

Technical and Bibliographic Notes / Notes techniques et bibliographiques

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

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

Coloured covers/
Couverture de couleur

Coloured pages/
Pages de couleur

Covers damaged/
Couverture endommagée

Pages damaged/
Pages endommagées

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

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

Cover title missing/
Le titre de couverture manque

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

Coloured maps/
Cartes géographiques en couleur

Pages detached/
Pages détachées

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

Showthrough/
Transparence

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

Quality of print varies/
Qualité inégale de l'impression

Bound with other material/
Relié avec d'autres documents

Continuous pagination/
Pagination continue

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

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

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

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

Title page of issue/
Page de titre de la livraison

Caption of issue/
Titre de départ de la livraison

Masthead/
Générique (périodiques) de la livraison

Additional comments:/
Commentaires supplémentaires:

Wrinkled pages may film slightly out of focus.

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

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

The Field.

Germination of Seeds.

The time during which seeds will retain their vitality varies extremely in different species, and under different conditions. Freshly gathered seeds only just ripened, will in general vegetate quickly, but if they have become hardened and dried they are often started into growth much more slowly, yet will remain alive for a long period.



FIG. 1. FIG. 2. FIG. 3.

Some seeds, says Dr. Lindley, will retain their germinating powers many years, in any latitude, and under almost any circumstances. Melon seeds have been known to grow when 40 years old, maize 30 years, rye 40 years, the sensitive plant 60 years, kidney beans 100 years, and clover will come up



FIG. 4. FIG. 5.

from soil newly brought to the surface, in places where no clover had been previously known to grow in the memory of man. The same authority mentions an instance of raspberries which had been raised "from seeds taken from the stomach of a man whose skeleton was found 30 feet below the surface of the

earth, at the bottom of a barrow which was opened at Dorchester (England.) He had been buried with some coins of the Emperor Hadrian, and it is therefore probable that the seeds were sixteen or seventeen hundred years old."

The conditions necessary for the germination of the seed are water, heat, and air, (or at least oxygen.) Darkness is also favorable, though not, like the other conditions, essential. The effect of water is to soften the seeds, causing them to swell, and dissolving the soluble part of the nourishment prepared for the young plantlet. The chemical agency of oxygen is also necessary to the process; and hence seeds immersed in water that has been boiled (from which therefore the free oxygen has been expelled) will not germinate. The oxygen combines with a portion of the carbon contained in the seed, forming carbonic acid, which is liberated. This chemical combination is attended with the disengagement of heat; hence the elevated temperature of masses of barley in the process of malting. The oxygen, besides, plays an essential part in the conversion of the starch of the seed into sugar, which thus becomes soluble, and fit for nourishing the young plants. The amount of heat required for the process of germination varies very much with the species; for while some will germinate at a temperature very little above the freezing point of water, it requires in others a temperature of 100° to start the seed into growth. Each seed shoots into most vigorous growth when exposed to just that amount of heat most suited for itself. If the temperature is too high, growth is stimulated too rapidly, more rapidly than nourishment is furnished, or can be properly assimilated, and a weakly plant, too much excited and insufficiently fed, is the result. If the temperature be too low, the excitement is not sufficient, and the water that has been imbibed will induce decay instead of germination. The variety of temperature required for different seeds explains why it is impossible to make some seeds grow in certain latitudes. The seeds of barley, wheat, and some other cereals, it is found, would be killed by a temperature as high as that which the surface of the soil acquires in tropical regions.

Exposed to the combined influences of water, heat and oxygen, which soften and dissolve the store of food, and stimulate the life principle inherent in the seed, the tiny plantlet which, as we have seen, existed, ready formed in the embryo, begins to develop and grow. The gradual change is well seen in the common maple of our own woods, where the seed consists of embryo and covering only. First the cotyledons are coiled up as compactly as possible within the seed-coats gradually they unfold and increase in size, the tiny stem lengthening also, and carrying them above the surface of the ground, where they expand fully, and under the influence of light assume a green colour. The plantlet thus begins to eliminate fresh nutriment from the air, while at the

opposite extremity the tiny radicle has penetrated into the soil, and thence absorbs its appropriate food.

In the accompanying illustration, Figure 1 represents the embryo of the sugar maple, as coiled up within the coats of the seed, there being no albumen. Figures 2 and 3, represent the gradual development of the same seed. From between the two seed leaves, we next observe the growing point extends upwards and develops another pair of leaves, more like the ordinary maple leaf. Between these again, the terminal end shoots still up, and forms



FIG. 6. FIG. 7. FIG. 8.

another joint of the stem, with another pair of fully developed leaves. In the meantime the root has continued to ramify below, just in proportion as the stem has increased above ground. Figures 4 and 5 illustrate the successive stages of this growth. The subsequent history of the young plant consists in a



FIG. 9. FIG. 10.

continuous repetition of the same process, i.e., the formation of fresh buds, stem joints and leaves, the lateral extension being attained by the formation and subsequent growth of leaf-buds at the junction of each leaf with the stem, the axil of the leaf, as it is called.

In the class of plants whose seeds have only one

cotyledon, the process of germination is very similar, though with slight modifications. As in these the single cotyledon always remains under ground, and the caulicle or embryo stem bursts the seed-coats and sends out in two opposite directions the plumule and radicle, the latter producing a number of rootlets as the former ascends and develops its alternate leaves one above another.

Figures 6, 7 and 8, are representations of a grain of maize, in Figure 6, seen flatwise and cut through the middle, showing the embryo in the centre, surrounded by the abundant albumen; figure 7, the same cut through the middle in the opposite direction; and Figure 8, the embryo taken out whole: the thick mass is the single cotyledon; the narrow body partly enclosed by it is the plumule; and the little projection at the base is the very short radicle. Figures 9 and 10 show the germination and subsequent increase of the young cornplant. The process is the same in wheat and the other cereals, grasses, &c.; but maize being a grain of large size, forms a better example for ready examination.

The foregoing illustrations have been taken from an excellent work by Dr. Gray, entitled "Structural and Systematic Botany," which we cordially recommend to any who may wish to pursue this interesting study.

In dealing practically with seeds, our object is not always to promote germination; sometimes we wish to check this tendency, as when we wish to preserve the seeds for future use, or to transport them to a distance: and as we should naturally expect, the requisite conditions for retaining the seed in a dormant state are just the reverse of those we have been considering as favorable to germination. For the latter object we require moisture, heat and air; for the former we aim to keep the seeds dry, cool, and shut out from the access of air; with this end in view, it is often best to transport seeds in their own pods or seed vessels, which form excellent non-conductors of heat, and serve effectually to exclude the air. The importance of fresh seed in preference to old, will also be apparent. For the newer they are, the more readily they germinate; and though in some instances their vitality is retained for a very long period, in others the power of germinating is soon lost, and the seed dies.

A Lecture on Manures

Among the many useful institutions of modern times, farmers' clubs hold an important place, and contribute not a little to agricultural progress. It is to be regretted that there are not more of them, and more cordially supported amongst ourselves. Occasionally, however, we obtain very gratifying reports of their proceedings; and of this character are the accounts we have received of the Peel Farmers' Club, the meetings of which are often highly interesting and ably conducted. At one of these meetings, held in Brampton, an admirable lecture was delivered by Mr. McLellan, on the subject of manures. We have not space to publish the whole of this lecture, but the substance was as follows:—

By the term manure is meant anything that is applied to increase the fertility of the soil. The food of plants exists in two different conditions, namely, in a state of chemical and of physical combination, the latter only being soluble and available for the use of plants; and when the soil has become exhausted, it is necessary either to apply directly fresh soluble material or such agents as shall render the material already existing in the soil soluble, and capable of being absorbed by the roots. In considering the subject of manure, then, Mr. McLellan proposed, 1st, to notice the methods of rendering the elements of food already contained in the soil in an insoluble state, or in chemical combination, soluble and available to the roots of plants; and, 2nd, manuring by barnyard and artificial manures. We must confine ourselves, for the present, to the first only of these topics.

The principal agents by which the disintegration and decomposition of plant food are effected are water and carbonic acid. To speak first of the latter, this agent plays an important part in the process, and the practical problem for us to solve is, how to add carbonic acid to the soil. One means of effecting this object is by ploughing in green manures; for in the decay of all vegetable as well as animal matter carbonic acid is produced. It is by the addition of this chemical agent, which forms new and soluble compounds of what was before insoluble, and therefore useless to plants, that the ploughing in of buckwheat, and all green crops, proves beneficial.

It has been asked, how can the ploughing in of a crop of clover benefit the soil? For, it is said, the clover previously abstracted the elements of plant food from the soil on which it grew, and by ploughing it in we only restore what was abstracted—nothing is, therefore, gained in the process. To this we reply, that the condition in which the mineral elements are restored is one of perfect solubility, precisely fitted for the immediate nourishment of the succeeding crop. Moreover, the growing clover has obtained a large amount of carbon and oxygen from the atmosphere, and these elements, in the condition of carbonic acid, are given out in the process of decomposition, and thus impart to the soil a large additional amount of a most important chemical agent for supplying fresh food. Again, the benefits of clover do not stop here. It is an established fact that clover, peas, turnips, and some other crops, draw the principal portion of their food from the subsoil, and not from the arable soil, by means of their deep, penetrating roots. These crops, therefore, when ploughed in, supply to the arable soil a large amount of inorganic matter, fitted for plant food, which was derived from the deeper subsoil, and thus render the additional food available to such cereals as wheat and barley, whose root ramifications are very limited and superficial.

As a question of manure simply, Mr. McLellan contended that ploughing in clover was preferable to eating it off by cattle, and subsequently applying the barnyard manure; for by the former process nothing was lost, whereas by the latter a considerable portion of nutriment was abstracted, and only a portion returned in the cattle-droppings. As a question of profit, taking into consideration the increased value of the animals, the advantage might be on the side of stock-raising.

All fields intended for fallow should be seeded with clover, which was especially recommended as a green manure, without which, indeed, the lecturer did not think it possible to maintain the productiveness of a farm.

Another important matter requiring attention in connection with this subject was the thorough pulverization of the soil, without which, however rich the ground might be in plant food, it was entirely beyond the reach of the delicate root fibres, which would fail to penetrate the indurated masses of earth that, in this condition, were no better than so much rock or stone. Hence the necessity of thorough and well-timed ploughing and efficient harrowing. Hence, also, the great advantage of under-draining, whereby the superfluous water would be carried off, and the arable soil kept in a friable state. When land is under-drained, a large quantity of water falling upon it is a benefit rather than an injury; for as it permeates the ground it loosens both arable and subsoil, rendering them friable and porous, admitting air, and enabling the roots of plants to penetrate freely in all directions, and to a greater depth. And again, the water, in its passage, dissolves a considerable amount of nutritive matter, which is retained by the arable soil by virtue of an inherent quality thus to absorb the elements of plant food. The nutriment thus dissolved is not washed away, as the soluble ingredients of a manure-heap are washed away and wasted by rains, but are absorbed and retained in the soil.

In concluding this part of the subject, Mr. McLellan observed, that if farmers would turn their attention to under-draining, and to those things which aid in rendering the nutritive matter already contained in the soil soluble and available, they would find the fertility of their land increased, in a great many cases, much more than by the application of barnyard and artificial manures. We hope to give a report of the remaining portion of the lecture in another issue.

Flax Culture.

To the Editor of THE CANADA FARMER.

SIR,—It is now some time since you had a word from me on this important branch of industry; not because I do not still consider it as important as ever; but while farmers have been getting nearly \$2 a bushel for wheat they are not likely to give it so large a share of their attention. Having heard lately several complaints of Midge and Weevil, which I fear we are still to suffer from more or less until we adopt a more regular rotation of crops, flax recommends itself to the attention of the agriculturist as one of the many remedies we have to fall back upon. And although we have had some little drawbacks this last year in quarters where we least expected, still others are taking the matter up in other sections of the country; and if our acres, under all these circumstances, are not on the increase, we certainly are holding our own. In the township of Mono, *one farmer alone, the Rev. Doctor Freeland*, who thoroughly understands the cultivation of flax from many years' experience in the old country, has no less than fifty acres under crop this season, and from him I learned, the other day, that it looked remarkably well. At St. Mary's and several other places the quantity is on the increase.

