. Arnold moved, seconded by Mr. Martin:—

Resolved,—That the members from a distance desire to express to the members at Galt their most hearty thanks for the kindness and cordiality with which they have been received and entertained by the Galt members, and the efforts they have put forth to make the meeting pleasant.

Dr. Beadle thought that the mover and seconder had better stop eating strawberries, and make a speech on the manner of their reception. He proceeded to express his grateful sense of the very kind and hospitable manner in which members from a distance had been welcomed and entertained, and the pains the Galt members had taken to decorate the room and make the meeting pleasant.

The meeting then adjourned.

Trees Splitting in the Fork.—Mr. A. Gordon, of Wardsville, asks if we can inform him "what remedy he can apply to apple-trees whose limbs, meeting at a sharp angle near the base of the trees, have caused the trunks to split. Would iron bolts injure the trees? One of them is sixteen inches in diameter, the other ten." We know of no objection to iron bolts, and there is nothing else that will do the work so effectually. A broad washer should be put under the head of the bolt and under the nut, which can then be screwed up to any degree of tightness requisite.

Meeting of the Directors of the Fruit Growers' Association of Ontario,

HELD IN GALT, ON TUESDAY, 6TH JULY, 1869.

Present, W. H. Mills, Esq. President, A. M. Smith, Chas. Arnold, W. Saunders, and R. Burnet.

The importance of diffusing correct information in regard to insects, their habits, their natural enemies, and the cheapest and most efficient modes of combating them, and lessening the injuries they commit in the farm and the garden, was considered, and to this end it was

Resolved,—That a prize of twenty-five dollars be offered by the Fruit Growers' Association, for the best collection of insects, injurious or beneficial to the various kinds of fruits. The competitor must, as far as possible, show the insects in their different stages of developement—the board holding themselves under obligation only to award the prize to a meritorious collection, and as a condition accompanying the prize, reserve to themselves the right of purchasing the collection, having first submitted the value to arbitration.

Also, Resolved,—That whereas we deem it of great importance that correct information on Canadian Entomology should be widely disseminated, that the Department of Agriculture be requested to appoint a Provincial Entomologist, whose duty it shall be to publish an annual report on the insects injurious and beneficial to vegetation, detailing the best means of preventing their ravages, and render such other assistance, in determining insects, &c., as the department may desire, and that a suitable appropriation be made for that purpose.

The desirableness of sending a delegation to the next meeting of the American Pomological Congress was considered, and it was resolved, that

Whereas the twelfth Session of the American Pomological Society takes place in Philadelphia on the 15th day of September, 1869, and that kindred societies have been invited to send delegations, as large as they may deem expedient,

And whereas, on account of the importance of fruit culture in this Province, it is deemed expedient to appoint such delegation;

Therefore, the Directors of the Fruit Growers' Association of Ontario do hereby undertake to send one of their number as their delegate, and that Mr. Chas. Arnold, of Paris, be their said delegate:

And further, that the said Directors hereby make representation to the Council of Agriculture, that it would be highly desirable that a delegate be sent from their Board connected with the horticultural interests of the Province, to cooperate with the delegate from the Fruit Growers' Association, at the meeting of the American Pomological Society.

Fruit-growing at Galt.

We were much pleased during our recent visit to Galt, in attendance upon the meeting of the Fruit Growers' Association, to witness the interest in fruit culture that is manifested there, and our sincere thanks are due to the gentlemen who took so much pains to show us the gardens and fruit trees of Galt.

The strawberry in all its varieties thrives well in that soil, and under the careful culture so universally bestowed by these earnest cultivators, yields most generous returns, yet here, it was quite observable that the Wilson variety was by far the most productive.

The English varieties of Gooseberry also do well here, and seem to escape the mildew that prevails so severely in many parts of the Province as to destroy both fruit and foliage.

The pear trees were looking very healthy, there being none of that very formidable disease to be seen, known as the *fire blight*, which does so much damage to the pear trees in the Niagara district.

The plum trees were also loaded with fruit, not because the curculio is not known there, but because the cultivators take the pains to jar their trees, and catch and kill the little Turks.

The Heart and Bigarreau cherries are grown here, but the Duke and Morello varieties are more hardy, and seem to be the most likely to endure.

We did see a few peach trees, and some fruit on them, but they evidently can be grown only in favored spots and require shelter.

The grape vines were looking very healthy and vigorous, and were just setting their fruit. But few varieties have been fruited in this place as yet, but in a few years it will be known, from experiment, what sorts can be depended upon in open air.

We were much pleased with a fine specimen of a hedge grown from our native thorn: it was quite dense at the bottom, and seemed to bear clipping admirably, and to answer the purpose well, being throughout without break or fault.

Here are located the nurseries of Mr. D. Caldwell, who is carefully cultivating every variety of fruit suited to this climate. We spent a couple of hours very pleasantly, examining his stock of young trees and plants, all of which were looking very vigorous and healthy. He cultivates, especially, those varieties which he has proved to be best adapted to the colder parts of the Province, and trains his trees with low heads, having become fully convinced that low headed trees endure the rigors of the climate, while those that are trained high, in a few years become diseased, and die. Mr. Caldwell is a careful cultivator, and every way deserving of the confidence of planters of fruit and ornamental trees.

There is an appearance of comfort and stability about Galt that makes it attractive to a stranger, while the kindness and cordiality of its people, at least so far as our experience can testify, is quite charming, making the stranger feel as if among old friends.

The Geneva Horticultural Society, Geneva, N. Y.

This Society held its first exhibition on Tuesday, June 29th, 1869.

The hall was beautifully decorated by the ladies of Geneva with wreaths and festoons of evergreen, intertwined with roses. In the centre was an elegant structure, erected under their supervision, and most tastefully decorated with evergreens and flowers, twining around the columns that supported a canopy, which was gracefully hung with festoons of flowers, among which chirped rare birds of beautiful plumage. This was the temple of Flora, and it was filled with fruits and rare flowers. The room had a particularly bright and cheerful appearance, and the elegant taste of the ladies was seen in the charming effect of the whole.

The display of fruits was confined, of necessity, to strawberries and cherries, but the samples of these were very fine. The varieties that are so well known and deservedly popular in Ontario, such as Triomphe de Gand, Wilson, Jucunda, Early Scarlet and Hovey, were evidently the leading sorts about Geneva. Some of our old acquaintances were exhibited under new names, Trollope's Victoria being shown as "Golden Queen," and Triomphe de Gand as "Romeyn's Seedling." Probably some enterprising vender of novelties will be around before long, offering the readers of the CANADA FARMER great bargains in Golden Queen or Romeyn's Seedling strawberries at three and four dollars per dozen. They can be had of our own nurserymen, under their true names, at less money per hundred. The Michigan Seedling was also there, and Kramer's Seedling, both of which are worthless sorts, if one may judge from the samples shown.

Mr. Keech of Waterloo, whom we met at the Fruit Growers' meeting in Rochester a few days before, was here with some of his seedling strawberries. He informs the writer that he has selected two of his seedlings, which were raised from the seed of the Agriculturist fertilzed with pollen of Triomphe de Gand, to which he has given the names of "America" and "Keech's Favourite." Of "America" he says it is very early, ripens the berries together, which are of a uniformly large size, color on the surface dark red, inside deep bright red, quality excellent, plant very productive and hardy, and the fruit firm and bearing carriage well.

"Keech's Favourite" ripens directly after "America;" large size, glossy dark red, very showy, plant hardy and vigorous, and though not deficient in productiveness, is not equal in this respect to "America."

It was our intention to have visited the grounds of Mr. Keech, at Waterloo, and to have seen the plants in bearing, but the rain prevented. However, Mr. Keech kindly proposed to send some plants of these varieties to be tested in Ontario, and the results will be duly laid before our readers.

The cherries exhibited were also well known to Canadian cultivators, consisting chiefly of Black Tartarian, Early Richmond, Mayduke, Coe's Transparent, Yellow Spanish, Black Eagle, Napoleon Bigarreau, Governor Wood, Elton, etc.

The collection of roses was very large and very fine. The collection that received the prize for the best twelve was made up of the following sorts:—

Souvenir de Charles Montault, fiery crimson.
Baronne Hallez, dark red, fine form.
John Hopper, rosy crimson, large.
Duchess d'Orleans, lavender blush.
Gen. Washington, rosy crimson.
Gloire de Dijon, yellow, large and fine.
Victor Verdier, rose color, very large.
Beauty of Waltham, light crimson.
Madame Desire Giraud, light carmine.
Victoria, pale blush, nearly white.
President Lincoln, deep scarlet crimson.
La Reine, deep rosy lilac.

The collections of greenhouse plants in pots were not equal as specimen plants to what we are accustomed to see at horticultural exhibitions in our own towns, but as they were contributed altogether by nurserymen who cannot afford the space nor time which are bestowed upon them by the gardeners in our private establishments, such specimen plants could not be expected.

The collections of shrubs in flower, and of shrubs and trees of variegated or ornamental foliage, were very fine, including Purple-leaved Beech, Purple-leaved Hazel, Variegated-leaved Maple, Cut-leaved Birch, etc.

A grape-vine trained upon a miniature trellis, exemplifying the method so strongly recommended by Mr. Fuller in his treatise on the vine, was a very neat and attractive object lesson in vine culture.

This Society included the fine arts in the premium list, and in consequence the wall on one side was hung with paintings in oil and water colors, chromos, lithographs, etc.

In the vegetable department the show was very limited in extent. There were

some fine samples of Early Rose, Early Goodrich, and Early Prince potatoes, some very large rhubarb, and well developed potato onions and plump green peas, but lettuce and cucumbers were much behind the productions of our own gardeners.

There was a very full attendance, and in the evening, particularly, the hall was crowded to overflowing, a fact which shows that the people of Geneva know how to appreciate a fine horticultural display.

The entertainment was enlivened both during the afternoon and evening with vocal music, by some of the young ladies of the place, neatly dressed in white and trimmed with flowers, who sang "Merry Spring," "The Flower Girl," and other appropriate pieces, with fine effect.