While some have been unsuccessful in their efforts, from perhaps having extended their operations a little too widely, it *must not be forgotten that this may happen in flax operations as well as in any other branch of business*. Those who have purchased largely of both wheat and flour may be unsuccessful in their operations, as well as those who may have gone too deeply into the flax business—we must always be prepared for such drawbacks; but to the farmers I would say, there can be no risk in their trying a few acres, say from two to three on each hundred. For seed alone they will find it compare favourably, as a paying crop, with most others. By referring to a letter in a former number of your paper, it will be seen that a farmer near Woodstock realised over twenty-one bushels to the acre from the sowing of only 50 lbs. of seed. At an average of \$2 per bushel, the current price the last season, this yield would net him over \$40 per acre, without looking to the fibre which produced this fine crop, and should, if properly cared for, have realised at least an equal amount. However, we have yet much to learn in connection with this new crop, and it may not be amiss to mention here, to those who have not a scutching mill within easy distance of say ten miles or so, that they would find it to their advantage to try this crop, if even for the seed alone; but there is a simple process by which they could turn the straw to account, if they will only take the trouble. After the seed is taken off, which can be most readily done by passing the flax through a thrashing mill like wheat or any other grain, let the straw be taken to the meadow and spread on the grass, say ten or twelve days, and it will be prepared for putting through a simple brake, which will make it fit for the upholsterer, and will bring from \$25 to \$30 per ton. There is little labour required, and it will be found to pay much better than making manure of it, like other straw. Several samples have been brought to my office measuring from 3½ to 4 feet long; but in all cases I find the farmers are too late in getting it in the ground. A small piece of my own growing this year, which I sowed on the first of April, on a piece of light sandy ground, is now over 3½ feet long, well covered with seed, and I have no doubt it will turn out from 2½ to 3 tons to the acre. I must again remind the portion of the farming community who have not yet given this new crop their attention, that while we boast of ten or fifteen thousand acres, we must turn out more in the New Dominion another year; this breadth is only about a sixth of one of our finest townships, and therefore there is plenty of room to make the trial.

It will be seen by the papers, a few days ago, that samples sent to the Paris Exhibition have gained a fair share of attention, this too in the midst of other fine flax-growing countries, such as Belgium, Finland and France herself; therefore we need not hesitate to go on and increase our number of acres.

JOHN A. DONALDSON.

Toronto, July 22, 1867.

Rotation of Crops.

To the Editor of THE CANADA FARMER :

Sir.—An article lately submitted to you on the above subject has, in a measure, had its desired effect in calling attention to a subject daily growing upon us. Our lands, by a course of exhaustive cropping, have become much deteriorated, and the question arises, "how shall we restore our farms to something like their primitive fruitful condition?" The great hope and anxiety of our pioneer fathers, in contending with the forest, was to start the plough. They well knew the hidden treasure under the old logs and stumps, and these once out of the way, nothing more was needed than to tickle the surface a little with the plough, and fields would smile with rich golden grain. When the new pioneer neighbour came to see his friend, and, in their meanderings over the farm from one promising field to another (he with big expectant hope in his breast that his own fields will soon present a similar token of wealth), is ready to exclaim, Ah! neighbour Jones, what wealth lies with the plough!"

But the plough once started, in their enthusiasm they entirely forget where and when to stop, and the chorus of the songs of their sons, as their successors, has ever been, plough! plough! plough!! The effect of this unvarying course has been eminently successful in the present day and generation, in the accumulation of debt and mortgage, and of almost driving some of our best cereals from the country.

The wheat crop was once the pride and glory of our country, but now where is its head? Bowed down, not with the shining over-stocked load as of yore, but in shame for the treatment we have given it. Rise, fellow-men, for the honour of our profession, and with the advent of our new Dominion, proclaim the restoration of its soil, and in a few years, at most, our country may be out-ruined by none, and envied by every foreigner who may chance to stroll across one of the fairest fields of North America. Now, I claim that the chief corner-stone of restoration is system, and without system, the restoration of our lands will be a snail's gait enterprise.

I accept Mr Smith's strictures on the plan I submitted, but would ask, is it advisable to have the hoed crop in the rotation where he places it? Would it not be far better to have it to follow the sod, as the hoed crop will then have the double advantage of being easily worked, and the soil soft and spongy, which is almost indispensable to the culture of the crop.

M. OLIVER COLE.

East Elgin, July 16th, 1867.

Wheat—When to Harvest.

A southern farmer once told the writer of this, that, in the previous year, he grew 300 acres of wheat, which, in June, had attained a huge growth, and appeared remarkably promising. The agricultural papers were then recommending to harvest early, while the grain was in the milky state. He followed their advice, and cut the whole 300 acres as soon as the juice of the kernel began to whiten. The grain shrank badly. He estimated his loss from too early harvesting, at \$5,000. The blunder, as estimated by the writer, and by the gentleman himself, who, by the way, appeared very candid, and was willing to take his full share of the blame, fairly belonged, about one-half to him, and the other half to the agricultural journals of the time. The latter had blown too strongly, and altogether too indiscriminately, on the benefits of early harvesting, and he had followed their advice to excess—had cut his wheat in a greener state than they had recommended—had misunderstood them, to an extent which he freely confessed was inexcusable.

The truth is, there are four conditions to be considered, or four periods to be noticed in the growth and maturing of the grain; 1st, the *ante-milk* period, while the juice is yet greenish; 2nd, the *milk* period, while it is white; 3rd, the *dough* period, while the interior of the kernel, if crushed between the thumb nails, has the complexion and about the consistency of unbaked bread; 4th, the *period of ripeness*, when grain has become too hard to be crushed between the thumb nails. The nick-of-time for cutting wheat is at the end of the milk period, while the whiteness of milk is turning to a brownish dough colour. Better earlier than later, but as near that time as circumstances permit.—*Farm and Fireside Journal.*

The Marsh Harvester.

This is the name of a new reaping machine, which appears to be very favorably estimated, and to be coming into extensive use in the Western States. Its chief peculiarity consists in the facility afforded for binding the grain, which, as fast as cut by the sickle, is carried forward by an endless apron to the binder, who rides on a portion of the machine, and is thus saved all the labor of walking, and much of the stooping. In ordinary crops, it is said, one binder can bind all the grain as fast as the machine cuts it; but in very heavy crops two would be required, and there is provision for accommodating two. The problem of constructing a machine that shall bind the grain as well as cut it has repeatedly been attempted, but hitherto with very imperfect success. This new invention seems to approach very near the desired object, and to combine many important advantages.

An interesting trial of this reaper, on a mixed crop of rye and timothy, recently took place near Bloomington, Illinois, and is thus referred to in the *Prairie Farmer*.—"One span of horses drew the machine with apparent ease and gave no sign of lagging, and we should judge would find no difficulty in doing so throughout the harvest. The rye was green and heavy, which, with the timothy, might be considered equal to cutting the heaviest grain.

Several persons who had never seen one of the machines, made trial of binding, and in each case without aid, and found no difficulty in keeping the machine clear of grain. They were unanimous in the opinion that one ordinary binder could work through the day, binding eight to ten acres of light grain like this; but in heavy grain two would be required.

A German by the name of Fraber had purchased one of these machines, upon the representation that two persons could bind the grain, and having two daughters who had been in the habit of assisting him on the farm, was present with them to see how it would work.

They had not seen the machine before, but on trial found no difficulty in either of them binding alone as fast as the team could cut it. Mr. F. has one hundred and twenty acres of wheat and oats, and the young ladies expressed themselves as confident that they could put up their father's harvest with comparative ease.

The machine runs without noise and jar, and unless you see it, you may not know that it is at work. This is accomplished by the very superior mode of attaching the sickle, and the simplicity of the gearing. The whole is a happy compensating arrangement of working parts. The machine cannot well be other than durable, for there is no strain on any part of it. In this respect it must challenge the admiration of the farmer.

But its great feature is in the saving of labor, and that labor that most severely taxes the farmer during the harvest. To the farmer's wife it is a boon of great value, for she will not have a small army of extra hands to feed during the heated season. One of the Misses Fraber remarked that she preferred binding on this machine to cooking for a large lot of harvest hands.

An awning of common sheeting over the machine, protects the driver and binder from the hot sun of the long harvest days. To relieve the feet from the hot stubble, and to shield the head from the burning sun of July and August, is worth something, to say the least.

The saving of the grain is a feature that should not be overlooked in this connection. This depends very much on the manner in which the common reaper is handled; but in this, the cut grain is all carried to the binder on an endless apron, and there is no liability to waste.

We learn that there were made for this harvest, eight hundred and twenty-five machines, and that next year a full supply will be ready for the harvest."

ECONOMY OF MOWING MACHINES.—A gentleman gives as his opinion that a good mowing machine will save a farmer, upon an average, one-eighth of his crop of grass, aside from the fact that "haying is done" much sooner, and thereby a great saving must be made. He says the average height of grass is about sixteen inches, and that a machine mows, upon an average, two inches closer than the scythe, thus saving two inches of grass over the whole surface. If a man cuts forty tons of hay with a mowing machine, he saves five tons of hay, as he would have got but thirty-five tons with the scythe. Calling hay worth, upon the average, \$8 per ton, there is a saving of \$40 a year in hay, to say nothing of the labour.—*Vermont Farmer.*

A chief reason why young men dislike farming is their father's worn-out fields. To sow clover bountifully is the best way to prevent our youth from tramping the streets of our cities looking for situations and pocket-books.

SAVING SEED PEAS.—Peas for seed should always be picked as soon as they attain full size, before the pods begin to turn. Put them away in the pod to dry. Peas dried in this manner will bring peas the next season from ten days to two weeks earlier than if allowed to ripen on the stalk, and the same rule applies to beans, corn, and almost all garden vegetables, as I have proved by actual experience.—*Cor. Rural American.*

SALT AS A MANURE.—James R. Todd, of Kilsyth, Co. Grey, writes as follows:—"I have seen the opinions of different men with regard to salt as a manure; not only did I see it discussed in the *CANADA FARMER*, but also in the *Rural New Yorker*. Last spring I thought I would try it, and bought six barrels, and applied one barrel to the acre, on three acres Genesee club spring wheat, at the same time I sowed half a barrel across five acres of wheat in another place. Now for the result. The three acres shot out five days before the same variety sown side by side on the same day, and the strip across the field I can see as plainly as if the one was wheat and the other oats. The reason I applied salt to the club wheat was this: I have been troubled with the straw breaking; and salt is highly recommended to stiffen the straw; whether it will or not I cannot say yet, but I can say that the wheat I salted keeps far ahead of the rest. However, by harvest I will be able to tell you if it keeps the straw bright and stiff, and if the wheat will ripen sooner."

CUTTING TIMBER.—If oak, hickory, or chestnut be felled in August, in the second running of the sap, and barked, quite a large tree will season perfectly, and even the twigs will remain sound for years; whereas that cut in winter and remaining until the next fall, (as thick as your wrist,) will be completely sap-rotten, and will be almost unfit for any purpose. The body of the oak split into rails will not last more than 10 or 12 years. Chestnut will last longer, but no comparison to that cut in August. Hickory cut in August is not subject to be worm-eaten, and lasts a long time for fencing. When I began farming in 1802, it was the practice to cut timber for post fencing in the winter. White oak posts and black oak rails, cut at that time, would not last more than 10 or 12 years. In 1808 I began cutting fence timber in August. Many of the oak rails cut that year are yet sound, as well as most of the chestnut. If the bark is not taken off this month, it will of itself peel off the 2nd or 3rd year, and leave the tree perfectly sound. The tops of the tree are also more valuable for fuel, than when cut in winter or spring. I advise young farmers to try the experiment, and if post fences do not last twice as long, I forfeit all my experience as worthless.—*Er.*

HOW TO SHOCK WHEAT.—No part of the harvest work, within the range of my observation, is so often unskillfully performed as shocking wheat. A ride around the country in harvest will attest the fact that a field of wheat well shocked is an exception, while fields poorly shocked are the rule; and yet it is easy to do this work well. During my novitiate as a farmer, I was complaining to an old and experienced farmer of the frequent falling down of wheat shocks, and of the strong inducement, consequently, to store wheat before it was well cured, for fear of rain. He replied that wheat shocks need not fall down, and told me how to construct them so that they would not, thus:—Set up six sheaves two and two, slightly leaning together, with their butts well thrust into the stubble; then on each side set up two more sheaves also well thrust down, making ten sheaves thus:—
 ••• None to be placed at the ends. Now embrace ••• the shock with your arms to draw the sheaves compactly together. For a cap, spread and break down the seed ends of two more sheaves, making twelve sheaves in all, placing the two horizontally across each other, spreading the butts as you place them, with the seed ends to the north-west and south-west, and the butts toward the north-east and south-east. This compass arrangement is important; for if the butts are in the direction of prevailing heavy winds they are liable to be blown off. This method of constructing a shock counts the sheaves for you, and it is always found compact and well balanced. If well built, it is, when finished, very much the shape, on top, of an umbrella, and is safe against all ordinary storms of rain or wind. I have myself built such for over thirty-five years.—*Peter Hathaway in Rural New Yorker.*

Stock Department.

The "Maple Shade" Flock of Cotswolds.

Our United States-neighbours have long overlooked the merits of the long woolled and mutton breeds of sheep, and have given the greasy little Merinoes a monopoly of their affections. Lately, however, a gratifying change of opinion has been observable, and here and there enterprising sheep-men have begun to patronize the Cotswolds, Leicesters and Downs. The foundation of a number of flocks has been laid and we expect in a very few years that Canadian flock-masters will have to mind what they are about, or they will find themselves outdone by their spirited neighbours, in the breeding of long-woolled sheep. Among those who deserve honourable mention in this connection is Mr. John D. Wing, "Maple Shade" farm, Washington, Dutchess Co., New York. This gentleman has got together a fine flock of Cotswolds, consisting of selected animals from the best flocks of thorough-bred sheep in England. They are strictly pure, without a cross, and every sheep has a reliable pedigree. Mr. Wing has neither spared expense nor trouble, his object being to form a flock of choice blood second to none in the world. Most of the sheep composing his flock were bred by Mr. Wm. Lane, of Broadfield, a name that stands among the highest on the list of breeders on the Cotswold Hills. Others of these choice animals were supplied by Messrs. Garne, of Aldsworth, Hewer, of North Leach, and Fletcher, of Andoversford, all of whom are known as careful and successful breeders. Along with his imported sheep, Mr. Wing brought over an experienced Cotswold shepherd, who has charge of the flock.

The sheep from this flock have never been shown that they have not carried off the highest honours, and the prize ram, "Golden Fleece," (whose picture is seen above) was shown at the New York State Fair at Saratoga last year, where he won the first prize, also at Dutchess County Fair with the same result, and at the Auburn Fair of the New York State Sheep Breeders' and Wool Growers' Association in May, 1867, when after taking the first prize in his class, he won the sweepstakes prize. He sheared on this last occasion twenty pounds of wool. He was bred by Mr. Wm. Lane, sired by "Cotswold King" (the highest priced Cotswold sheep ever sold—viz. \$1200 gold), and his dam was winner of the prize of the Royal Agricultural Society of England. He is the stock ram, being used in the flock at present, and his lambs are very promising.

Mr. Wing's farm, "Maple Shade," is at Washington, Dutchess Co., New York, about six miles from Dover Plains on Harlem railroad, and sixteen miles from Poughkeepsie on the Hudson River railroad.

More about Fast Trotters.

To the Editor of THE CANADA FARMER:

SIR.—As farmers have by this time selected the stud horses they intend patronizing during the present season, were it not that the CANADA FARMER will exert an influence for years to come, I should drop the question of trotting horses as stallions. Under the circumstances, it is perhaps better that it should

be more thoroughly discussed, so that if there are really 'two sides both may be seen.

It seems to me "X" has changed his opinion to some extent since his letter in the CANADA FARMER of May 15th. At that time he did not seem to think that trotting qualities, either *fine* or *fast*, were desirable in an agricultural stallion. He now agrees with me that it is very desirable that a horse should trot square and lofty; but he must not be able to go fast, for that would be an evidence that something was wrong. I feel highly encouraged to go on writing, and have no doubt but that I shall be able to convince even "X" that *fast* trotting is also a good quality. It should be remembered that the question at issue is not whether the English or Canadian taste is the proper one to cultivate; but taking those tastes into consideration, whether it is better to select a fast trotter to breed from or not. "X" admits that Canadian farmers and gentlemen have a penchant for fast trotters. This is really admitting it is desirable to breed them; for who does not want to breed

degree of appearing disproportionate. The chest is narrow, and the fore-quarters light, a point likewise characteristic of speed. The neck is straight, rather than gracefully arched, and the pasterns very long, and generally oblique." Lawrence, speaking of the trotting of the English thorough-bred, says: "They soon become weary, and their legs and feet are too delicate for the rude hammering of the speedy trot."

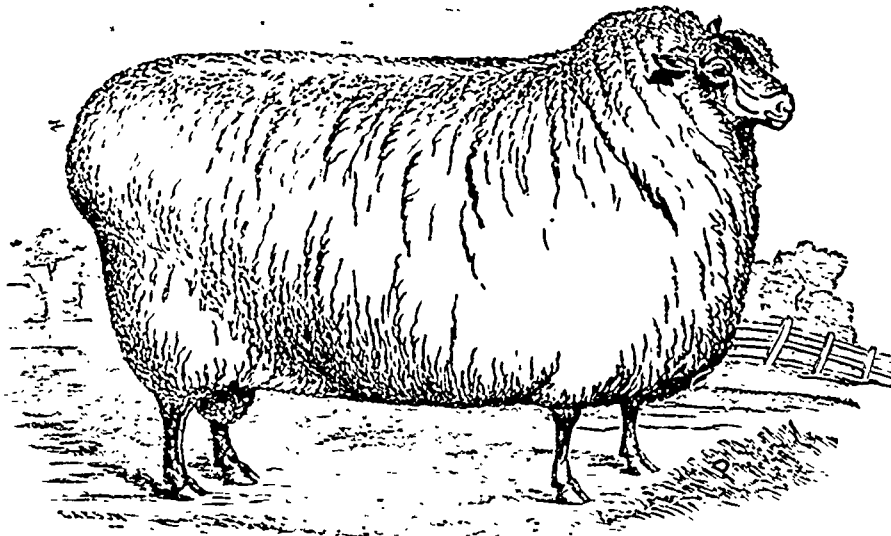
The amount of it is, we require different shaped animals for the distinct purposes of trotting and running. The hind-quarter must be powerful, but the fore-quarter must be equally so. The very fine and supple legs of the race horse will not stand the severer test of trotting. He must be able to bring his hind legs well forward, not both together, as in running, but one at a time. The shoulder must be oblique, or he cannot get his fore legs forward. I frankly admit my ignorance with regard to the Frisian horse. I never heard of him till I read the letter of "X" in your last issue. If he really does possess those defects which have led "X" to believe that all trotting horses must be deficient in good qualities, and is still among the fastest trotters of the world, he differs from all the horses I ever had the good fortune to look upon.

What has "X" to say to the Morgan and French? I referred to them because almost all Canadians have seen some of them. There is another breed of horses celebrated for their trotting qualities; the Norfolk phenomenon, originating seventy or eighty years ago in the county of Norfolk, England. An imported horse of this breed is now travelling near London, Ontario. The general model of this breed resembles very much the American Morgan horse. I would like "X" to point out the deficiencies in those breeds which I have named. Will he be kind enough to tell me what bad qualities they possess which cause them to trot fast? W. C. Spooner says: "We obtain from the thorough bred horse the small head, lengthy quarters, powerful thighs, and extended stride; but it is from the Norfolk trotter, the old English hunter or hack, descendants to some extent of the ancient Spanish horse, that we derive the oblique shoulders, elevated withers, good forehead, safe walk, and fast trot, accompanied by a larger and wider frame, greater bone, and more powerful digestive organs, than the blood horse generally possesses."

A writer well qualified to judge has said of the Morgan horses: "The distinguishing characteristics are neatness and compactness of form, hardness of constitution, with general soundness of limb, strong digestive organs, enabling them to live on a little food, good action, making them fast travellers particularly as all-day horses." Y. Z.

Mr. John Hayden, a N. Y. wool manufacturer, says old wool takes color much better, works better, wastes less, and makes firmer cloth than new wool, and that if wool is two or three years old it is all the better.

Good Cows.—Mr. James Armstrong writes as follows to the St. Thomas Home Journal:—In my statement of the product of my cows for the month of May, I promised to give a statement of the month of June also. It is as follows:—I delivered in the month of June last—twenty-five week days—19,726 lbs. the milk of twenty-three cows, at Mr. York's Beaver Cheese Factory, which is 34 7-23 lbs. per day for each cow. Four of these cows have averaged 50 lbs. of milk per day each, and my best cow has given 324 lbs at a mess.



COTSWOLD RAM, "GOLDEN FLEECE."

horses that are saleable? However, I am perfectly willing that this discussion should take a wider range. Let us look at "X's" beau ideal of a horse. It is not hard to tell to what breed his favourite belongs: it is a Cleveland bay. The horse which the Yorkshire breeder endeavours to produce is one of lofty appearance, with a good coat, a color which attracts the eye, and showy action, with no speed. The use to which he is applied requires no powers of endurance; he is wanted more for the purpose of making a display than anything else; a few hours exercise in Hyde Park is all that he is asked to perform. One of this breed was imported and bred in the township of Whitby some years ago. Crossed with our mares he produced long-legged, soft, worthless animals, not at all capable of enduring the hardships of an agricultural horse in Canada.

"X" tells us that, because the English race horse, which has been bred for centuries with one sole object in view, and that object fast galloping, does not trot fast; and because the Frisian horse does, and the former is a good, and the latter a bad specimen, it follows that all good trotters are bad horses, and vice versa. Let us consider the English thorough-bred for a moment. Eclipse's model has been declared by many competent judges to be the nearest to perfection for running of any yet produced. We are told he was taller at the rump than at the shoulder or withers. His hind-quarters were so much stronger in proportion than his fore, that when he walked or trotted he had a kind of wavering or side motion. Professor Low says: "The form of the racer corresponds to the conditions required. The length and depth of the hind-quarters—a point essential to the power of making long strides, are extended to the

The Dairy.

Butter Factories.

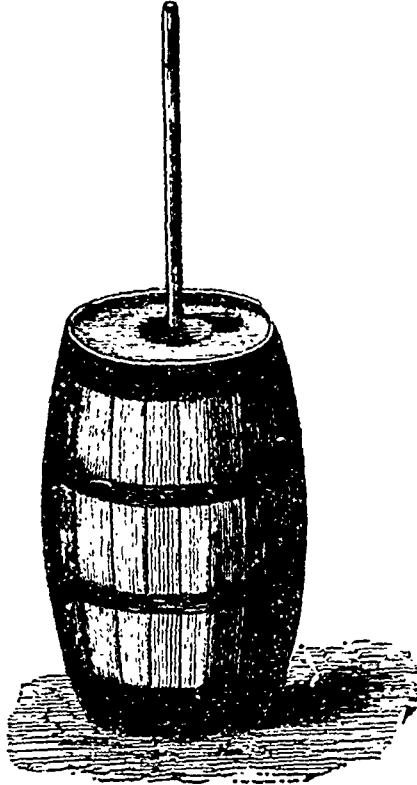
CHEESE-MAKING at factories had not been very long in operation before the idea suggested itself to the minds of American dairymen that butter might be advantageously manufactured on the same system. The thing was put to a practical test, and proved a complete success. For several years butter factories have been as characteristic of Orange county, New York, as cheese factories have of Oneida and Herkimer counties. We are not aware what number of butter factories are in operation; but the system long since passed out of the region of experiment, and has become one of the established industries of the American people. Scarcely anything, however, is known in this country of the matter, and we question very much if the great bulk of the readers of the CANADA FARMER ever heard or read of butter factories until our mention of them in our last issue. Yet they are capable of being as advantageously introduced into certain portions of Canada as they have been into Orange county, New York.

Though usually called butter factories, they are in reality butter and cheese factories combined, cheese being made out of the milk which has been skimmed for the purpose of butter making. It is in this double productiveness that their profitableness consists. Fourteen quarts of milk, wine measure, are estimated to yield one pound of butter and two of skim cheese. This description of cheese, though, of course, inferior in quality and value to that made from pure milk, is nevertheless a good and marketable article. It suits the palate of many people who find pure milk cheese too rich to agree with them, and like the cheaper kinds of tea and other articles, will always command a sale among the less wealthy classes. Moreover, it can be safely shipped to tropical countries. Large quantities of it have been sent to China in exchange for tea. The demand for shipments of it to warm climates has been such that it has, in some instances, brought nearly, if not quite, as good a price as whole milk factory cheese. In view of the trade now opening up between Canada and several tropical countries, would it not be well that we should produce a description of cheese which can be shipped thither and form a profitable item in our export trade?