We cannot close this account of the Geneva Horticultural Exhibition without mentioning the gentlemanly kindness and courtesy we experienced on every hand, and thanking the officers for the facilities that were afforded us for carefully examining not only the horticultural productions in the Hall, but some of the extensive nurseries that surround the town, and expressing our regret that the severe rain on the following morning prevented us from continuing our examinations. As it was, we had a view of the extensive nurseries of Messrs. Graves, Selover, Willard and Co., and of Messrs. T. C. Maxwell and Bros., at both of which places we saw many acres of most thrifty and beautifully grown trees. In the houses of the first named firm, we were shown a dwarf specimen of Norway Fir, now five years old and only four and a half inches high. It was in a five inch pot, in which it had been growing for the past year, but the roots by no means filled the pot.

The country about Geneva is quite undulating, and some of the views, especially towards the lake, are charming. The crops were looking well, and everything seemed to promise a year of plenty.

Hamilton Horticultural Exhibition.

The Hamilton Horticultural Society held their Summer Exhibition on Dominion Day.

The vegetable department was well filled with very fine samples of Lettuce, Radishes, Turnips, Early Rose, Kidney and Early Goodrich Potatoes, Green Peas, Rhubarb, Potato Onions, Fall-sown Onions, Cauliflower, Carrots, Cabbage, Long blood beets, Turnip Beets, Cucumbers, &c., &c.

In the fruit Department were well grown samples of Strawberries, Cherries, Currants, and Gooseberries, the two last named fruits being, of course, unripe, and a few plates of Northern Spy and Golden Russet Apples of last year's growth.

In Strawberries, the six varieties that took the first prize were, Iowa, Russell, Triomphe de Gand, Mc'Avoy's Superior, Wilson and Hovey. The twelve heaviest berries were, Jucunda; the best pint was also awarded to Jucunda, second to Triomphe de Gand. The best four was given to Russell, Wilson, Triomphe de Gand and Jucunda.

In Cherries, the best four was given to Governor Wood, Black Tartarian, Belle of Orleans and Beauman's May.

The Roses made a fine display and were very choice varieties.

The prize for the best six Hybrid Perpetual Roses was given to Prince Camille de Rohan, Reine des Violets, Gloire de Santenay, John Hopper, Senator Vaisse, and Ardoise de Leon.

The collection that received the prize for the best eighteen included the following varieties: Princess Imperial Clothilde, Cardinal Patrizzi, Lord Palmerston, Beauty of Waltham, La Reine, Marechal Vaillant, Triomphe de Caen, Prince Leon, Pius the Ninth, General Jacqueminot, Madam Carrique, Lord Raglan, Souvenir de la Reine d'Angleterre, Madam Boutin, Comtesse de Chabrelliant, Standard of Marengo, Triomphe de Paris, and Senator Vaisse.

The display of Verbenas was not very large; but there were some very fine flowers. The collection that was adjudged to be the best twelve was composed of Mrs. McKay, Fox Hunter, Defiance, Reine des Amazons, Hamiltonia, Victory, Snowflake, Mrs. Field, Giant of Battles, Celestial, and Dr. Sanky.

In Fuchsias, Geraniums, Foliage Plants, Green-house Plants, Petunias, &c., &c., there was a very good display, but nothing further to note beyond what has been already mentioned in connection with the Spring Exhibition.

The amateur display in all departments was very full and fine, and gave good evidence of the skill and taste in horticulture which exists in the city of Hamilton. Indeed, in some of the vegetables and fruits, in particular, we could not see that they were one whit behind the professional gardeners

St. Catharines Horticultural Exhibition.

The St. Catharines Horticultural Society held its Summer Exhibition on Tuesday, the 29th June, 1869.

The collections of green-house and stove plants, although not very large, were equal to those of previous years, and were very creditable to the growers.

The Scarlet Geraniums were very showy, and many of them were choice varieties. The first prize for the best four was awarded to Doctor Lindley, Solfaterre, Culford Rose and Beaute de Suresnes.

The new Coleuses attracted considerable attention, and though very small plants were awarded a second prize. The varieties shown were Berkleyi, Mastersi, Hendersoni, Bausei, and Hookeri.

In Roses there was a good display. The winning varieties were La Reine, Julia Darien, Madam Charles Wood, Baronne Prevost, Beauty of Waltham, General Jaqueminot, Jules Margottin, Annie Alexiff, Cardinal Patrizzi, Souvenir de Charles Montault, John Hopper, Charles Bosier.

The display of fruits was small, too small altogether for such a fine fruit producing region. However, the samples of strawberries shown were very fine, and Triomphe de Gand was evidently the favorite berry. There were only a few plates of Cherries, the backwardness of the season having prevented most of the finer sorts from ripening.

In vegetables there was a very fine collection, including cabbage, cauliflower, carrots, beets and extra fine potato onions, and very fine lettuce; Early Rose potatoes, Ash leaved Kidney potatoes, and Handsworth, all grown in open air, and very fine samples indeed.

The plants, fruit and vegetables shown by the amateurs were very good in quality, but very small in quantity. It is to be hoped that the competition in this department will soon become more spirited.

A model flower garden was exhibited which showed considerable skill and taste, and was a capital way of showing what effects can be produced by a skilful use of flowering and foliage plants, and a judicious arrangement of colors.

The City of Toronto Electorial Division Society.

On the 8th July, the Summer Exhibition of this Society was held in a tent erected in the Horticultural Gardens. Judging from the appearance of the Exhibition, the taste for Horticultural pursuits is at a very low ebb in the city and neighbourhood, or else those who engage therein are rather Conservative in their natures and care little about affording their less favoured fellow-citizens, an occasional opportunity of looking upon what is perhaps the most pleasing and elevating of all exhibitions—a horticultural one. What was shewn at the exhibition was first class certainly, but the number of objects was much smaller than it might have been, and the number of exhibitors was smaller still. Toronto is far behind in this respect; and in many a village of a thousand inhabitants in Ontario, Horticultural Exhibitions, more extensive, more varied, and infinitely more interesting than that of Toronto, are held every year. There is a lack of enthusiasm about our exhibitions, which detract materially both from their utility and the interest which might otherwise attach to them.

This being the case, the gentlemen who

support this and similar exhibitions by their productions deserve all the more credit, for being at so much expense and trouble in endeavouring to render them attractive. A glance at the prize list will at once show, that were three or four individuals to withdraw their support, such a thing as an Horticultural Exhibition amongst us would be an impossiblity, and the popular mind would be left to revel over luxuriant green crops and fields of peas.

At the Exhibition on the 8th, however, there were many things well worth looking at. The centre table, which was devoted to bouquets and green house plants, was peculiarly attractive. A bouquet of native flowers exhibited by Mr. Chisholm, from the taste with which it was constructed, and the variety of species represented, at once pleased and surprised. Four table and eight hand bouquets and two baskets of flowers, likewise attracted much attention. The show of Fuchsias was magnificent, several of them both for size and extent and beauty of blossom surpassing almost anything we have seen, while the green house collections exhibited by the Hon. D. L. Macpherson and Mr. Chisholm, well merited the encominms passed upon them. Amongst the cut flowers the roses were particularly admired, especially those exhibited by Geo. Leslie & Son, and Mr. Armstrong. In both selections there were some magnificent flowers. The few pansies shown were somewhat inferior. Only one lot of dahlias were on the table; they were from the garden of Mr. James Fleming, and though not large they were very fine blossoms. Six lilac phloxes, shown by Messrs. Leslie, were exceedingly delicate, and were much admired; whilst the annuals, though limited in variety, showed excellent culture.

The collection of roses shown by Mr. I Young, of Hamilton, and which gained the first prize, deserve special mention. We are glad to see Hamilton exhibitors in the field.

Amongst the fruit, the strawberries occupied a prominent place. It was anticipated that there would be a much larger display of this fruit than there was, but the samples shown were luscious and tempting in the extreme. We have rarely seen larger berries than those in some of the plates. Some fine bunches of black and white grapes were exhibited by Mr. Chisholm, but the other fruits were not of much account.

The vegetable department was well represented. The cauliflowers and lettuce were gigantic in their proportions, and some splendid bunches of onions were shown. But the most striking of all were the potatoes, two lots in particular, which beat by a long way anything ever seen at a summer exhibition. Another lot, shown by Mr. John McCarter, attracted much attention, both from the size of the bulbs and the brief history attached to them. They were of the Early Rose species, were planted on the 4th of May and were dug on the 7th of July. The lot weighed 2 lbs. 14 oz., and grew from 2 oz. of seed. The peas, parsley and carrots shown were all of a very superior order

The whole exhibition so far as it went was a success, and showed how much might be done in the Fine Art department—so to speak—of the vegetable world, amongst us, if people would only cultivate it.

The weather was far from propitious for the exhibition, still a goodly number of visitors were present during the afternoon and evening, but about eight the rain came on in good earnest, and put a summary period to the night's amusement.

Exhibition of the Brantford Horticultural Society.

The Horticultural Exhibition of the Brantford Society, on the 1st July, was one of the best and most successful shows ever held in Brantford. The Music Hall, in which it was held, was crowded with almost every variety of Flowers, Fruit, and Vegetables grown in that locality.

The large and showy plants from the greenhouse of the Hon. E. B. Wood added very materially to the fine display, and contained fine specimens of the older and best known greenhouse plants, some fine pelargoniums, and a large lot of showy scarlet Geraniums, some fine Fuchsias, well grown plants, a large lot of balsams, comprising some of the new dwarf varieties, very fine and bushy plants, and much more compact habit for pot culture than the older tall variety. Foliage plants and Tricolor Zonal geraniums, as well as new plants, were very scarce. In cut blooms there were but few brought forward, owing to the severe storms of the few days previous, but those shown deserved special mention for quality. The Roses were very good. Verbenas, Pansies, Sweet williams, double Petunias, and annuals were very fine. Bouquets were very scarce, and no really good ones shown. A fine specimen of Cypripedium Spectabile was on the table, rivaling some of its more fortunate compeers in beauty. There was also a fine collection of plants from the nursery of D. W. Beadle Esq. of St. Catharines, bought by the Horticultural Society for the improvement of the class of show flowers, and contained many fine things, especially a very handsome plant of double geranium, Gonie de Nancy, some of the newer Scarlet Geraniums, and other things of interest. In the amateur class the flowers in pots and cut blooms were very good, and the competition for the prizes much more spirited than in the general list, and comprised many fine specimens of stocks, geraniums, fuchsias, balsams, petunias, and roses.