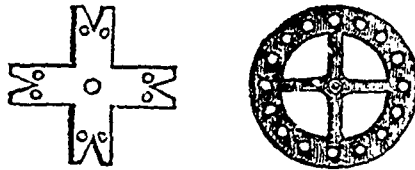
We shall briefly describe the processes in vogue at the establishments in question. They are very simple, for it takes less skill and science to make butter than cheese, and skim cheese-making is not so nice and critical an operation as whole milk cheese-making. Very similar buildings are used for the butter factory business to those employed for the cheese factory business. A spring room, a churn room, and a butter cellar must be added, but these need not be large and expensive structures. A cheese factory already in operation may easily be converted into an establishment for making both butter and cheese, by adding the conveniences just named. The spring room is provided with tanks or vats for holding water. These vats should be fed by a spring, the temperature of which is not below forty-eight nor above fifty-six degrees. A convenient size for the vats is six feet wide by from twelve to twenty-four feet in length. They should have a depth of about eighteen inches of water, and there should be a constant flow through them, to secure uniformity of temperature. Into these vats the milk is set in pails that look very like sections of stove-pipe, being eight inches in diameter and twenty inches long, each holding about fifteen quarts of milk.

We give herewith a rep-

resentation of one of these pails. The milk is put into them so as to stand even with or a little below the surface of the water outside. It will be seen that, in the size and shape of their milk pails, the Orange county dairymen do not conform to modern ideas as to shallow and broad milk pans being the best for cream to rise in. Actual experiment has convinced them that the pail they have adopted is the best for their purpose. They not only get as much cream in such shaped vessels as in broad and



shallow ones, but the cream is of better quality, from the fact that only a small surface is exposed to the air, consequently the top does not get dry so as to sicken the butter and injure its quality. It is found also of great advantage to have the cream rise in a moist



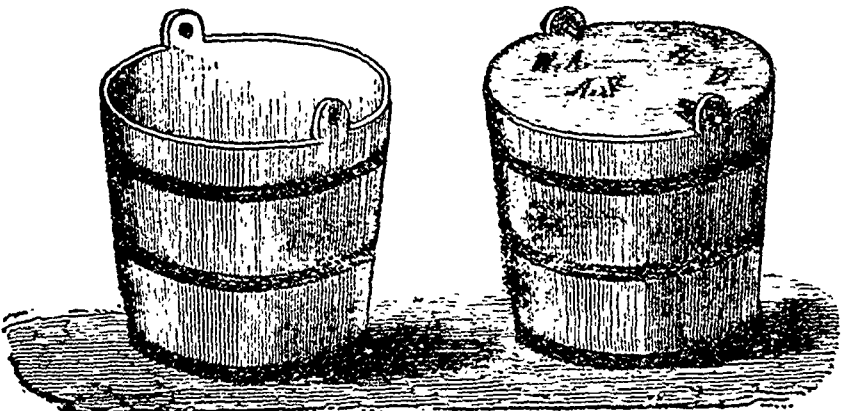
atmosphere like that created by the stream which feeds the spring room in which the vats are located. The pails being set closely together, an ordinary spring room will hold 2,040 quarts of milk. The spring should have flow enough to divest the milk of its animal heat in an hour or less. The milk is left standing in the pails from twenty-four to thirty-six hours, by which time all or nearly all the cream will have risen to the surface. Of course the quality of the cheese made from skimmed milk can be improved

by lessening the time given the cream to rise. After standing the prescribed time, the pails are lifted out of the vats, and the cream is dipped off with a funnel-shaped cup, having a long, upright handle. The milk then goes to the cheese vats for making cheese, and the cream is either churned at once or placed in the pails, and returned to the spring room, there to be kept in the water until it sours. Sour cream makes the most butter, and sweet cream the best. When the cream is churned sweet, the buttermilk is utilized by being put into the vats with the skim milk for making cheese. The churning is done by horsepower, several churns (usually four) being driven at once. The churns used are the common barrel and a half dash churns, such as shown in the accompanying illustrations. About fifty quarts of cream are put into each churn, and each then receives a pail of cold spring water to bring the entire contents to a temperature of from sixty-three to sixty-four degrees. Ice is sometimes used in very warm weather, but it is considered best to do without it if possible, as it deteriorates the quality of the butter, making it white and soft. From forty-five minutes to an hour are required for the churning process. When the butter has come, it is taken from the churns and thoroughly worked in spring water, after which it is salted at the rate of one pound and two ounces of salt to twenty-two pounds of butter. A little more salt is put in the last working in the winter season.

After having been properly salted and worked, the butter stands until evening, when it is again worked, and then packed in 60-lb. pails for shipment to New York. The annexed cut will show the description of pail used. It can easily be headed in a temporary yet safe and tight manner, and when emptied returned to be again filled. When butter is packed in firkins, only such as have been made of white oak are used. They must be well made, and so tight as not to admit of any leakage. Before using they are thoroughly soaked and cleansed with hot and cold water. When filled with butter, they are headed up, and strong brine is poured in to fill all the intervening spaces, and exclude the air as much as possible.

It is found that factory butter-making, like factory cheese-making, secures the uniform production of a superior article, the reputation of which is high in the market, so that it always fetches the highest price. The butter factories in October, 1865, were offered 70 cents per pound for all they could make, and it is said that the butter thus made has a peculiarly rich, delicious flavour, so as quite to stand alone in the market.

In addition to the butter, as already remarked, cheese is made at these establishments. The process of manufacture is much the same as that which is practised at cheese factories. The milk is set at 82 degrees, and the heat increased to 96 or 98 degrees. Three pounds of salt are added to 100 of curd. Sixteen inch hoops are used, and the cheese are made about four inches in thickness. The cost of the double manufacture is but little more than that of making cheese by itself. Of course the profitableness of the system depends on the price of butter. It may be



assumed that an equal weight of product will be obtained on either plan, but when a third of that product is in butter, and butter brings, as it usually does, a considerably higher price than cheese, it is manifest that the combined plan is the one that will pay the best. We subjoin a statement of the receipts and expenditures of the Wallkill Factory for the year 1865. The quantity of milk received from April 1st to December 1st was 627 1/4 quarts of which 27,308 were sold at a little above seven cents per quart, leaving 599,866 quarts to be made up into butter and cheese. The product was as follows: 31,630 pounds butter, 81,774 pounds skim cheese, 5,908 pounds whole milk cheese, 2,261 quarts of cream, sold at 19 6-10 cents per quart, and 1,561 quarts skim milk, at 15-8 cents per quart. The net cash receipts after deducting transportation and commissions, were as follows:

For pure milk sold	\$1,926 22
Skim milk sold	24 02
Butter sold	13,344 21
Skim cheese sold	11,659 08
Whole milk cheese sold	1 065 44
2,261 qts. cream sold	413 33
Hogs fed on whey	446 24
Buttermilk and sundries	207 49
	\$29,116 03

The expense account was as follows:

For labour	\$1,476 40
Fuel	79 96
Cheese boxes	653 17
Twenty sacks salt	89 25
Rennets, bandage, &c	183 55
Carting cheese	273 10
Hogs	179 90
	\$3,235 33

This gives an aggregate net receipt of \$25,880.70 to be divided among the parties who furnished the milk. According to the above return, the butter averaged 1 1/2 cents per pound the skim cheese 14 1/2 cents, and the whole milk cheese 18 cents per pound while the average amount received on the whole quantity of milk was 1 1/10 cents per quart. The expenses of the factory were a little over half a cent per quart. On a careful comparison of the profits of the butter and skim cheese factories, with those of the factories where cheese only is made, it has been found, that on every fourteen pounds of milk there is a balance of ten cents in favour of the butter factories. This difference might, however, be either lessened or augmented by variations in the market price of butter and cheese. On the whole however there can be no doubt that the joint manufacture of butter and cheese is more profitable than the manufacture of cheese by itself.

We cannot conclude these notices of the dairy operations, carried on by our New York neighbours without gratefully acknowledging our great indebtedness to Mr. X. A. Willard, of Little Falls, N. Y. for polite attentions, valuable documents, and much useful information in regard to a business, in the promotion and development of which he, more perhaps than any other living man, has been most assiduously and perseveringly engaged. Our visit and ride with him over the hills of Herkimer are elsewhere described by his own facile pen, in an extract we have culled from the *Utica Weekly Herald*, an ably conducted journal of which he is agricultural editor. Mr. Willard has already written and published largely on the subject of dairying, but we are glad to know that he is at work on a volume which is intended to comprehend all the information extant in regard to this important branch of rural economy. Such a publication will be of priceless value to all engaged in dairying, whether on a large or small scale, and, we doubt not, will find a ready and extensive sale throughout both the United States and the Dominion of Canada.

A Milk and Water Suit.

We learn from our English exchanges that an interesting case was recently tried at the Manchester County Court.

A provision dealer named Thomas Rogers claimed to recover £50 damages from Edward Broomhead, farmer, of Medlock Vale Farm, near Ashton-under-Lyne. The particulars of claim stated that in January the defendant sold to the plaintiff a milk round, good-will, and shop and appurtenances in Long Millgate, Manchester, for £90, and agreed to supply him with good new milk at 2d. per dozen quarts below the market price, but had failed so to do, and had supplied instead thereof a compound of milk and water, or other fluid or substance, whereby the plaintiff had lost the price paid by him to the defendant, together with the profits which he ought to have derived from the business, and had otherwise been injured in his business and reputation. There were also two counts for misrepresentation. Mr. Higgin, for the plaintiff, said that soon after his client took the business complaints were made by his customers of the quality of the milk. At length one of the customers, named Travis, being possessed of an instrument called a lactometer, tested a quantity of the milk. The process was to get the milk to a temperature of sixty degrees, and to place in it this instrument, the index of which showed the proportion of water in the liquid. In the instance in question the lactometer showed that there were three quarts of water in a dozen quarts of the liquid sold as milk. On the plaintiff remonstrating, the defendant's wife said her husband would not supply milk without water to the plaintiff or any one else. The plaintiff confirmed his counsel's statement, and added that, though at first he sold a daily average of thirty-six dozen quarts, at the end of April he sold not more than fourteen dozen daily, and he finally sold for £20 the business for which he had given £90. The wholesale profit was about 1 1/2d. a quart, and the retail profit 2s. per dozen quarts. Cross-examined by Mr. Leresche: When the milk came from defendant he (the plaintiff) added water in the proportion of one quart to the dozen; but he did so only to make up the measure of thirteen quarts to the dozen, which one of his customers required. He also got milk from another farmer, and in this he (witness) put three quarts of water to the dozen. He did not add any water to the milk supplied to Travis. Joseph Travis, milk-seller, Cross-street, Swan-street, proved the testing of the defendant's milk. He at first denied that he had heard of annatto; but afterwards inadvertently remarked that a druggist had told him that it was a colouring matter, and on being questioned he said he had used it to give milk a rich cast. The defendant, in answer to the judge, said he did not know what was the usual proportion of water in milk sold by farmers to milk dealers. Sometimes they rinsed their cans, and then put a few quarts of water in them. The Judge: What did you mean by agreeing to supply good new milk? Defendant: Milk to suit customers. The judge: The plaintiff was a wholesale customer of yours, and you had no right to put in all the water, you ought, you know, to have given him a chance. Defendant: He should have suited himself in that. I didn't tell him to put in any water. The judge: Then you put in the same water for your wholesale customers as for your retail customers, three quarts to the dozen? Defendant replied that he did not put in that quantity of water, but he would not say that in his milk there were not two quarts of water to the dozen. The defendant's son said that when he had delivered the milk he had seen the plaintiff take out a dozen cansful, and then put in their place a dozen quarts of water. The plaintiff's late housekeeper gave similar evidence. Of the defendant's milk, she added, the plaintiff used on every occasion to take four dozen quarts, put it in a churn, and then add fifteen or sixteen quarts of water, a little salt, and some annatto to colour it. Witness used to keep a milk-shop, and when the milk was pale she used to add some annatto to it. Mr. Leresche: "That's my case, your honor." The judge: "And a very nice case it is." In giving judgment, the judge said he had no doubt the plaintiff's real complaint was that the defendant had put more water in his milk than he ought to have done, and that thereby the plaintiff had not had a fair chance of making a further addition. As to the proportion, from the experience he had had, he did not believe

that four quarts of water to the dozen was sufficient to prevent customers buying the milk. It was simply impossible to get at the truth in the present case. If the plaintiff had come into court with clean hands, he (the judge) would have awarded him the £50 he claimed; but this was not the case, for, in his opinion, he put in the milk as much water as the defendant put in it. By the contract "good new milk" was to be supplied by the defendant, and he should consider the words to mean pure milk. Mr. Leresche said the words only meant the milk of commerce which, he contended, the defendant had supplied. The judge said he should not take it that there was a recognized practice of supplying adulterated milk. The result of his judgment would be that both parties would in effect be fined. The plaintiff had already lost considerably, as he only got £20 for what cost him £90; and the defendant would be a loser of £20, for which sum he now gave the plaintiff a verdict. Each must pay his own costs. He (the judge) wished he had the power to fine the plaintiff and defendant £100 each.