Very noticeable near this was a very splendid collection of cut roses, also from Mr. Beadle, comprising all the best known, and many of the new and fine French roses just introduced to this country, making one of the most attractive features of the Exhibition.

In the fruit department there was a fine and very choice collection of apples in beautiful preservation, shown by W. A. Smith Esq. The cherries were very fine, and comprised Early Purple, May Duke, Elton, Governor Wood, Black Tartarian, Black Eagle, and several others. Strawberries were extra large in size, and attracted much attention, being very fine samples of Wilson, Triomphe de Gand, Jucunda, Agriculturist, and some new varieties of little merit. Gooseberries were very large and fine. Currants were in full force, but quite green.

Some fine samples of grape wine were shown in this class, one bottle especially good, which the writer can vouch for, shown by Mr. W. A. Smith, being four years old and of great body and flavor.

The vegetable department was especially excellent, more particularly in peas, lettuce, and potatoes. Several fine samples of Early Rose were shown, as well as other new varieties of great merit, but less known to fame. A very fine lot of mushrooms, the growth of one of the most successful amateurs: and in this class the amateurs followed closely on the heels of the professionals, so much so that hardly any difference in the productions was no iceable.

The Exhibition was largely patronized by the holiday pleasure seekers, and with the fine band playing during the evening, the show passed off very creditably, not the least noticeable feature being the singing by some Indians of two very sweet melodies, which were enthusiastically received and encored by the crowded hall—*Communicated.*

New Strawberries.

There is not likely to be any lack of new varieties of strawberries. The great difficulty is to be able to select from the numerous claimants upon our attention those that are really valuable. This year there has been brought to the notice of our readers the new seedlings exhibited at the Fruit Growers' meeting in Rochester, at the Geneva Horticultural Exhibition in Geneva, N.Y., and at our own Fruit Growers' meeting recently held in Galt; and now we are in receipt of communications concerning other new sorts, particularly three varieties raised by Mr. W. H. Russel at Seneca Falls, N.Y., and the Mexican Everbearing.

It is claimed for one of Mr. Russel's new seedlings that it is as early as the Wilson, an abundant bearer, very large, of exquisite fine sweet flavor, carries to market as well as the Wilson, and is hermaphrodite.

Of the other, it is said to be very large and showy, very prolific, uniform in size, and of fine flavor, ripening about four days after the Wilson, also hermaphrodite.

The third is most esteemed for its extreme lateness, the berry heart-shaped, size enormous, and very uniform, and of good flavor.

Mr. Alexander, of Windsor, the agent for the Mexican, writes us, that the beds of that variety are now "a sight to behold," and that other sorts having ripened and their crop having been gathered, it is now a good time to appreciate the real value of the Mexican, and kindly urges a visit to the beds.

The *Michigan Farmer* of 10th July, says: "On Saturday last we visited the Strawberry plantation of Mr. Whiting at Dundee, in Monroe County, in company with Mr. H. Emery, of the *Prairie Farmer*, Chicago, D. Meehan, the well known editor of the *Gardener's Monthly*, of Philadelphia, and Mr. Gilman, the botanist. As we drove up to the

house, the delicious fragrance of the strawberries was very perceptible. There had been a heavy rainfall during the morning and the day before, and the beds were not in the best condition for examination. But nevertheless, although they had been picked over more than once during the past two weeks, the plants were still loaded with fruit, ripe and unripe, and with flowers. At this place the plants have not had the benefit of high culture, they have simply been set out and permitted to grow as they would, and the old beds have not been disturbed, as they only came into the hands of Mr. Whiting last fall. There was no doubt at all about the bearing quality of this strawberry—there was the evidence before us—and there were picked from a space not larger than two square rods in extent, fully a peck in less than half an hour, and then there remained on the vines fully as much more. Judging from the color of the berries, which stood up above the leaves and gave a crimson tinge to the beds, Mr. Meehan came to the conclusion that at a single picking the yield would be as great from the area covered as the Wilson's Albany. The berries are not large, but they are what are called medium sized, and are as easily gathered as raspberries, as they drop readily when pulled from the calyx, and on this account need no second handling to fit them for the table or for cooking.

"On examining one of the plants for the purpose of determining whether it might be considered a new species or a new variety, there was much discussion. Mr. Meehan decided that under the system of classification adopted by the older botanists, this plant might be, by many botanists, considered as a distinct species 'In fact,' said Mr. Meehan, 'though it is entitled to the distinction of a species, as clearly as the *Fragaria Collina*, the *Fragaria elatior*, and some others, according to the old system, I must regard it as a *vesca*, but as a variety with very superior qualities over any of the *vesca* tribes which I have ever seen.'

"Leaving the question as to whether the 'Mexican' is or is not a distinct species, to be settled by botanists, and considering the plant entirely from the horticultural standard, it must be admitted by all unprejudiced gardeners, whether amateur or professional, who will examine this strawberry:

"First. That it is a sort that is extremely hardy.

"Second. That it is one of the most prolific bearers, and profitable to cultivate.

"Third. That its fruit is excellent, both in texture and flavor, and in richness of color.

"Fourth. That its persistent productiveness throughout the season gives it a value not possessed by any other known variety.

"Fifth. It may be objected that the fruit is small in size, but this objection is just as applicable to the Delaware grape, which is regarded as a valuable sort. The size of the fruit is medium, and this fault is made up by the numbers of the fruit produced, and by the ease with which they are gathered.

"Sixth. It is susceptible of improvement by careful cultivation.

"Seventh. It excels in hardiness, fruitfulness, susceptibility of improvement, agreeable flavor, profit as a market plant, richness of color, and beauty as a table fruit, any of its congeners of the Alpine or Wood sorts known to gardeners.

"These are generally the conclusions arrived at unanimously, by the party, after giving the plants a fair examination, as growing in the beds set out long before any one had made any effort to bring it before the public."

It is not to be expected that all these new sorts will prove of universal value in all soils and climates, like the Wilson. Our readers would do well to attend the meetings of our Fruit Growers' Association, where fruits that are new, and not new, are brought together, and after seeing and hearing, they will be able to decide whether they wish to give any of these new sorts a trial; and may at least be saved the mortification of buying, under a new name, some old and well known sort which they may already have.

Florists' Flowers.

The record of new Chrysanthemums is one of the last to be completed each season, as they may be said to gild the departure of the old, and even to bedeck the advent of the new year. Pre-eminently do we look to Mr. Salter, of Hammersmith, for the annual additions to the flowers already in cultivation. During the autumn of 1868 some very fine seedling flowers opened at Hammersmith, and of these *Pink Perfection* and *Princess Teck* received First-class Certificates. Quite a new, and certainly a most beautiful and pleasing shade of colour is furnished in *Pink Perfection*, delicately soft and yet striking, while the qualities of size, shape, and fulness are in keeping with its fine colour. *Princess Teck* opens white, but when at its best has a delicate blush tint; it is a very fine and full incurved flower, and like all the white flowers dies off to a rosy tint This tint is most perceptible in dark weather, and never so marked in fine sunny weather. Another new white flower is *Miss Marechaux*, a very beautiful pure white variety, of great size, and very full, and a good addition to the largest of the white flowers. *White Eve* is a small pure white flower, full and good, and very clean and pure; it furnishes another illustration of the sportive character of the Chrysanthemum, as it is a sport from Smith's Eve, a handsome pale primrose flower, of medium size. *Beethoven* is a bronzy lilac flower, lit up with slight golden tips when fully incurved. *Rival Little Harry* is a seedling raised from Smith's Little Harry, and is in the same way, but with more red on the back of the petals, and so when the flowers are fully recurved, they have a much redder tint than in the case of the old kind: there is the presence of a much better habit, the flowers also stand up better on the stalks. The sportive character of the Chrysanthemum is further illustrated in the case of *Lilac Beverley*, a sport from the old white Beverley, a medium-sized but very compact flower, which when incurved has a bright lilac surface, showy and good. *Stellaris* has the appearance of being a very great improvement on Smith's Cherub, a golden amber-tinted flower; being fuller, it does not open at the centre when incurved, or become so "cross-eyed," as it is termed, as Cherub does, while the hue of colour is redder.

There are three new Anemone-flowered kinds belonging to the large flowering section, namely, *Princess Charlotte*, the guard petals rosy blush, with a light tufted centre, a medium-sized, but good close flower: *Forelle*, which opens blush, but changes to pale lilac, fine and showy, and of dwarf growth: and *White Empress*, a sport from the well-known lilac flower under that name, pure white, with a showy golden centre, a handsome and bold-looking flower.

Mr. Salter has this season made some grand additions to his new Japanese kinds, which, their singular appearance notwithstanding, prove most attractive objects in the greenhouse and conservatory during the dull months of winter. That the Floral Committee should award First-class Certificates to any of these new kinds appears to be regarded by some as a kind of sin, judged by the floricultural code of "points," "qualities," &c.; but the Committee may safely look for a general endorsement of their action in this respect. Of the new kinds, *Dr. Masters* stands pre-eminent for its distinct and showy character, having a centre of bright yellow, with an exterior of showy reddish-brown florets; but as the flowers age a curious transformation scene occurs, as the gold becomes transferred from the centre, which changes to red, to the tips of the florets. *Hero of Magdala* has very full and curious bunch-like flowers, composed of a mass of pale, dullish, blood-red florets, apparently squeezed together, and is thoroughly novel in character. *James Salter* has pale bright lilac-pink, rosette like flowers, and is probably one of the most curious of the Japanese varieties when fully expanded. *George F. Wilson* is another new variety, with very fine and remarkably showy flowers, of the colour of Jardin des Plantes. *Jupiter* has bronzy buff flowers, with a bright orange centre, the flowers full and showy, and with a good upright habit of growth. *Regalia* is a fine new variety, appearing to have something of a hybrid in its character, the habit of growth and foliage being identical with the large flowering kinds; the flowers have a golden ground with bright red stripes, and as they become incurved have a very showy bright buff appearance.— R. D. *in Gardener's Chronicle.*

Lilium Auratum.