A Ride over the Hills of Herkimer.

We had a pleasant visit last week from Mr. W. F. Clarke, editor of the *CANADA FARMER*. Mr. C. is making a brief tour in the States, and stopped over to take a look at some of our noted dairies. We spent a most agreeable day driving over the hills of Fairfield, Salisbury, Herkimer and Little Falls, the great dairy heart of Herkimer, showing some of our model factories and our best dairy lands.

Mr. Clarke tells us there is great interest manifested in Canada in regard to dairying, and that a wide breadth of the country is adapted to the business. The season in Canada is more backward than in Herkimer.

The *CANADA FARMER* is a very ably conducted journal, and one which we always read with pleasure and profit. It ought to have a large circulation on this side.

We should advise the "Path-masters" on some of the cross-roads in Fairfield "to mend their ways." Such a series of villainous ruts and holes passed over are quite out of character for Fairfield. We got over them, it is true, without breaking our necks, but we should dislike making the attempt again, unless our life and limbs were insured for a heavy amount.

At the Eatonsville factory we found a nice lot of cheese, and the factory running nearly up to its full capacity. The milk from 900 cows is now being delivered, and no more for the present will be taken. Chas. Eaton is the manufacturer here, and gets 75 cents per hundred pounds for making and care of cheese. The Eatonsville factory is a very substantial, well-built factory, costing about \$10,000. It is in the centre of some of the best dairy lands in the country.

At the Fairfield Association factory, we noticed some improvements which we think should be generally adopted, when practicable. The presses and sinks are about two feet lower than the platform upon which the vats stand. This allows drawing the whey and curds through a shute at the end of the vat into the sink, thus avoiding the labor of dipping, a very convenient arrangement. The pipes for heating are placed under the centre of the vats, instead of at the end, and are thus out of the way in working, which is a great improvement on the old plan.

The manufacturing department of this factory, since its erection two years ago, has been under the management of Mrs. Smith, and the cheese turned out has acquired an excellent reputation in the market, both at home and abroad. The factory has a good location, and is surrounded by the choice dairy lands of Fairfield.—*Utica Weekly Herald*.

BEST BREED FOR DAIRY COWS.—A writer in the *American Agriculturist* expresses his opinion, founded on considerable and careful experience, that the very best breed of cattle for dairy purposes, and one adapted for this climate, is a cross between the Ayrshire and the Alderney. He considers the pure Alderney the very best milk breed, but too delicate for this climate, a cross with the Ayrshire gives the requisite hardiness of constitution, and improves the milk-producing qualities of the latter.

QUALITIES OF CATTLE.—Ayrshires for cheese, Devons for butter, and Alderneys for cream. These, on the best native stock will improve. The improved Short-horns combine these qualities to a large extent, and are, besides, superior for beef. When we say the Alderneys for cream, we mean the richest cream, not the most, as less milk is given by them than by the Devons, and less butter made from a cow. For the farmer who has but few cows, the improved Short-horns are the best, as they combine more or less the good qualities. Excellent for milk, they are still more so for beef.—*Colman's Rural World*.

Veterinary Department.

Successful Surgical Operation

BY A LATE PUPIL IN THE TORONTO VETERINARY SCHOOL.

We have much pleasure in drawing attention to the following account of the skillful and successful practice of a gentleman educated in the Toronto Veterinary School, as evidence of the high standard of the instruction furnished by this important institution, and the efficient services it is rendering the community by sending forth thoroughly qualified surgeons to take the place of ignorant and unskilful farriers. The account is furnished by the *Canadian Post*, published in Lindsay, and is as follows:—A few days ago Mr. L. M. Cather, Veterinary Surgeon of this town, successfully performed a very critical operation upon the left orbit of a mare belonging to Mr. John Dovey, of Downeyville. The mare, which is an aged one, lost, it appears, one of her eyes when two years old, and immediately thereafter an ugly-looking fungous tumour began to show itself within the orbit, and gradually increased, notwithstanding every effort by various horse farriers to arrest its progress and effect its removal by means of caustics and such like applications, till when brought to Mr. Cather it had attained an enormous size. Mr. Cather at once determined on extirpation by the knife, as affording the only reasonable prospect of cure. The operation was a delicate and hazardous one, but the owner of the mare having consented to it, Mr. Cather set to work and successively dissected away the unseemly mass, which filled the entire cavity and involved the upper and lower eye-lids, as well as the orbital extremity of the optic nerve. For a day or two after the operation threatened inflammation of the brain had to be combated, but under the use of appropriate remedies all danger on that score speedily vanished, and the animal's condition and prospects are now most favourable.

Severe Sprain in a Horse.

To the Editor of THE CANADA FARMER.

SIR,—Permit me, for my information, and that of the numerous farmers who annually send their teams to lumbering shanties, to make the following enquiry:

Last March I had a valuable horse in a saw-log shanty, who, when starting his load, sprained himself in the back or hip; however, with difficulty, he was got to the stable, where, as he was unable to rise, I had him slung up. When on his feet he could stand, but whenever attempting to place any weight upon the injured leg (the off hind one), he so badly knuckled on the fetlock that in many instances he has fallen in the effort. Although his appetite was good he lost flesh rapidly, particularly about the hip affected, so much so that little or none remained thereon. The hip is now, I fancy, slowly filling in, and he rises without assistance, but when he walks he moves sideways, and his hind legs seem to twist in every possible direction; he is recovering his lost flesh, and is in every other respect convalescent. When the accident happened I bled him freely, and so soon as I could procure the material blistered him all over the upper portion of the hip up to the spine. This I repeated frequently, and gave him some laxative medicine, keeping him upon boiled barley diet chiefly. What I want to know is, whether the tendons of the hip, or the back, or both, have been injured? Has my treatment so far, been correct? Or what should I have done, and what should I now do to effect a cure, if cured perfectly he ever can be? Should exercise be given (he is at pasture during the day), or would light drawing be detrimental to recovery?

More horses have been hurt during the past winter than any remembered previous one, and a knowledge of the proper treatment in such cases will confer a very general benefit.

Hopedfield, July 15th, 1867.

H. Y. R.

ANS.—Judging from your description of the above case, we are of opinion that the muscles in the region of the haunch have been severely sprained, and also

the ligaments of the hip joint injured. Muscles, after being sprained, generally waste (atrophy) a great deal, and even supposing lameness ceases, it takes a long time before the muscular fibres are reproduced. Regarding the treatment of this case, we think you did right in placing the animal in slings, and also in giving a dose of purgative medicine, and allowing a laxative diet; but we are of opinion you committed a mistake in immediately applying a blister over the injured part. The poor animal was suffering quite enough pain without the irritation produced by a large blister. The treatment should have been more of a soothing nature, such as the application of hot water, warm clothes, &c., and rubbing the parts with some anodyne liniment. This soothing treatment should have been persevered in until the acute inflammatory action had abated, and then stimulants and blisters would have been attended with more satisfactory results. We would now recommend a loose box for the horse, in preference to running him out to pasture; he should have a liberal allowance of nutritious food, and the region of the hip might be blistered with the common cantharidine blistering ointment.

BOOTS IN HORSES.—Col. J. Hamilton writes from Raleigh, N. C., stating that he has a receipt from Dr. Geo. of Florida, which he had not tested, but would do so on necessity showing itself. He says:

"You are aware that it is hard sometimes to distinguish between an attack of the bots and one of the colic; the following remedy, however, is equally efficient for either. The reason that a bot can resist the action of the agents administered is his power of drawing his head into the walls of the stomach by his tentacles. But he cannot resist chloroform. A tablespoonful of chloroform, screened by a couple of spoonfuls of any good mucilage, will make him let go his hold on the stomach even after having bored nearly through."

TREATMENT OF FLESH WOUNDS.—"E.B." writes from Arthur as follows:—"A colt of mine was kicked by one of my working horses, and received an angular wound on the fleshy part of the thigh. The skin was peeled off at one side of the wound. I immediately stitched the cut, and put some tar on it to keep the flies away. Would you be so kind as to give the proper mode of treatment in your next issue of the CANADA FARMER?"

ANS.—As a general rule the proper method in such cases is to bring the parts together, and allow nature to heal the wound with as little interference from irritating applications as possible. The dirt or extraneous matters should be removed with tepid water, and the parts kept clean. Where there is much inflammation and swelling, relief will be afforded by bathing and fomenting occasionally with warm water. We would recommend our correspondent to wash off all the tar, and to apply daily with a feather a little tincture of benzoin, repeating the use of tepid water before each application of the tincture.

HYDATIDS IN SHEEP'S HEAD.—A correspondent from Sarnia consults us under circumstances of perplexity as follows:—"Can you or any of your correspondents inform me of any way by which I can destroy the grub worm in sheep's heads. I have lost ten sheep in the past six weeks, and three more will likely die before the present week is out, all from the same malady. I opened the heads of two; in one of them I found three grubs, one about one inch long, the other two were much smaller; in the other sheep I found one grub about an inch and half long. I was recommended to put snuff up their noses, which I did, to try and make them sneeze the grub down, but to no effect. I was also recommended to hold the sheep over a thick smoke; that also failed, and I am now left without any remedy or resource; but hope, however, that some kind reader of the CANADA FARMER will be able to relieve me.

ADAM CLARK.

SARNIA, (Box 135).

ANS.—In the treatment of hydatid in the brain of the sheep, producing what is known as sturdy or gid, the trochar and canula, instruments employed for tapping in dropsy, are used for its removal. The sheep should be firmly secured, and the head carefully examined, and generally a soft place can be felt in the bone immediately over the seat of the hydatid. A small piece of the skin should be dissected backwards, and a small trochar and canula inserted. When the trochar is withdrawing, the hydatid will in many instances escape; if, however, it does not come away a small syringe may be used to draw it to the surface. The wound should be dressed with cold water, and covered either with a piece of strong cloth or leather.

Poultry Yard.

Poultry at the Paris Exhibition.

A correspondent of the *Prairie Farmer* gives the following account of the poultry at the Paris Exhibition:

The show of poultry and farm-fowls generally, now taking place, is, however, the best by far that I have ever seen. The specimens, as I believe, with one exception, were from French poultry-yards. The superiority of French fowls is well known everywhere, and is the result of the love of this people for eggs and fowls for table use. A dinner without a fowl of some kind is considered incomplete, and at breakfast, eggs in some form, are considered almost indispensable. In the country, even more than in cities, the poultry yard is called upon to furnish its treasures for the table. The consequence is, as before stated, great perfection in the breeding and management of domestic poultry.

At the present exhibition there are in all 408 coops or cages of fowls. On an average these contain at least three specimens, giving a grand total of 1,224. Here we find all the best breeds known to the breeders of America, viz.: Braubmas, Dorkings, Black Spanish, Shanghai, Gold and Silver Spangled Hamburgs, Cochins Chinas, Dominiques, Malay, Bantams, etc., etc., all of the greatest purity and perfection, and of enormous size. The exhibition of geese is not large, but embraces some excellent specimens of the Toulouse, Danube, Egyptian, Bernacle, and Embden varieties.

The best turkeys are from an Irish exhibitor of Limerick. Generally these fowls are far inferior to those bred in the States.

The show of ducks is very good, embracing the Normandy, Aylesbury, Poland, Labrador, Siffers (Whistlers), and three or four inferior French breeds.

There is quite a variety of pigeons, but not better than are seen at many of the State fairs, at the East.

In rabbits, here almost always found in the poultry yard and an important animal in the Paris market, as well for its flesh as for its hair or fur, the exhibition surpasses any I have ever seen. Many of the fancy breeds, such as the Angora, bring fabulous prices, and are much sought after by amateur breeders in this line.