The accompanying illustration represents the blossoms of one of our most magnificent floral acquisitions, the superb Golden-banded Lily. The drawing was taken from a plant in the possession of the Hon. D. L. Macpherson, in whose conservatory it has this year bloomed for the first time. No picture without colour can, however, adequately portray the beauty of this splendid flower. The size, also, is necessarily greatly reduced in our illustration. A short account of this lily, with brief directions for its care and culture, will be found in the February number of the CANADA FARMER for the current year.

Cultivation of Filberts

Nut bearing trees of every kind are worthy of cultivation, yet in many places they are too much neglected. In England the growing of filberts for home consumption and for market is much practised, and under favourable circumstances the produce of the trees is astonishing. The first consideration is to select a suitable soil, which must be a warm sandy loam. If the subsoil be too retentive of moisture, the trees are apt to run too much to wood, without throwing out those short twigs upon which the fruit is produced. It is said that soil which is congenial to the growth of hops is suitable for the filbert. Large quantities are grown in the hop districts of Kent, England. The filbert requires manure every year or every second year. Old woollen rags are found to be specially adapted for it.

There are four methods of raising the plants, namely, by suckers, layers, grafting, and sowing the nuts. Each may be practised, according to the peculiar object of the cultivator, but the best method is by suckers, as they come sooner into bearing, and make stronger plants than either layers or grafts. They are taken from the parent plants, generally in the autumn, and planted in nursery beds (being first shortened to ten or twelve inches), where they remain three or four years. They are slightly pruned every year, in order to form strong lateral shoots. The most free-growing plants are obtained by sowing the nuts, but they are so long in coming into bearing, and are besides so much inclined to degenerate into inferior varieties, that this method should not be resorted to in making a permanent plantation. The plants raised by layering and grafting are of more humble growth, and therefore better adapted for small gardens.

The method of pruning the filbert is different from that of every other tree, and in order to perform this operation properly, its manner of fructification should be understood. The bearing branches are the shoots of the previous year, and the proper mode of pruning is by cutting these back to spurs. In a favourable season every bud of these spurs produces fruit.—*Western Rural.*

New Fuchsias.

MODEL (Banks): This is the finest Fuchsia with a dark or black corolla ever sent out. It is entirely free from cracking in the tube, and for size and shape of its bloom, and its splendid vigorous habit, it is really the best dark single Fuchsia ever sent out.

STRIATA PERFECTA (Banks): This is the best striped Fuchsia ever sent out; the tube and sepals are scarlet, the latter well reflexed; the corolla light mauve, with a scarlet stripe, which is very attractive; a short, free, thick grower, and being an abundant bloomer, it makes a fine market variety.

PRINCESS BEATRICE (Banks): This is a small, light kind, but exceedingly pretty, the reflex being perfect; tube and sepals waxy white, with a very pleasing, delicate but bright pink corolla; a very free grower, of good habit, and as an abundant bloomer, perhaps not equalled by any other Fuchsia.

TRY ME O (Banks): The flowers of this variety are not over-large, but the colour of the tube and sepals is a bright coral red, and every flower is regularly and equally reflexed; the corolla is of a beautiful dark plum-colour; it is a most abundant bloomer, and for a fine, strong, quick growth, is not equalled by any other. It is also one of the best sorts for exhibition, much better than was expected when first sent out.

GLOWWORM (Banks): This is also a perfectly shaped flower, in colour similar to Killiecrankie, but more intense, the corolla being of a peculiar and pleasing magenta satiny colour; where form of flower and rich colours are appreciated, this will be considered a gem.

BEAUTY OF SHOBDEN (Banks): This is of the same class as Count Cavour and Don Giovanni; tube and sepals bright red, corolla of a most attractive light mauve or peach-colour. The above two are not of that strong, bushy, vigorous habit that is so desirable, neither is the bloom of that thick, leathery substance which it ought to be, but in its class it ranks quite equal to the dark sorts.

LORD DERBY (Banks): This is in the way of Enoch Arden, with the shape of Lord Elcho, which is known as one of the best; the corolla is of a most intense bright blue, and as for substance and purity of colour, there is nothing to equal it; it comes occasionally striped from top to bottom of the corolla with light pink; a very fine variety.

KING OF THE FUCHSIAS (Banks): This is in the same way as La Favorita, and is much the largest single Fuchsia ever sent out; the shape is perfect, and the flowers of immense substance, both in the sepals and corolla; fine grower, and for decoration one of the very best, being a very striking variety, and true to its name.

MARKSMAN (Bull): Tube and sepals bright carmine: very full, double, finely expanded, and peculiarly flat corolla, which is of a beautiful rich dark plum colour; fine habit, a most abundant bloomer, and really one of the very best double Fuchsias for any purpose ever sent out.

SYMBOL (Bull): This variety presents us with another distinct shade of colour in the corolla; the tube and sepals are of a beautiful glassy coral red, well reflexed, while the fine full double corolla is cream-coloured; a nice grower, and a very pretty and distinct kind.

STARLIGHT (Bull): Pure waxy-white tube and sepals, the latter very broad, stout, and moderately reflexed; clear rose-lake corolla, flowers large and fine, and both novel in colour and distinct in character; an exceedingly handsome variety, of fine habit, and a

good grower: altogether, one of the very best light Fuchsias ever sent out.

Lustre (Bull): A welcome addition to the white-sepaled section of Fuchsias, on account of the remarkably vivid crimson-vermilion corolla, which makes it very distinct; the sepals are beautifully reflexed: a fine strong grower, a free bloomer, and one of the best Fuchsias of the season, quite first-rate for exhibition purposes.

Favourite (Bull): Tube and sepals bright scarlet, the latter elegantly reflexed; corolla pure white, and bell-shaped: a small, neat grower, of pleasing character, and really the best cup-shaped single Fuchsia of this colour ever sent out for growing as small plants.

Giant (Bull): The blossoms of this variety are of gigantic size; sepals bright red, completely reflexed; corolla double, purple; it is of elongated habit, but a fine one for trellises and climbing purposes.

Garibaldi (E. G. Henderson): Tube and sepals scarlet, the latter beautifully reflexed, and of good substance: corolla barrel-shaped, and in almost every flower beautifully striped with red: of rather dwarf habit, but a good grower and free bloomer, and a very pleasing kind.

Master Longfield (E. G. Henderson): Very similar to Beauty of Clapham, sent out last year; white tube and sepals, moderately reflexed, with a rose-purple corolla; sometimes the petals come much too long, otherwise this would be a first-class variety for any purpose; a good grower, and an abundant bloomer.

White Perfection (E. G. Henderson): This has the finest tube and sepals of any white Fuchsia ever sent out, for they are broad and very long, pure in colour, well reflexed, and of great substance; corolla magenta-coloured, of about the ordinary quality; a good grower, and for crossing one of the very best.

Snowdrop (E. G. Henderson): Scarlet tube and sepals, the latter broad and well reflexed; corolla large, barrel-shaped, and when the petals are properly arranged it is the finest single Fuchsia of this class; a strong grower, with fine foliage. A compound of this and Favourite, half and half, would make a grand Fuchsia.

Monstrosa (B. S. Williams.): An extraordinary flower, of the double section; tube and sepals carmine; corolla, light purple, of immense length, barrel-shaped, with a quantity of petals thickly arranged round the outside, or a single corolla in the middle of a double flower; a good grower and a good decorative Fuchsia.

Mrs. Ballantine (B. S. Williams): tube and sepals bright scarlet, of good substance, broad and well reflexed; corolla large, well expanded, pure white, and very double; habit good, dwarf, freely branching, with bright glossy green leaves; a very pretty Fuchsia.

Blue Boy (Turner): Scarlet tube and sepals the latter well reflexed: corolla smooth and compact, of a beautiful blue; the best double variety ever sent out for market or decorative purposes: of very quick dwarf growth, producing very attractive small flowers in abundance.

Lady Sale (Felton & Holliday): White tube and sepals, the latter nicely reflexed, and of good substance; corolla pink purple, stout; an abundant bloomer, of good habit; I think it will make a good Fuchsia for any purpose.

Jolly (Felton & Holliday): This is a welcome and long-wished-for improvement on a good old variety called Fair Oriana; pure white tube and sepals, the latter well reflexed; bright pink-scarlet corolla: a good grower, and very free.

Striped Unique (G. Smith): A very fine bold flower; tube, and broad perfectly reflexed sepals, scarlet; corolla bright purple, with most conspicuous bright scarlet stripes running three parts of their length: a quick grower, of rather heavy habit, but altogether one of the very finest double Fuchsias ever sent out.

Warrior (G. Smith): This is a fine bold flower: tube and sepals scarlet, tipped with bright green, corolla very large, thick, heavy, of immense size: a good grower, and a very fine decorative Fuchsia.—*Gardeners' Chronicle.*

The New Roses.

We learn from the *Cottage Gardener* that the Crystal Palace Rose Show was held 19th June, and that although the cold, wet weather had been very unfavourable, yet the show was good, and the flowers were in good colour, not bleached out as they were last season.

"D" of Deal says that judging from what was there shown, he considers that of the roses of 1867, *Elie Morel* and *Baronne de Rothschild* are the best. Elie Morel is a most beautifully delicate light rose with a clear pink edge, well formed and fresh in colour Baronne de Rothschild is light flesh colour, changing to nearly white, very large, globular in form, and altogether a gem. *Duke of Edinburgh*, he describes as a grand high coloured scarlet rose, of first-rate qualities, a veritable English rose; and adds that *Vicomtesse de Vezius* is very bright and good; *La France* an admirable acquisition and most thoroughly free flowering, while he does not think much of *Christine Willson*, or *Baron Haussman; Charles Turner* he considers a reproduction of Mddle. Annie Wood, and, like it, a very beautiful deep carmine-coloured flower, *Mad. Alice Dureau* and *Mad. Bariot* both good, but not remarkably so; *Marie Cirodle* rough and rubbishy; *Madame Noman* a pretty rose in the style of Virginal, *Madame Grondier* is large but not remarkable: *Reine du Midi*, disappointing. *Souvenir de Madame Corcal*, bright salmon, but not to be retained.

Of the Roses of 1868, he says that he regards *Madame Creyton* as one of the best, a large shell-petaled flower, of a peculiar claret rose colour, quite distinct and indispensable; *Souvenir de Monsieur Poiteau*, very distinct in colour and must be grown, notwithstanding it has some of the roughness that characterizes most of Margottin's recent productions; *Reine Blanche*, is beautiful, very nearly white; *Adolphe Brogniart* does not promise much, nor does he think *Nardy Freres* very taking. He pronounces *Celine Noirey* and *Adrienne Christophle*, two beautiful teas, and *Marquise de Mortemart*, a very delicate light coloured flower, that promises to be a favourite.

Princess Christian, exhibited by Wm. Paul, received a first-class certificate, a very pretty light blush flower.

Revd. W. F. Radclyffe says that Alfred Colomb, Marie Baumann and Madame La Baronne de Rothschild are roses he will recommend to the whole habitable globe. The blooms of the Baroness Rothschild were four and a half inches in diameter, and too beautiful to describe.

Speaking of the Royal Horticultural Society's Show, "D," of Deal, says that *Thyra Hammerick*, which is a lovely rose, *Marquise de Montemart*, *Madame Creyton* and *Reine Blanche*, were not exhibited, but thinks they will be found in many a winning collection another year; being, he shrewdly suspects, strongly attacked by the budding knife this season. He says of the Roses of 1868, that in addition to those named above, he would give a trial to *Dupuy Jamain*, a large and well-formed flower, to *Charles Fontaine*, a deep crimson flower shaded with scarlet, and *Victor de Bihan*, brilliant carmine; while *Duke of Edinburgh* has established its claim to be considered one of the very best dark Roses we have. He says that *Viceroy of Egypt* is simply General Jaqueminot over again; that *Lord Napier* is a richly coloured Rose, and *Charles Perry* a promising flower. He does not think much of *Minerve*, *Adrian de Montebello*, or *Perfection de Lyon*. He adds, "we are gradually obtaining larger and finer Roses; and although many still hold their ground, yet, probably, we shall each year see some fresh one taking the place heretofore claimed by older favourites."

Triomphe de Gand and Jucunda.

A comparison of the Triomphe de Gand and Jucunda strawberries exhibits several points of resemblance, and certain well-marked differences:—

1st. In shape there is no distinguishable difference.

2nd. The same may be said of outside colour.

3rd. In point of size, as large Triomphes may be obtained as of Jucundas. I gathered twelve berries of the former on a patch of ground 6 by 30 feet, which weighed 7¼ oz., to 8 oz. of Jucunda, handed me by Mr. J. Freed, of Hamilton, gathered, no doubt, from a much larger patch of ground.

There seems to be no difference in the berries in the depth to which the seed are set. In fact, so near are they alike that the casual observer may be deceived, for there might be gathered a dozen berries of each which to him would represent no difference, but to the skilful grower the following well defined differences do appear.

1st. On observing the flower, it will be seen that in the Jucunda the setting of the stamens around the stigmas are more elevated, the anthers larger, and much better filled with pollen. Here comes in a marked difference in their reproductive capabilities, and it follows that we should find a vastly greater number of germs of new being repro-

scented in the seed of the Jucunda, which overlay the whole berry. They should also be larger and better developed. And this is precisely what we do find.

But the most significant of all is that the very close packing of the seed at the apex of the berry indicates that the stigmas attached to the seed in Jucunda are not only much better organized for the reproductive duty, but are vastly more numerous. Hence the fertility is, or should be, far in advance of the Triomphe. From these evidences we gather that the Jucunda is more prolific, always qualified, however, by soil and position.

Never having seen a bed of Jucundas growing, I cannot speak of the difference in foliage. A cross section of the berries in each variety shows the Jucunda in colour deeper red, and upon testing their flavour a clear difference exists. The Jucunda is the more insipid, and lacks that peculiar flavour and aroma that make the Triomphe de Gand so much of a favourite. And here let me draw a conclusion, which I think my intelligent fruit friends will find to hold good in most other fruits, namely, that flavour must surrender its dominion to fertility. That is, we must look for less germs of new life in the higher flavoured fruits, and less flavour in those which contain the greater number of seed, in the varieties of each distinct species.

The flower of the Triomphe de Gand contains from twenty to twenty-eight anthers, and a great number of stigmas set over the whole surface of the embryonic fruit. The stigmas, though small and irregular, are concave on the upper surface, admirably formed to receive and retain the spermatozoa or pollen grains, which are shaped like the grains of wheat. There are also mixed up with the pollen grains numerous corpuscles, which are no doubt rudimentary grains. They are globular in shape, and under favorable conditions would be developed into perfect organs. The unaided eye may see the beneficial adjustment of the reproductive organs, and so apparent is the beneficial combination of these, that there can be no doubt as to the power of its perpetuation, other conditions being equal. In the mystery of affinity, the law is not yet discovered why it should happen that of two species the spermatozoa of one will readily unite with the stigma of the other, but it cannot be reversed.

W. A. MILLS.

As an example of what Mr. Mills says with regard to the law of affinity, last year we applied the pollen of the Delaware grape to the stigma of the Adirondac, and the pollen of the Adirondac to the stigma of the Delaware. The berries on the Delaware vine, thus fertilized, all set and perfected their seeds, while the Adirondac stigma failed to convey the pollen applied to them to the berry; consequently, not one was fertilized, and they all dropped off.—HORT. ED

Zinnia, New Double-flowered.

This variety is a splendid large plant and beautiful flower, as double as the Dahlia. It is perfectly adapted to our climate, will thrive in any good soil, and may be transplanted as safely as a cabbage plant Seeds may be sown under glass early in the spring, or in the open ground as soon as danger from frost is over. Often the first flowers that open are imperfect, while those following will be quite double. The flowers are injured materially by leaving the plants too long in the seed-beds, so that they become drawn. They like rather rough treatment, and cold, unpleasant weather will do them good after transplanting, so get them out of the seed-bed early. The plants begin to blossom when quite small, and continue to increase in size and beauty until frost. The same flower will continue in perfection for two months or more. The plants branch freely, and grow over two feet in height. Plants in good soil should be set about 20 inches apart each way. My seeds are saved only from perfectly double flowers, and two-thirds and more of the flowers produced will be double. They are of every desirable colour that has thus far been obtained. It is a good plan to set the plants closer than recommended, and pull up all that prove single. The spaces will soon be filled, as the Zinnia branches freely when accommodated with space.—*Vick's Floral Guide*

Arnold's Yellow Canada Raspberry.

The fruit of this variety on a plant in the possession of the writer, at St. Catharines, is now ripening, while all the other sorts are yet quite green, and even many of their blossoms have not yet lost their petals. The fruit is of medium size, of pleasant flavor, though not very high this wet season. The amount of fruit on the plant at this time is hardly equal to the Franconia or Philadelphia, yet on account of its early ripening it is very desirable. The plant is very hardy, having endured the past three winters without any injury, and is the only perfectly hardy white variety in cultivation. It also bears an autumn crop, ripening in October.

July 9, 1869.

A Union County, Ky., farmer has a large owl picketed in his garden to keep watch over his vegetables and prevent depredations by chickens.

ROSE BUDDING.—A correspondent of yours inquires whether any "adhesive substance" can be used as a substitute for tying with bast or cotton, &c. I have tried glycerine and solutions of gummy substances, but found them of no avail. They look very well for a day or two, and then the bark shrivels back in spite of them. Worsted is very unfit for the purpose, and bast is apt to cut the bark. Coarse knitting cotton seems to me as good as anything. *German Gardener's Chronicle.*

THE TRIOMPHE DE GAND, which has a very uncertain character, seems to need very deep culture of the soil to grow to perfection. A stiff soil, highly manured, and deeply tilled, seems necessary to bring this very choice fruit up to the quality that is its character amongst those who grow it well.

EARLY ROSE POTATOES.—We have seen some remarkably fine specimens of this favorite variety of potato, grown by Mr. McCarter, of Toronto. From one pound two ounces of seed, planted on the 4th of May, he dug, on the 12th of July, tubers weighing in all forty pounds. He intends to plant again to ascertain the total produce of two successive crops in one year.

HOW QUINCES ARE GROWN.—Mr. Ohmer, of Dayton, Ohio, who has had good success in raising quinces, spades the ground of his orchard every spring, and scatters a peck of coal ashes around each tree. He finds common salt the best manure on the quince, and applies about one quart to the ground under each tree, after the ground has been spaded, and another quart when the quinces are about half grown. Last year he sold three hundred bushels of quinces from his orchard of three quarters of an acre, at $2 50 to $3 per bushel.

MUSHROOMS.—"A Farmer's Boy" asks how he may distinguish edible from poison mushrooms. The edible mushroom, when it is from eight to twelve hours old, has beautiful pink or flesh-coloured gills—that is, the under side of the crown is of that colour—which have a fresh, sweet smell. As it gets older these gills turn chocolate colour, and it is not so readily distinguished from the poisonous varieties. It is rarely the case, however, that the poisonous varieties are found in pastures and meadows, where the true mushrooms should only be gathered. The former are usually found in woods, and have no pleasant smell. If you sprinkle a little salt over the inner part, the gills, and they turn yellow soon after, they should not be eaten; if they turn black they may safely be eaten. —*Ex.*

CARTER'S CHAMPION CUCUMBER.—This winter, with a dry plain brick flue, I have reared and fruited Carter's Champion Cucumber, with six fruit swelling at one time on one plant in a 16-inch pot; the fruit fit to go to table whole, straight and good as could be, and grown without the slightest bottom heat during any age or stage of growth. Now, if there is anything novel in perfect success without bottom heat, and with a very low temperature (ranging from 55° to 75° during sunny days), my experience may be worth recording. My opinion is that the constitution of Carter's Champion Cucumber, for cultivation in a low temperature with no bottom heat, and in a dark dull winter, combined with the excellent quality of the fruit, entitles it to be better known. I have grown it nearly two feet long in summer. It will be my main frame variety this summer, being quite long enough for regular use, and of a flavor that cannot be surpassed. —Tor. in *Cottage Gardener.*

Agricultural Intelligence.