Besides the breeds of hens mentioned above, are four varieties, all of French origin so far as I can learn, that are not generally known to our breeders, that are certainly worthy of description and should be generally introduced into our country."

Of the breeds alluded to, La Fleche and Creve Cœur have been shown at our exhibitions and described in the CANADA FARMER, the Du Mans very closely resemble the first, but the Houdan has not hitherto, we believe, been introduced into Canada. The same writer thus speaks of this breed:—

"The Houdan breed of fowls is principally raised in the departments Seine et Oise, Eure and Eure-et-Loir. They supply a large part of the Paris demand, continually. The plumage is a unique mixture of black and white. The head is very large and strong, and surmounted by a tuft less dense than that of the Creve Cœur; "cravat and whiskers" prominent, crest and wattles small. The feet are of a grayish lead colour, and have five toes two above each other, projecting from the hind part of the leg, above the heel. Weight of mature pullet, five to six pounds. The cock has a mottled plumage of tan mixed with pale yellow, though generally black and white. The feathers of the tail and wings have a very marked green hue. Up to three months of age, the black predominates, after which time the white increases. The crest is divided into two parts, having the appearance of horns, like the Fleche breed. They are five-toed, like the females. Weight of mature cock, from six and a half to seven and a half pounds.

The flesh of the Houdan fowl is very fine and delicate. They take on fat readily, but the hens are smaller and less precocious than either of the first-described varieties."

The "American Poultry Club" was organized on the 10th inst. in New York City.

In Egypt, professional poulters will take a hundred eggs, and return therefor, at the end of three weeks, sixty chickens, keeping the remaining chicks and addled eggs for payment.

PREVENTING HENS SITTING.—The plan recommended by the Hon. Mrs. Arbuthnot for preventing hens sitting is endorsed by a correspondent of the *Journal of Horticulture*. It is as follows: Let the hen sit three or four days in the nest she chooses; then place her in a yard, or anywhere where there is no nest, and feed her well; in four or five days she may be returned to her own yard, and in about a fortnight will

lay again.



A Tour through Norfolk.

To the Editor of THE CANADA FARMER.

SIR, Having just completed a journey through the rich and beautiful county of Norfolk. I send you a few particulars of my proceedings that may possess some interest to many of your readers.

I delivered addresses before public meetings held in Simcoe; Brown's Hotel, on the boundaries of Woodhouse and Charlotteville, and Port Rowan, in Walsingham. The meeting intended for Townsend Centre did not take place, when we got there we found that no sufficient notice had been given, arising in part from differences which unfortunately exist in the Townsend society, which it is hoped the good feeling and sense of its members will speedily overcome. With this exception, I found the agricultural societies in the county working harmoniously and efficiently. The meetings were quite as well attended as could be expected at this busy season of the year, and I gathered thereat, and from personal intercourse with farmers at their houses, much interesting and useful information.

At Simcoe the conversation and discussion after the lecture referred more particularly to the best methods of managing light and heavy soils, the saving and applying farmyard manure, uses of plaster, and the cultivation of the grape. On the light lands of this county sheep and clover occupy a prominent part in the system of culture. The ploughing under clover has an enriching effect on such soils, preparing them for wheat or other crops; while the treading of sheep tends in some measure to consolidate them. Mr. Freeman, the intelligent and energetic secretary of the county society, drove me over a considerable area of country, and his farm in Windham, live stock, &c., indicate an improved system of management. Mr. Freeman, in addition to being a good farmer, is evidently a man of taste, as his orchard, flowers, and ornamental planting show. How greatly would the appearance of the country be improved, and its rural homes increased in comfort and attractiveness, if more attention were generally given to these matters. I observed in several parts of this county the planting of shade trees along the roadsides; an important move in the right direction.

I am greatly indebted to the attention and hospitality of Mr. J. B. Carpenter, who occupies a splendid farm of 400 acres but a short distance from the town of Simcoe. Most of this land is a loam, varying considerably in density and under the liberal treatment it receives is highly productive. Mr. Carpenter has a large flock of sheep, chiefly Leicesters and Cotswolds, in excellent condition. He has also a small number of Merinos which he considers on the whole to yield as good a profit, averaging a fleece, when washed, of six pounds weight. On this farm there is an extensive herd of cattle, some pure-bred Short-horns the remainder being principally Durham grades, which are good milkers. Mr. Carpenter ploughs under clover to a great extent, and uses a large amount of plaster. Indian corn is well adapted to these light soils and produces abundantly when properly manured and cultivated, and is largely fed to animals. I found that turnips, mangolds, carrots, &c., are not extensively cultivated in these soils. Indian corn being considered by many to be preferable, more certain in its results, and less expensive to raise and store away. Mr. Carpenter cultivates flax to a considerable extent, and thinks it pays; but I found the farmers generally look upon this crop with much suspicion, and its culture is not extending in this section. There is a scutching mill in Simcoe, and flax is well worth a trial; and should certainly receive it, before being condemned

In Woodhouse we had a very interesting meeting. Mr. Covernton, Mr. McCall, Dr. Walker, and others, gave some useful information on the culture of grapes, sorghum, tobacco and hops, to all of which crops the soils and climate of this district appear to be more or less suited. With regard to sorghum and tobacco, several expressed doubts whether they could be cultivated extensively with profit. I observed at this place a "self-guiding plough" at work on a dry and somewhat hard piece of land, the invention of Mr. Marr, a Woodhouse farmer. The implement has three wheels - two adjust the width of the furrow, and the other its depth. Requiring no manual aid at the handles, like ordinary ploughs, it can be managed by a boy, who sits on a seat and directs the horses. It certainly appeared to do its work uniformly and efficiently, and it will, probably, prove an acquisition to the implements of the farm. The apparatus can be fixed to any ordinary plough, and costs, I understand, about eight or ten dollars. Mr. Marr, who has the reputation of being an ingenious mechanic, as well as a good farmer, has patented the article both in Canada and the United States, and several are in use this summer in this section of country. I inspected a hop garden in this vicinity; the vines were growing fast, and quite clear of insects, with a prospect of a good crop. This ground yielded a net profit last year of more than two hundred dollars an acre. But hops at forty cents a pound cannot be relied on, and, there is, from what I hear, some reason to fear that people may be misled by the extraordinary high prices which this article has commanded during the last two or three years, in consequence of a failure in the crop, over large areas, both in Europe and America. There can be no doubt that many places along the shores of Lake Erie, both in point of soil and climate, are as admirably adapted to the growth of hops as of fruit.

Some very excellent remarks were made by several speakers at the Woodhouse meeting on the importance of farmers' sons receiving special instruction in scientific subjects relating to their calling, and among various methods mentioned, the CANADA FARMER was acknowledged to be doing good service in scientific as well as practical agriculture. Dr. Walker contended that there was no pursuit in life better calculated to awaken a desire for an acquaintance with the natural sciences, than that of agriculture, if the minds of young farmers be properly prepared. Mr. Freeman also spoke very earnestly on the importance of farmers cultivating a taste for neatness in and about their homesteads; making their fireplaces happy and attractive to their children, encouraging a love of knowledge and books, affording young people the means of rational recreation of a domestic nature, and thus inspiring them with a love of home and rural pursuits. These are among the means, it was contended, of mitigating, if not removing the increasing evil habit so greatly to be deprecated of youth leaving their homes and country pursuits for the towns and cities, to increase the competition, already too great, in the professions and trades that are so often found there.

Cheese factories are rapidly increasing in number in this county. In Townsend five are already in operation, and I either saw or heard of others in the different townships. Some of them, it is true, are but small, most of them commenced the present season, but they all have the capability of progressive growth. From what I could learn, there is sufficient ground for believing that a good article generally will be produced, and, although the high prices of last year will not probably be maintained, there is reason to hope that cheese of approved qualities will continue to command remunerating rates. Messrs. Squier and Wilson's factory, near the town of Simcoe, is capacious and most conveniently arranged, having what is of indispensable importance, a copious supply of pure spring water, coming into the building by its own gravity through iron pipes.

I found, to my great regret, the Hon. Oliver Blake on a sick bed, in a declining state of health, a circumstance which many of your readers will regret to learn, as Mr. Blake has been long and honorably known to the agricultural community of Canada, and has often rendered services as a judge of our Provincial Exhibitions.

Port Dover is pleasantly situated, and does a considerable but not an increasing trade. It has a large woollen factory, which turns out great quantities of cloth and other products. I am indebted to the kindness of Dr. Walker for his hospitality and driving me to Port Rowan, where we had a very good meeting,

embracing the consideration of subjects similar to those before mentioned. The soil here along the front is frequently heavy, requiring to be drained and thoroughly cultivated. In this way large crops may be produced without diminishing the fertility of the land.

I was pleased to observe, in several parts of this county, new and improved school-houses of a very substantial character, and would suggest the completing of such pretty designs by neat fences and ornamental planting. The capacious grammar school at Simcoe, with its pretty flower beds and shrubbery, is a model in these respects. The County Agricultural Society have very pretty and convenient grounds, consisting of twelve acres, situated close to the town, for exhibition purposes; and efforts promising success are being made for the erection of permanent buildings. Both at Port Dover and Port Rowan excellent grammar schools exist, in which instruction is given in such branches of science as cannot fail to benefit the children of farmers.

Yesterday being "Dominion day," was observed in these parts as a holiday, and thousands resorted to the elevated and picturesque pleasure grounds of Port Stanley. I took a ride through the neat and pretty township of Westminster to London, where I had some agricultural talk with my old friend Balkwill and others. Let us hope that Confederation, with the blessing of Providence, and the earnest efforts of all good British subjects, will impart to us unity, strength and prosperity. The country through which I have been perambulating the last fortnight is looking beautiful, and the crops generally are far more promising than from the late cold, wet spring, could have been anticipated a few weeks since. Wheat, of which a considerable amount is cultivated (chiefly winter) in this section, promises a fair crop; though I hear of the attack of the midge in some of the better varieties, such as the Soules, in a few places. Peas and spring grain generally, where sown comparatively early, on warmer and better soil, are doing well, but a considerable breadth of late heavy land in these crops is very unpromising, and unless rain comes soon, can produce but little. Indian corn in early and dry soils, well managed, is making rapid progress, but under other conditions the reverse is the case, as is likewise that of root crops. Grass is generally abundant, and pastures were never better. I have seen thousands of acres of clover and timothy that will, to all appearance, yield two tons of hay per acre. Mowing, which is done in these parts chiefly by machines, (mostly on the principle of Ball's Ohio), has commenced, and for many years the crop has not been, generally, so good. Fruit in many places also promises well. Peaches along this coast are extensively cultivated, and were formerly a more abundant and certain crop than of late years. They flowered most promisingly this spring, and no late frosts have succeeded to injure the blossoms; yet, appearances are anything but promising. The leaves of the trees in many places are withered, except at the tops, and the fruit small and falling off—the result in great measure of insect depredations.

I am now off Westward to complete the tour of Elgin—a fine, productive county; particulars of which I must leave for another issue.

GEO. BUCKLAND

St. THOMAS, July 2, 1867.

Fattening Hogs in Summer.

To the Editor of THE CANADA FARMER.

SIR,—A number of letters have appeared in your valuable paper, recommending feeding hogs in summer. The reasons urged were numerous, the most important being that hogs fattened so much faster and on so much less food than in winter, and that the price was invariably higher. Take, for example, the price of hogs in August, September and October, of any year, and compare it with the prices in November, December, January and February. To these encouraging facts in favour of summer feeding of hogs, let me add, for the information of farmers, that there will be this year an unusually early demand for fat hogs, not only for the Montreal market, but also for England. Stock of Bacon in Liverpool market on 30th June, 1866, was 36,000 boxes, with a financial panic raging. On 30th June, 1867, stock of bacon in Liverpool did not exceed 7,168 boxes; and while old bacon is worth but 42 shillings per cwt., new ice-cured is in great demand at 50 shillings and upwards.

J. T. DAVIES.

Hamilton, July 22, 1867

Draining Quicksand.

To the Editor of THE CANADA FARMER.