Fall Exhibitions for 1869.

CANADA.

Provincial	London	Sept. 20 to
Rockwood Union	Rockwood	Sept. 29
Oxford North R.	Woodstock	Oct. 4-5
Simcoe South	Bradford	Oct. 5-6
Burton and Glanford	Glanford	Oct 5
Trafalgar	Palermo	Oct 5, 6
Middlesex West	Strathroy	Oct 6
Wentworth and Hamilton	Hamilton	Oct. 1 to 14
Clarke	Orono	Oct. 1 to 14
King	Schomberg	Oct 14
Erin	Erin	Oct 19
South Ontario	Whitby	Sept 29
North Middlesex	Ilderton	Oct 29 to 30

UNITED STATES

New England	Portland	Sept 7 to
Ohio	Toledo	Sept 7 to
New York	Elmira	Sept 14 to
Am. Pomological Society	Philadelphia	Sept 14 to
Michigan	Jackson	Sept 21 24
Illinois	Decatur	Sept 27 Oct 2.
St Louis Association	St. Louis	Oct 4 9

Agricultural Prospects for 1869.

Avening.—The crops looking well in this part of Simcoe. More than an average is expected.

Aylmer.—The prospect of the crops in this part of the county of Elgin at present is very good. Hay is a good crop and now nearly in the barns; the quality may be somewhat hurt from wet weather, but upon the whole satisfactory. The wheat crop is now nearly ripe, and if the weather should prove favourable will be the most productive crop this part of the country has enjoyed for many years. Oats and peas look well. Roots promise a productive yield.

Ayton.—The crops in this part of Grey all look well; unless the rain spoils them, there will be a splendid harvest.

Alliston.—The promise of the harvest seems to be very fair; everything looks very well. We have had frequent rains and warm sun; all the crops are doing well; we do not hear of any midge, or any other drawback to its doing well. It is a little too showery for hay making, but still, if to-morrow be fine, we understand the most of it will be got in safe.

Ainleyville.—The crops are looking fairly well on an average. The unusually wet weather has kept them back. If nothing untoward happens after this the yield will be a full average.

Bright.—The grain crops in the locality of Bright, County of Oxford, are so far very promising, and well forward. Hay, in general, has been light, and, owing to the extremely wet weather, will not be saved in good condition. Peas offer to be a splendid crop. All root crops, except those in very low lands, are likely to make returns far above an average; would say, on the whole, that prospects are encouraging.

Cummingsville.—Crops in this part of Halton never looked better. There is every appearance of an abundant harvest. No appearance of midge or any other insect in the wheat; and if we only get fine weather for harvesting, I am certain crops will be far above an average in this section.

Caledon.—With respect to the crops in this township, they look exceedingly well.

Clarksburg.—The crops look remarkably well. If Providence favours us with fine weather now till after harvest, we will have an abundant supply for both man and beast in this locality.

Conestoga.—Crops generally promise good, and if the weather will permit safe harvesting, there will be a good average. Haying rather troublesome on account of rainy weather.

Dunkeld.—Present appearances around Dunkeld, County of Bruce, bids fair for an abundant harvest. Hay crop is an average, but very much damaged with wet weather.

Dunnboon.—The crops of all kinds may be set down as good for this section of Simcoe generally. Fall and spring wheat, barley, peas and root crops are all good; old meadows said to be rather light in some places; but a good average grass crop may be looked for. We have had a great deal of rain, which, however, seems to have done no harm, but a great amount of good, and although the season is somewhat later than usual, abundance appears on every hand. All that is now wanted is dry hot weather, which we are earnestly and ardently hoping for.

Embro.—It is too early to give any idea as to the crops yet. In high grounds they are very promising, but on low and level ground the continued wet weather injured them very much; should we get dry weather from this out, the crops hereabout will be a full average.

Exeter.—The crops in this neighbourhood look well. The Fall wheat does not appear to be injured by the midge, and I think it is too far advanced for them to do any serious injury now. Spring wheat at present looks well. The root crops look very promising. Although we have had considerable rain, it does not appear to have injured the crops unless in some low land.

Fingal.—The prospect of the harvest is good. The wheat crop is considerably above the average, a large breadth of it has been sown. Barley and Oats are good. Peas and Corn are somewhat damaged by the wet weather. No doubt if the harvest is well received it will be the largest for many years.

Fullarton.—Hay crop above an average, but from continuous wet weather will be very much damaged. Fall wheat—a great breadth sown and a very fine crop; will be ripe for the sickle generally by the 1st August; no midge; and should we be favoured with fine weather for harvesting, there will be the largest crop of Fall wheat ever grown in Fullarton. Spring wheat—very little sown, will be as a whole below an average crop. Late sowing, to prevent midge, and wet cold weather, has affected the crop seriously on low or flat land. Barley—under average on low land, extra heavy on high land; on the whole a fair crop. Oats and Peas—both very good. Too early to decide on root crops. Should the weather clear up and settle, to mature the crops, and get them into the barn without much loss, we will have a great abundance of the principal cereals. Indian corn will be a failure, but as there is but little planted, it will not seriously affect the country.

Grahamville.—The harvest never was so good. The weather at present is delightful, and the farmers are engaged in getting in their hay. Some will be cutting fall wheat this week. Everything looks well, and the prospect for an abundant crop is excellent.

Granton.—The crops are, in this portion of Middlesex, looking very well at present; but on account of the heavy rains we fear they will not turn out as well as was anticipated. The fall wheat, before the rain, looked better than it has for some years before, ere it shot into head filled well and started to ripen during the warm weather which intervened between the showers. The barley never looked better. Peas excellent. Potatoes could not be better, but a little later than usual. Oats very fair. Hay heavier than usual, but a good deal destroyed by rain, being cut and laying under the rain for some time. Taking crops in general, they are better than for several years before, and all farmers expect to realise a heavy amount of grain.

Glenallan.—A correspondent says he can give a very favourable account of every kind of grain crop, excepting peas, which in many places are destroyed with the continued wet weather. Hay also is good, corn is not good. Potatoes, like peas, are in very many places drowned out, so that they are rotted. The turnip and carrot crop depends entirely on the weather to come. I may say confidently that warm genial weather will yet give a full average crop of Spring wheat. Oats and barley—Yesterday, we were visited with several very heavy thunder showers, accompanied with heavy winds and large hail, which has beat down the full wheat, the more easy from the heads being so full and heavy; the result will depend much on the coming weather. However, the cool weather will not encourage rust, and should the stalks of the grain recover a little of their original perpendicular position, sufficient to prevent them from rotting on the ground, the crop may yet be saved.

Hespeler.—Prospects of harvest very good throughout Waterloo and Wellington Counties.

Hanover.—The crops here, in the County of Grey, look very well generally, though the midge has shewn itself among the fall wheat to a considerable extent. The spring crops promise to be good, except on low land, where they are thin on the ground.

Houghton Centre.—The crops in this portion of Norfolk are generally good, a little over the average, excepting corn, which is a little late, and very liable to be hurt by early frost.

Hornby.—The crops throughout the County of Halton are altogether excellent, never before excelled, and rarely equalled.

Kingsville.—With respect to the crops in the vicinity, in Essex, the wheat is abundant, the grain plump, good colour, and otherwise satisfactory. Oats and barley are also good, both in quantity and quality. Potatoes, save in low lands, promise well, but Indian Corn will be almost an entire failure. This County being in general very level has suffered very much from the continued heavy rains and the coldness of the season.

Loretto.—The crops of all kinds are excellent in this part of Simcoe. Owing to the damp weather the harvest will be very late. Wheat will probably ripen about the end of the month.

Mount Vernon.—Never have the crops of any kind looked more prosperous than they do this season about here, and if nothing comes over the crops unusual we will surely have an abundant harvest. As for wheat, both spring and fall, oats, barley, and peas, will turn out very largely. In fact, crops in this locality are not surpassed in Ontario. The corn crop bids very unfair for a time; but this last few days or weeks back it has sprung up fast, and we hope to have a good crop yet. The hay crop has done much better than was expected.

MILLBANK.—Fall wheat looks well; but the spring wheat on low lands is suffering from the wet; but still there will be an average crop if the harvest time is dry. Barley and peas have suffered with the rain. Root crop—potatoes and turnips look well. Hay is good.

MONKTON.—As a general thing the crops in this neighbourhood are either entirely drowned out or injured more or less by so much rain, the land in general is swamp or marsh land. The hay and spring crops will not be worth cutting unless the weather abates at once. Potatoes and other root crops are so far damaged that they cannot recover, except a few fields of rolling land, or otherwise drained, and there is no demand for lumber or Hemlock bark as of previous years, and without a change of affairs settlers will suffer.

MONTREAL.—A correspondent reports that in the rolling country hereabouts, the crops are now looking fine, and if dry weather come in will be very profitable to the farmers, thence to the business men. Fall wheat and flax are extensively cultivated here, and are extra heavy. Barley is much extended this season. All spring crops are later than usual, on account of wet, cool weather. The midge appears not to be affecting the fall wheat; but on spring wheat nothing can yet be said. Hay is a fair crop, but a great deal injured by wet.

MILTON.—Crops of all kinds, with the exception of the hay crop, which is rather below an average, are good. They have not been as good since 1856. There is a greater breadth of Fall wheat sown than there has been since that date, and a large quantity of Spring grain. Root crops promise well. The promise of an abundant yield of all kinds of crops in the County of Halton never was better.

MOUNT PLEASANT.—Crops are generally good, if weather proves favourable. Haying is about over; a good crop in this vicinity, some yielding two to three tons per acre. Barley promises a heavy crop. Wheat looks well, and every appearance of a large yield. Peas good. Oats good. Corn very light, from wet weather. Potatoes looking well. Cheese factories are making large quantities, for that reason butter is very scarce, and commanding a good price.

MCGILLIVRAY.—The crops promise abundant harvest; but we have had a great deal of rain. The fall wheat never looked better.

OAKLANDS.—The crops of all kinds, except corn, are good; and if we can have good weather to secure it, the yield will be much above former years. The hay has been considerably injured by the wet, rainy weather.

PENVILLE.—The crops of all kinds round this section look remarkably well, and should we have weather to save them they will exceed any we have had for many years.

PORT ROWAN.—The crops of all kinds are very good—better than has been for many years. Hay is now being got in, but it is somewhat damaged by the wet weather. Nothing can hurt the wheat crop now; it will be all right if the weather will allow it to be got in without growing, which many farmers fear now. There is no blight or damage of insects.

PRICEVILLE.—The crops are looking fair, but late, in this part of Grey. If the weather should change and continue dry and warm until after harvest there would be over an average of wheat, oats and peas. But with continual rain, as we have had for the past six weeks, there is danger of crops being so late here that the fall frosts will injure or nearly destroy them. No fall wheat, and very little barley about here.

PORT DOVER.—Crops of all kinds in this section of the country may be classed under one general head, that is ABUNDANT. There has not been as great a burden on the ground for many years, taking all kinds of crops together. The weather has been somewhat unfavourable for farming operations for the last few weeks. The hay crop has been nearly all housed in fair condition, notwithstanding the rainy weather. There was a larger breadth of wheat sown last fall than for some years past. It escaped winter killing to any great extent; also the midge and other insects which have infected it for the last few years. The season has been favourable to its filling well. Some fields are already cut, and if fine weather sets in to enable the farmers to secure it in good condition, we shall have a large quantity of prime grain to dispose of. Barley is looking remarkably well. Corn is backward; but with favourable weather in August and September there is sufficient time for it to mature. Root crops of all kinds are promising an abundant return. Fruit—apples will not be as abundant as last year; but the yield will be sufficient for home use. Cherries and the smaller fruits are plenty, except plums, which will be scarce.

ROSEMONT.—The crops look beautiful, and the fall wheat will be heavy. Spring wheat looks well, but will probably be rusted. Barley and oats are a good crop. Potatoes never gave a better prospect. Turnips are also splendid. The hay crop is good, but farmers find some trouble in saving it.

SPARTA.—The crops are good in this portion of Elgin County this season, and the prospects of the farming community are flattering.

SINGHAMPTON.—There never was in Bruce a finer appearance or better promise of an abundant harvest. Fall and spring wheat look remarkably well, much heavier than last year, but the harvest will be late in consequence of so much rain and cold during the month of June. All other crops are looking very fine.

SEVERN BRIDGE.—The crops look well on the whole at this season, better than other years, with the exception of the grass, which I believe will be lighter than usual, the season having been colder and more wet than other years.

ST. WILLIAMS.—A correspondent says, Our crops are looking very well Some of the farmers are complaining of rust in wheat, and a good many pieces are badly lodged. The weather has been and is now very wet for getting in the hay, which I think is an average crop. Spring grains, with the exception of corn, are looking well.

ST. JACOBS.—All kinds of crops look well, and promise well if the wet weather should cease and fair dry weather set in. However, unless we have fair weather before long and less rain all kinds of grain will suffer much. All depends upon the state of the weather for the next month.

STRATFORD.—The crops in this part of the country are very good. Harvesting fall wheat just commenced; to all appearance we shall have a bountiful harvest. Gardens are splendid, and small fruits abundant. Larger fruits rather scarce. Weather bad. We have had to save hay damaged by rain.

ST. GEORGE.—In this locality in the county of Brant, the crops are all good. Hay is being got in a fair crop, not extra; a good deal of it injured by rain while curing. Wheat and barley look very fine, some of it down rather much. Fruit very abundant. Potatoes and root crops look unusually well. Farmers in this section are in such a position that good or bad crops make very little commercial difference, it is only a question of how much they can add to money in bank, or mortgage, or what neighbour they can buy out.

WINCHELSKA—The prospects of the crops in this locality of Huron were very good if we had not had so much rain lately, but the prospects now are very discouraging; the farmers have a great deal of fall wheat, and the storms have beat the wheat down to the ground.

WASHINGTON.—A correspondent from Norfolk county says that, although the weather has been very wet, yet it has been very favourable if it kills the midge. Fall wheat heavily sown, and very good; extra crop. Spring grain good. Hay will be badly gathered for it is over average. Barley very largely sown; appears very good. Peas largely sown; very heavy at present. Flax—an average amount sown; will fall by the wet, be damaged in fibre if not in seed. Corn—not much planted; too cold for it any how. Turnips—more than an average; large quantities raised. Carrots not an average crop. Potatoes—plenty this year for our bread. Fruit will be in abundance in this locality; crop's the best in appearance since 1857-'58. Fall wheat never looked more promising. Spring wheat looks well. Too much rain for both, and unless we get dry warm weather the grain crops will be ruined. Fall wheat is already rusted in the blade; no appearance yet in the stock. Peas, barley and oats look well.

Large quantities of farm stock have been exported from London to be sent to Salt Lake.

One of Mr Willard's English correspondents, writing from London, says the stock of cheese was never so short there as now.

Farmers in Minnesota are paying twenty-four per cent. interest for money to hold their wheat, not wishing to take eighty or eighty-five cents a bushel for it.

It is probable that the corn crop of the Northwest will be light, owing to excessive rainy weather thus far during the season. In some places in Wisconsin, Iowa, and Northern Illinois, it will be almost an entire failure.

The wheat crop this year of St. Clair Co., Ill., is estimated by persons who are represented as competent judges, to be not less than two and a half millions of bushels. This exceeds by one million any previous yield.

In one of the girls' schools at Rochester, there is a teacher of gardening. The Iowa Agricultural College takes young ladies, and there is to be a Professorship of the Theory and Practice of Butter-making. All of which is sensible.

STEAM PLOUGH.—Col. Wm. E. Patterson, of Ashton, N J, has lately imported a steam plow from Leeds, England. It was tested recently, on the Colonel's farm, in the presence of a large number of people. Col. Capron, of the Department of Agriculture, was present. The trial was satisfactory.

AUSTRALIAN BEEF AND MUTTON.—The Lansdowne, from Melbourne, has brought 2,000 cases of Australian beef and mutton of about 70 tons weight. This is the tenth shipment which has arrived since the beginning of March, and the consignees state that the demand for these provisions is so great for the manufacturing districts as to engage each shipment long before its arrival.

Household.

Use of Sugar with Fruits.

A communication in a late number of the *Country Gentleman* contains some hints from a chemist on the economical use of sugar with fruits. This writer says:

"Sugar is a valuable addition to most kinds of food, not only because it improves the taste, but because it is valuable as nutriment. It happens, however, that the latter feature is with most persons counterbalanced by the tendency which it has to produce acidity, and therefore it will be found best to use as little free sugar as possible. Motives of economy point in the same direction."

A chemist goes on to observe:

"There are various kinds of sugar, as cane sugar, fruit sugar, starch sugar, &c. Cane sugar is obtained from other plants besides the cane—beets, for example—and it posseses the most powerful sweetening properties. It is not difficult to convert cane sugar into starch sugar, and unfortunately, the latter has a very low sweetening power. But it is very difficult to convert starch sugar into cane sugar. Now it happens that when cane sugar is heated in the presence of vegetable acids—as, for example, when we bake it in a pie with rhubard—it becomes largely converted into starch sugar. *It is therefore more economical to sweeten pies and tarts after they are baked than before it.* The difficulty which is usually met in this case, however, is that much of the sugar so applied passes into the stomach without effecting the palate. *Sugar cannot impart its taste until it has been dissolved.* When we mix sugar with tea, coffee or pudding, it becomes dissolved, and we get its whole sweetening power. "When we pour large quantities of sugar powder, or still worse, sugar in crystals, over pies, strawberries, &c., a large portion of it never affect the palate, but passes directly to the stomach,' and whatever may be said by popular theoretical writers who prate of carbon, nitrogen, oxygen, &c., at third hand, sugar is very apt to produce derangement of the digestive organs. The proper way, therefore, is to dissolve the sugar and pour it over the article to be eaten. The quantity of sugar which boiling water will dissolve is wonderful, and warm milk or cream takes up enough for all ordinary purposes, and does not deposit it again when cold. Of course it will not do to *boil* the milk or cream, as that would injure its flavour.

CEMENT FOR FASTENING HANDLES.—A material for fastening knives or forks into their handles, when they have become loo-ened by use, is a much needed article. The best cement for this purpose consists of one pound of colophony, (purchaseable at any druggist's,) and eight ounces of sulphur, to be melted together, and either kept in bars or reduced to powder. One part of the powder is to be mixed with half a part of iron filings, fine sand or brick dust, and the cavity of the handle is then to be filled with this mixture. The stem of the knife or fork is then to be heated and inserted into the cavity, and when cold it will be found fixed in its place with great tenacity.