SIR,—Having seen a communication from a ditcher and underdrainer from the township of Missouri, asking for information respecting an effectual way to drain quicksands, I write to inform your correspondent and others that I have drained some quicksands in this neighbourhood on several farms, and have found no difficulty in doing the work thoroughly by the following process. I first dug a ditch for drain-tile, a little larger than is necessary, and then take tan-bark, where it can be procured, and put a layer, about one inch or so in thickness, all along the drain; then lay the tile (which should be round outside and with a round bore, so that they will lie any side down that they will fit best) placing them as tight together as possible with a pipe-tile layer, an instrument any blacksmith will make for fifty cents. I then place another layer of tan-bark on the top and sides, thus enclosing the tile in tan-bark, and then fill up the drain as usual. If tan-bark is not procurable, fine gravel will do as well or better. The pipes should have a gradual descent.

I don't think that stone drains can be made to answer in quicksand, and as they are more expensive than the tile drains, and neither so safe nor effectual, I don't see anything to recommend them, other than that if the land is drained, that alone is a great gain, let the drain be composed of what material it may.

The reasons which lead me to the conclusion that stone drains are more expensive may be summed up in a few words. In the first place, the drains have to be cut larger than for tile, thus causing more work, and consequently more expense. Secondly, a thousand pipe-tiles, two inches bore, a quantity calculated to lay upwards of sixty rods, can be procured at the tile-yard for six dollars, now, it will easily be seen that this length of stone drain could not be laid for double that amount, more particularly if prepared as recommended by the English draining Engineers, i.e., each stone being broken until it will go through a ring two inches in diameter, and then shovelled into the drain without regard to order, but just levelled along the bottom of the drain, and sods, straw or brush laid over them. I believe it would be better to haul stones into the road, and haul tile five or six miles, if a person wants a satisfactory job done. I believe the reason given by your correspondent for making his drains narrow, to give the pressure to keep the drains clear, is a correct one, that being the chief recommendation for drain-tile. The channel being straight and clear, there is no reason why well-baked tiles, well laid, should not last as long as grass runs.

A PRACTICAL DRAINER.

Appleby P.O., Halton, July 22, 1867.

Discoveries of Minerals.

To the Editor of THE CANADA FARMER.

SIR,—Discoveries of minerals, gold, silver, lead and coal, have been found in this vicinity, in minute quantities, it is true, but genuine. I have specimens of the above which I picked out of the rock myself. The coal seems to be of the purest quality, and burns much clearer than any we import for blacksmiths' use. There is an abundance of iron ore here, also of iron mica, carbonate of iron, &c., oxidulated iron, which is said to be very rich in metal, but it is comparatively valueless for want of coal. But it is quite possible that seams of coal of sufficient thickness to pay the working might be found at no great depth, if a capitalist should come along, who would be speculative enough to risk a few thousand dollars in looking for it. The coal above referred to is found in a seam about half an inch thick, in color it is a bright black, the fracture resembles that of hard pitch, and it affords no ground for the professional cry of bituminous shale. In this vicinity also are found copper pyrites, grey copper, atacamite, sulphuret of lead, &c., &c.

The above discoveries were made by the Rev. Doctor Shaffranck, minister of the Church of England, a German gentleman, and a naturalist of the first order, also honorary corresponding and associate member of twenty-seven European natural history societies.

ARNDPÖR, 1867.

NOTE BY ED. C. F. The first geologists have repeatedly given it as their opinion that no coal in workable quantities will ever be found in Canada—as we should have said till recently, meaning in the Provinces of Quebec and Ontario. The grounds for this belief are, that all the important coal fields of the world, except that of Virginia, which occurs much higher in the series, that is, in a more recent era, are found in a formation known as the carboniferous, which, in these Provinces, is represented only by a few small, isolated patches in Gaspe. A few thin seams of coal have been found in the formation immediately underlying this, but not in a sufficient quantity to repay the cost of working.

Ditching Machine Wanted.

GEO. A. MANCER, of Innisfil, writes:—"I noticed an article in the CANADA FARMER, on draining wet lands, a subject which is, I think, of great importance to the farmer in many ways. But as to the easiest and cheapest method of digging those drains I may be a little dark, and would like to see if I could not get it done by horse-power and machinery, or some other way. Please let me know, as well as others interested in the same way, through the CANADA FARMER, as soon as you can."

NOTE BY ED. C. F.—We are not aware of any ditching machine that is in actual operation in Canada. Henry Carter, of Aylmer, Co. Elgin, exhibited such an article at the last Provincial Exhibition, and obtained a prize, but we do not hear that it has been very fully tested in the field though competent judges affirm that if it were made sufficiently strong it promises to be highly practical and useful. The matter is one of considerable importance, and we trust will engage the inventive genius and mechanical skill of some practical machinist. In the absence of machinery, the work is to a certain extent effectually performed by a strong team attached to a good strong plough, throwing out a broad furrow, ten or twelve inches deep.

HORSE HAY-FORK.—"G. A. B. will find his question answered in the CANADA FARMER for June 15th."

The Canada Farmer.

TORONTO, CANADA, AUGUST 1, 1867.

The Provincial Exhibition for 1867.

The prize list for the approaching Exhibition of the Provincial Agricultural Association has been published for circulation. The Exhibition, by the system of rotation adopted since the first formation of the Association, takes place this year at Kingston, on the last week in September, commencing on the 23rd of the month, and lasting till Friday, the 27th, inclusive. The local committee in that city have been at work for about six weeks in putting their buildings in a state of proper repair, and have, we understand, made considerable progress already towards the completion of their work. The prize list in the agricultural department exhibits no marked changes from that of last year; but a prominent feature, though not a new one, adopted some two or three years ago, is that which permits the competition of exhibitors from all parts of the world. The development of Canadian agriculture and manufactures is observable in the gradual abolishing of restrictions on exhibitors, until now the world is invited to a contest of skill with our Canadian artisans and farmers in their different spheres. For the last two years, a gradual increase in the number of foreign exhibitors has been observable, and where these have proved the masters, their success has proved of benefit to our home producers in stimulating them to additional exertion, and has led to many valuable improvements—especially in some of our most promi-

nent manufactures. The amount of money offered for prizes remains at about the same figure. Some unimportant alterations have been made in the details of a few minor classes of the agricultural productions, but the only one of any prominence is that regarding the Prince of Wales' prize of \$60, which is this year given to the best pen of Cotswold sheep, consisting of one ram and five ewes, not over two shears. A change in the rule regarding the shearing of sheep has also been adopted—the Committee of the Association appointed to revise the prize list having adopted a resolution requiring sheep on exhibition to be shorn on or after the 25th April, instead of the 1st, as previously. In the poultry classes, some alterations from last year are observed—two or three sections having been dropped and others inserted. The Fruit-Growers' Association have offered some suggestions to the Board this year, which have been also embodied in the prize list. Competitors can now receive one premium in each section, instead of in each variety of fruit shown, as formerly. This will open a wider competition, especially among professionals, any one of whom was heretofore debarred from taking more than one prize for apples, grapes, or any other similar article. Now, however, each section is open to the competition of every exhibitor. The only noticeable alteration in the implement classes is, that a prize for a gang plow is introduced. In domestic wines, a different classification has also been adopted. Instead of the prizes being offered for the best specimens from the Catawaba, Isabella, or other grape, the list now standing for the best dozen of dry, sweet and sparkling wine, as the case may be. The change is thought by fruit growers to be advantageous, as the old classification does not allow that competition which will prove the most advantageous to fruit growers.

Regarding the change in the Arts and Manufactures department, the Journal of the Board makes the following summary:—

"Last year the Committee having charge of this department secured a great many improvements, both in the arrangement of prizes and the classification of goods. In the Fine Arts classes especially was this observable. Previously, no distinction was made between original works and copies, and the terms 'professional' and 'amateur,' as applied to artists, were indefinite, and generally so differently understood in their application, even by those who were without doubt professional artists, as to result in continual difficulties, and in numerous protests being made to the Association. The terms have now a published definite meaning, which cannot be misunderstood by exhibitors. This year further improvements have been made by striking out the entire list of prizes for 'professional copies,' and reducing the number of prizes for 'amateur originals.' The Committee have thus been enabled to add a few prizes to the remaining divisions, and also slightly to increase the several amounts offered to prizes to both professionals and amateurs.

"In the Prize List the Fine Arts have been separated into two classes. The number of entries, and the merits of the several productions, having progressed so rapidly during the past two or three years, have rendered this change necessary, so as to enable the Judges to complete their onerous duties either in proper time, or with satisfaction to themselves or the exhibitors. The first class now comprises all works in oil, statuary and photography; the second class, all water colours, pencils, crayons, sepias, pen-and-ink sketches, &c. This change, we have no doubt, will give satisfaction.

"It will be observed that the class heretofore termed 'Decorative and Useful Arts,' has been superseded by what is believed to be a more correct classification, its several sections having been distributed into classes with which they respectively the nearest assimilate. With so limited a number of classes, there will always be a difficulty in arranging many articles in the proper positions; the only alternative is to place them with things similar in materials or uses, or that will best come under the consideration of the same committee of judges. Thus, in the new class we have designs, materials and workmanship in building construction, and such other articles as might most fittingly be judged by a committee of architects and civil engineers, rather than by any of the other committees of judges. In the various departments of wood, iron, leather and woolen manufactures, these are severally placed with the

raw materials, furnishings and tools connected with the respective trades, so as to bring them under the same judges as the finished work. This arrangement, no doubt, tends to secure the most efficient judgment possible under the circumstances.

"The Ladies' Department, next to the Fine Arts, is always the most extensive in the Exhibition, and imposes a large amount of labour upon lady judges. This, it will be observed, is also now divided into two classes; the first embracing chiefly all kinds of needle-work, plain and fancy, and knitting, netting, tatting, etc. The second class includes all work in flowers, hair, moss, shells, cones, seeds, wax and worsted. This change will greatly facilitate the work of the judges."

The entries will require to be made at the following times:—

Horses, cattle, sheep, swine and poultry, must be entered on or before Saturday, August 17th, five weeks preceding the show.

Grain, field roots and other farm products, agricultural implements, machinery and manufactures generally, must be entered previous to or on Saturday, August 31st, three weeks preceding the show.

Horticultural products, ladies' work, the fine arts, etc, may be entered up to Saturday, September 14th, one clear week preceding the show.

The Season and Crops

SINCE our last issue, the weather has been, for a Canadian season, unusually sultry; rains have been partial and less abundant than was hoped. In many districts it is much needed. Notwithstanding these drawbacks, there are favourable accounts from most sections of the country in regard to the crops. The hay has been mostly well secured, and the yield has been generally very large. In some old meadows, it is said, the crop has been light: where that has been the case in a season so favourable for grass, we should say it was high time to plough up and enrich the soil. Winter wheat has, in some localities, suffered considerably from insects, whilst from other quarters the reports are more favourable. Spring grains have been chiefly affected by the drought, and the straw is mostly short. The drought, however, has not been, by any means, universal; in many parts the advent of timely and abundant rains has freshened up the fields wonderfully, and the prospects are encouraging. On the whole, the accounts from various parts of Canada are satisfactory.

In the United States the yield of grain, where it has been already harvested, has been unusually large, and the quality excellent; and in the more northern States, where they are but little earlier than ourselves, the promise of an abundant harvest is excellent. Corn is late, owing to the spring rains, and the yield will, perhaps, in consequence, be below the average. In some of the Western States, the crops have suffered severely from insect depredations; in Illinois and Iowa the "potato bug" is making frightful ravages, though in other sections this crop, as yet, promises well. In Kansas, Southern Nebraska, and Western Missouri, the grasshopper is making a clean sweep in many fields. In New England and the Eastern States generally, the crops are looking well, and much has been already safely gathered; wheat is especially excellent, and an unusual breadth has been sown. Of grass, the stand of course was good, and the largest crop for many years has now been tolerably well harvested.

The Practical Entomologist.

We were very sorry to perceive a decrease in the size of this valuable periodical, especially when we learnt that it was caused by the want of funds sufficient to meet the expenses of publication; and we regret even more to find, from the following paragraph, that the paper is to be discontinued at the close of the present volume:

"The subscribers to this journal will, no doubt, be surprised to receive this month a number of only eight pages; and many will join in with the regret of the publishers, that three more numbers will, for the present, close this work. The decrease in the size of the numbers, is caused by the want of sufficient funds, on the part of the Society, to issue more

pages, the expense of publishing the paper having already considerably exceeded the receipts.

"It has become very evident that the time has not yet arrived, when the agricultural community—to whom economic entomology is of the most importance—will sustain a work devoted exclusively to that subject.