CLEANING GILDED WARE.—In cleaning gilded ware, there is a difference to be observed between articles gilded by fire or by the galvanic process, and articles gilded by imitation gold, such as frames for instance. For cleaning articles gilded by the first named methods, one part of borax is dissolved in sixteen parts of water. With this solution the article is carefully rubbed by means of a soft sponge or brush, then rinsed with water, and finally dried with a linen rag. If at all convenient, the article is warmed previously to being rubbed, by which means the brilliancy of it is greatly increased. In cleaning gilded frames of the last named order, pure water only must be employed, and the rubbing off of the impurities must take place by means of a very slight pressure. Wares of imitation gilt are generally covered with a shellac or resin varnish, which would be dissolved by the application of soap-water, alkaline solutions, or spirits of wine. Were the varnish rubbed off, the exceedingly thin layer of gold or silver leaf beneath would also disappear. In our experience we have seen hundreds of once valuable but now worthless frames, they having become thus simply by the application of soap water. —*Manufacturer and Builder.*

SOAP MAKING.—Mrs. L. C. Merriam, Lewis Co., N. Y., sends the following, which she assures us makes most excellent soap. "For one barrel of soap, pour into a strong barrel four patent pailfuls of lye that will bear up an egg; add thirty pounds of melted grease (previously tried and strained) and mix them well together. Let stand a few hours and then stir thoroughly. As soon as the soap begins to thicken, add weak lye, one or two pailfuls at a time, until the barrel is full. Be sure to stir the soap thoroughly each time the lye is added, and afterward stir once or twice daily for three days. For those who live in cities, the following recipe for potash soap is invaluable. Put in a strong barrel twenty-five pounds of potash, broken into small pieces. Pour over it four and a half pailfuls of boiling water. Stir well, let stand twelve hours or more, and then dip off carefully three and a half pails of the clear lye into another barrel. Next heat thirty pounds of strained grease, boiling hot, and pour into the lye. Stir well, and let stand until it begins to thicken, which may be in three or four days, then add two pailfuls of weak lye daily until the barrel is full, stirring well each time. The weak lye is made by adding more water to the potash which remained in the barrel."—*American Agriculturist.*

PRESERVING EGGS.—No egg is fresh that will shake. This is because it has lost some of its albumen. No egg has ever been preserved over a month that will not shake, except it be air-rooted, which is a term not generally understood, and is a new process. The egg has been coated with every conceivable composition, even in solid stone, and galvanised, yet the watery material escapes. The philosophy of this is that there is air in the egg before it is treated, and this, uniting its oxygen and carbon, produces decomposition by carbonic acid gas, the yellow of the egg first breaking; then follows the destruction. Eggs are naturally designed to last as long as the hen requires to get her brood, and the life germ can be preserved a few weeks, seven or eight, but no longer. The egg itself may be kept in a preserved state for two years, by greasing with butter, oil or lard; but from the time it is thus put up, to the end of two years, it will daily lose its albumen by transpiration, and while its carbonic acid escapes to a certain extent, the eggmeat will be reduced two-thirds, and will shake. For culinary purposes they will do well. But we want a whole egg, not a half one, and we want them fresh. Butter, and lard, and suet have been used for half a century, still nothing has recommended itself over the liming system in a commercial point of view. The theory has always been, and still is, that to keep an egg fresh the air must be excluded. It is the only philosophical treatment of it that can be made. Externally kept from the air, the latter is powerless to do harm, but the air inside no mortal can prevent, and that alone in time will decompose the egg.

Poetry.

FLOWERS.

Flowers, flowers everywhere!
How they scent the summer air
With a fragrance rich and rare.

Bright they bloom and do not shrink
By the rushy river brink,
Where the birds fly down to drink.

And they colour mountains steep,
Safe beyond the farthest leap
Of the nimble mountain sheep.

And they hide amid the grass,
Tall and trembling, where, alas!
Still the subtle serpents pass.

Lonely to the crag they cling,
Where the surge is echoing,
And the sea bird prunes its wing.

Thick they cluster by the side
Of hot roads all dusty dried,
Smiling sweetly open-eyed.

Tenderly they bow their head
Over graves where lie the dead,
And soft-raining tears are shed.

Ah, He told us long ago
That the flowers might bestow
Knowledge it were good to know;

How God plants them everywhere,
Gives them sunshine, rain and air,
Bids them blossom without care:

How God clothes them every one,
Finer colours they put on
Even than King Solomon.

Oh! if He can condescend
From His highest heaven to bend
And to be the flower's Friend,

We may rightly reason thus,—
He will condescend to *us*,
Being much more glorious.

If His loving law we heed,
He will give us all we need,
Bless our lives in thoughts and deed.

Presently, when He sees best,
He will find us room and rest
In the Gardens of the Blest.

Miscellaneous.

Shape and Strength in Wood.

A very useful rule in practice, in giving strength to structures, is this:—*The strength* of every square beam or stick to support a weight, increases exactly as the width increases, and also exactly as the *square of the depth* increases. For example:—A stick of timber eight inches wide and four inches deep (that is, four inches thick) is exactly twice as strong as another only four inches wide, and with the same depth. It is twice as wide, and consequently twice as strong; that is, its strength increases just as the width increases, according to the rule given. But where one stick of timber is twice a deep, the width being the same, it is four times stronger; if three times as deep, it is nine times stronger, and so on. Its strength increases as the square of the depth, as already stated.

The same rule will show that a board an inch thick and twelve inches wide, will be twelve times as strong when edgewise as when lying flat. Hence the increase in strength given to whiffletrees, fence-posts, joists, rafters, and string-pieces to farm bridges, by making them narrow and deep.

Again, the strength of a round stick increases as the cube of the diameter increases; that is, a round piece of wood three inches in diameter is eight times as strong as one an inch and a half in diameter, and twenty-seven times as strong as one an inch in diameter This rule shows that a fork handle an inch and a half in diameter at the middle, is as much stronger than one an inch and a quarter in diameter, as seven is greater than four Now, this rule would enable the farmer to ascertain this without breaking half a dozen fork handles in trying the experiment, and it would enable the manufacturer to know, without the labor of trying many experiments, that if he makes a fork handle an inch and a half in the middle, tapering a quarter of an inch toward the ends, it will enable the workman to lift with it nearly twice as much hay as with one an inch and a quarter only through its whole length.—*Ohio Farmer.*

Care of a Watch.

Do not make a toy of it for yourself or the children. Never open it except for necessary purposes.

It should be regulated to about mean temperature, and always kept as near the same temperature as possible.

It should not be allowed to stop. Better that it be kept running all the time.

Keep it in as uniform a position as possible. If in the pocket, better that the pendant ring be upright.

Out of the pocket, if it hang on the wall, let it be upon some soft surface. Never allow it to lie on bare marble or other hard surface. If it is to lie on any surface, let it be with face up, and pendant ring turned under, so as to keep the upper part most elevated. Let your key fit exactly, and be kept perfectly clean. By the former you may save breaking chains, main-springs, ratchets, clicks, &c., by the latter prevent introducing much dust.

Wind, if possible, at the same hour each day.

While winding, hold your watch steadily in your left hand. Turn only your key, and that firmly, evenly, avoiding all quick motions or jerks.

Set your watch with a key; never turn the hands by any other way. You may turn the hands either way without danger, if they do not move very hard.

Markets.

Toronto Markets.

"CANADA FARMER" Office, Aug. 12th, 1869.

FLOUR AND MEAL.

The market has been quiet, but prices have kept firm at the following rates:—

Flour—No. 1 Super, $4 85. Fo. Fancy, $4 90. Do Extra, $5 00.

GRAIN.

The market has been quiet, with very little doing. The quotations of Barley, Peas, and Rye may be considered merely nominal. The following are the figures:—

Wheat, spring, $1 06 to $1 07 Do. fall, $1 07. *Oats*, 52c. *Peas*, 70c. *Rye*, 65c.

HAY AND STRAW.

Hay—New hay sells at from $9 to $14.

Straw is in light supply, selling at from $5 to $8

PROVISIONS.

The following are the quotations.—

Butter—Dairy, choice, per lb., 14c. to 14½c Do. in rolls on the market, 17c to 18c.

Cheese.—In lots, 11c Do. Receipt's Stilton and Queen's Arms, 17c.

Pork.—Extra prime, per bbl., $22. *Bacon, rough*, 12c. to 12½c. Do. Cumberland Cut (boxed), 12c. to 12½c.

Hams—13c. to 13½c.

Lard—In crocks, 16c. to 16½c., do. in kegs, 15c. to 16c.

Beef Hams, or Spiced Beef—13c. Do Retail, 17c.

THE CATTLE MARKET.

The market has been poorly supplied, and good cattle have been much inquired for Those offering were principally 2nd and 3rd class We quote per 100 lbs, dressed weight: 1st class, $6 to $6 50; 2nd Do, $5 to $5 50; 3rd Do, $4 to $4 50.

Sheep.—No large supply, and prices are firm We quote: 1st class, $4 each; 2nd Do, $3; 3rd Do, $2 50.

Lambs—In plentiful supply, with a good demand. We quote: 1st class, $3 each; 2nd Do, $2 25; 3rd Do, $1 75.

Calves—Not much looked after and prices lower. We quote 1st class, $6; 2nd Do, $4; 3rd Do, $3.

PROVINCIAL MARKETS.

Hamilton.—There is really no local grain market here at present. The vegetable market is well supplied. *Potatoes* are remarkably plentiful and fine. *Fresh Butter*, in rolls, sold from farmers' waggons early in the day at 20 cents. Other commodities without material change. Prices (silver): *Wheat*, white per bush., $1 05, do., red, per bush., $1.05, spring wheat, per bush, $1; *Peas*, per bush., 62½c. to 65c., *Oats*, 56c.; *Barley*, 75c.; *Mutton*, per lb., per side, 5c. to 6c.; *Lard*, 13c to 14c.; *Veal*, per lb., per side, 5c. to 6c.; *Butter*, tub, 15c. to 17c.; do., rolls, 18c. to 19c.; *Tallow*, per cwt., $6 to $7 75; *Honey*, per lb., 20c.; *Turnips*, per bush., 20c.; *Onions*, per bush., $2.

Guelph, Aug 3.—*Fall Wheat*, per bush, $1 04 to $1 05; *Spring Wheat* per bush., $1 04 to $1 05. *Oats* per bush., 65c. to 68c. *Peas* per bush., 70c. to 75c. *Barley* per bush., 60c. to 65c. *Wool*, 30c. to 31c. *Hides*, per 100 lbs, $4 50 to $5. *Beef*, do., $7 to $8. *Pork*, do., $7 to $9. *Straw* per ton, $3 to $4. *Hay* per ton, $8 to $10. *Eggs* per dozen, 12c. to 13c. *Butter* per lb., 14c. to 15c. *Apples* per bush., $1 to $1 12. *Potatoes* per bag, 60c. to 70c. *Sheepskins*, 80c. to $1 25.

London, Aug. 3.—There were a few loads of Fall and Spring Wheat and Oats in.—*Fall* brought from $1 to $1 01; *Spring* from $1 to $1 03, and *Oats* from 55c. in bills to 60c. in silver. *Potatoes* plentiful, at from 50c. to 70c. per bushel. *Wool*, one large lot changed hands at 31c., and a small, inferior parcel, at 28c.

Advertisements.

Contents of this Number.

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GEORGE BROWN,
Managing Director.