"The devastations of injurious insects will, no doubt, continue to increase as long as the farmer, gardener and orchardist remain ignorant of the habits of these insects, and until they learn how to distinguish their friends from their enemies. They will, doubtless, awake from their apathy when they find that the 'Hessian Fly,' the 'Wheat Midge,' and the 'Ching-bug,' have destroyed the crops of grain,—the 'Potato-bug' the crop of potatoes,—the 'Curculio,' the 'Plum-gouger,' the 'Codling Moth,' the 'Bark-lice,' and the various kinds of 'Borers' the crop of fruit, and then, perhaps, they will—when too late—seek for practical knowledge how to destroy their insect-enemies and how to encourage and foster their insect-friends."

It does seem strange, that while due support appears to be given to newspapers on almost every conceivable subject, and devoted to the interests of every shade of politics, yet, that one should fail, whose sole object was to benefit the community at large, and particularly to teach the farmer and gardener how to protect their produce from the myriads of insects, that from time to time attack every green thing. Had the *Practical Entomologist* been filled with sentimental love-stories and sensational novelets, we should, no doubt, have been told that its circulation was numbered by thousands, and have met with it at every "news-depot," and had it thrust before us in every railway car; but since its object is to show the most numerous and important portion of the community how to save themselves and the country millions of dollars every year, and hence to cheapen the necessaries of life for everybody, we find that it meets with but little encouragement, and that those who ought to be most interested with it, are the very ones to trouble their heads the least about it.

POULTRY EXHIBITION.—We understand that it is the intention of the Canada West—or as it should now be called, the Ontario—Poultry Association to hold another exhibition in Toronto about the end of October next. This seems a good arrangement, as it will in no way clash with the Provincial Exhibition at Kingston.

MCDONALD'S SHEEP AND LAMB-DIPPING COMPOSITION.—We direct the attention of our readers to an advertisement in the present issue, by which they will learn that a new agency has been established in this country, for the sale of a preparation that has been extensively used in England for destroying ticks and other vermin in sheep and lambs. Mr. McDougal, the inventor of this preparation, is well known, and his name has been long before the public in connection with another useful article, a thoroughly tested and eminently efficacious disinfecting compound, which has established the reputation of the proprietor. The agent for the sale of McDougal's Sheep and Lamb Dipping Composition is Mr. Martin Collett, 468 Yonge Street, Toronto. The inventor claims for this compound that, while it is an efficient application for the destruction of the tick, its use is in no way injurious to the sheep.

MILLER'S SCAR AND TICK DESTROYER.—ITS EMPLOYMENT IN ENGLAND.—This valuable remedy for one of the most common pests to which sheep are subject, has become too well known amongst the farmers of Canada to need any fresh recommendations. The demand for the preparation has steadily increased, and both in these Provinces and in the United States it has taken the lead among all the sheep-dipping compounds and washes either manufactured at home or imported. We are gratified to learn that it has now been introduced into the mother country, and has begun to compete with the applications for the same purpose in use both in Scotland and England. Our own Government thought it worthy of a place among its contributions to the Paris Exhibition, where it attracted considerable attention, and many orders were there received for its supply from Great Britain. It has won most favourable testimony from a large number of practical farmers on this Continent, many of whom have expressed themselves in the strongest terms not only as regards its efficacy in removing the ticks, but also of its excellent effect on the growth and quality of the wool, a fact which has been specially noticed both by wool growers and buyers. It is now fairly introduced into Europe, and has been commended in British journals. We have no doubt that its employment will become still more general as its merits become more widely known.

Agricultural Intelligence.

Awards to Canada at the Paris Exhibition.

A CONTRIBUTOR to the columns of the *Globe* has furnished a list of the medals and honorable mentions awarded at the Paris Exhibition to Canadian exhibitors. The list, though somewhat long for the columns of THE CANADA FARMER, is of such general interest, and comprises so large a proportion of articles directly included among agricultural products, or nearly connected with the Farmer's calling, that we make no apology for inserting it entire. The awards are as follows:—

ONTARIO AND QUEBEC

GOLD MEDALS.

- L. Albe Brunet, Quebec, collection of woods for educational purposes.
- Dr. Tache, for organization of the Department Commission Geologique du Canada, Montreal, collection of ores, minerals, stones for building purposes, &c.
- N B—A gold medal was not actually awarded to the collector of minerals, which was a *dis courtois* (not counting), but it was classed by the jurors of the group in which it figured, as ranking with objects that had received a gold medal.

SILVER MEDALS.

- Board of Arts and Manufactures, Toronto, Natural History collection
- Geological Commission of Canada, Montreal, Geological maps of Canada
- Inspectors of Wood, Quebec, large timber
- J. Millar, Montreal, Extract of bark for tanning.
- Mobé Farm of St. Anne's, collection of products.
- Yman, Clare & Co. Montreal, drugs, dyes, essences, &c.
- J. B. Hickle, Brooklin, wheat flour.
- School of Agriculture, St. Anne's, collection of products and cereals.
- Sir William Logan, Montreal, various products and cereals.
- P. J. O. Chauveau, school books.
- Department of Agriculture, Arts, and Statistics, Ottawa, books, pamphlets and reports, relative to Quebec College and the School of Agriculture at St. Anne's.
- Mesby, Kleker & Co, Montreal, specimens of leather
- Lawrence Hesse, Georgetown, maize and buckwheat flour
- G. Mackan, Alford, oatmeal
- William Luke, Newmarket, wheat flour.

BRONZE MEDALS.

- Ed Peeny Montreal portmanteaus
- G. Desbarats, Ottawa, specimens of typography
- Brousseau Bros, Quebec, books and journals.
- Brown Bros, Toronto, bindings.
- W. Notman, Montreal, portraits (phot. graph.)
- Geological Survey, Canada, for active co-operation with the work of the commission.
- J. Bouchette, Ottawa, general map of Upper Canada
- J. Barbeau, Quebec, men's boots.
- Fridlington & Walkman, Montreal, various tools.
- L'Esperance Canada fish oil
- S. Shearer, Montreal, machine-made door and windows
- J. A. Bonadon, Toronto, flax, raw and prepared
- Davey Samuel, Montreal, specimens of tobacco and cigars
- A Kirkwood Ottawa various products
- Wenning, Hill & Ware, Montreal, syrups
- N. Pigeon, Montreal, sugar and syrup of maize.
- Jacques & Hay, Toronto, cheap furniture
- Chamber of Agriculture of Lower Canada, clothes and woollen stuffs
- J. Maldrum, Bristol, Canada, spring wheat
- J. Pine, Windsor, water-grown rice
- E. C. East, Montreal, various kinds of boots, shoes, caps &c.
- Hamilton Brothers, Hawkeston, various fibres with bark oil.
- Br. Genard, St. Jacques, specimens of tobacco
- A. Kirkwood, Ottawa, collection of textile plants.
- D. Tetreau, Quebec, maize, potatoes and cattle skins.
- N. Vallis, Montreal, leather
- John Mitchell, Mono, wheat.
- F. Barclay, Tunstield, wheat.
- John Paterson, Scarborough, barley
- A. Stewart, Bristol, cereals.
- James Peabody, Montreal, various articles
- Clement Bois St. Jean, Pt. St. Jov. rye

HONORABLE MENTION.

- Department of Public Works, photographs.
- Leggo & Desbarats, Quebec, photographs.
- A. Henderson, Montreal, photographs.
- La Hucheliere, Lavaltrie, trusses and surgical apparatus.
- Canadian Government, furniture.
- The Messes Bazal, Raviero du Loup, table cover
- Madame Bouchard, hair kerchiefs.
- Morton & Co., Bradford, flax
- Morland, Watson & Co., instruments used in making saws
- John Higgins, St. Hilaire, handles for various tools
- J. Fami, St. Anne's, circular and other saws.
- J. T. Biglow & Co., Montreal, hardware.
- John Laws, Montreal, planes
- E. F. Abbott, Gananoque, bolts
- Isidore Champagne, Ottawa, sections of trees
- G. Hogan & Co., Montreal, tubs, buckets and utensils
- The Proprietor, St. Martin, whip handles
- O. Cote, Quebec, furs and skins.
- H. C. Evans, Kingston, leeks and manufactures of malleable iron
- Nelson, Wood & Co., Montreal, basket work.
- Mark, Smith & Co., Montreal, various articles
- Laroche, specimens of tobacco
- George Harrington, Montreal, portmanteaus.
- A. Duncan, Markham, iron plough.
- J. G. Morgan, stump extractors.
- Pat. de la Cie, T. L. and H., W. L. Wang machine and chaffcutter
- J. C. McLaren, Montreal, leather, belts and piping
- Glas, Co., Montreal, various articles.

J. C. Spence, Montreal, stained glass.
 Grand Trunk Co., model of sleeping car.
 St. Anne's School, plan in relief.
 Reed & Childs, Montreal, boot trees.
 O. Thibault, L'Islet, maple sugar.
 Societe d'Agriculture de Beauce, St. Marie, maple sugar
 Owen McGarvey, Montreal, chairs for exportation.
 C. J. S. Bethune, Credit, collection of insects.
 H. W. Date, Galt, edged tools.
 S. Canover, Fort Credit, hops.
 P. Dugal, Quebec, leather.
 S. Campbell, Montreal, driving belts.
 N. F. Boissonault, Quebec, patent paper case.
 F. Bartholomew, Markham, oats and buckwheat.
 W. H. Vaughan, St. Jean, cereals.
 Et. Caron, St. Jean, Pt. Joli, spring wheat.
 Thomas Brownlie, York, spring wheat.

NOVA SCOTIA AND NEWFOUNDLAND.

GOLD MEDAL.

Commission of Nova Scotia, fish and crustacea.

SILVER MEDALS.

General Mining Association, N. S., block of coal.
 P. S. Hamilton, N. S., gold and quartz.
 Andrew Downs, N. S., stuffed birds.

BRONZE MEDALS.

Bill & Skerry, N. S., axes.
 Tilley, Newfoundland, fish oil.
 Kinlay, N. S., geographical apparatus.

HONORABLE MENTION.

Miss McCurdy, N. S., linen thread.
 Henry Howe, N. S., collection of minerals and ores
 Starr & Son, N. S., skates and tools.
 Geological Survey, Newfoundland, collection of mineral products.
 W. Langmead, Newfoundland, getina galena.
 Cohn La Manche Mine, Newfoundland, getina galena.
 J. Dexter, N. S., specimens of woods and cabinet work.
 W. S. Symonds & Co., N. S., gold quartz crushing machine.
 T. M. DeWolfe, N. S., carriages.
 O'Brien, Halifax, N. S., carriages.
 Starr Manufacturing Company, Halifax, N. S., axle-trees.
 Commission of Nova Scotia, navy biscuits and pastry.
 Longley, N. S., cheese.
 Sillay, Newfoundland, dried fish.

Increase of the United States Grain Crop.

(From the Agricultural Report for July.)

The harvest is gathered in Georgia and the other Gulf States, with a very gratifying result. The acreage of winter wheat is as large in the majority of the States as last year, though it is less in a few of the principal wheat-growing States. Texas, Kansas, Ohio, Indiana, report a diminished acreage; Virginia, Georgia, Arkansas, Tennessee, a largely increased breadth; the New England States show a slight increase; the middle States a similar advance, not exceeding six per cent.; the Southern wheat-growing States an average increase of twenty per cent.

Ohio reports an average improvement upon last year of 160 per cent.; Indiana 73 per cent.; Illinois 15 per cent.; Michigan 80 per cent.; Wisconsin 22 per cent.; Minnesota 7 per cent.; Missouri 39 per cent.; Kentucky 53 per cent.; Virginia 100 per cent.; North Carolina 40 per cent.; Tennessee 53 per cent.; and other States, with the exception only of Texas, making a favourable comparison with last year.

The averages of spring wheat are largely increased; in Ohio 27 per cent.; Indiana 48 per cent.; Illinois 25 per cent.; Minnesota 35 per cent.; Wisconsin 15 per cent.; Michigan 16 per cent.; Missouri 31 per cent.; Iowa 28 per cent.; Kansas 30 per cent.; Nebraska, 90 per cent. This increase of breadth in the wheat-growing region, must tell very perceptibly upon the aggregate yield, if no unusual casualty awaits the maturing crop. If the conditions continue favourable, at least two hundred millions of bushels may be expected in all the States and Territories.

OATS.—The average of oats is larger than usual; in the west, Ohio is the only State which cannot show an increase. The crop is somewhat variable in the South, far above an average; in New York, ten per cent. below; in Pennsylvania, six per cent.; in Kentucky, fourteen per cent. In the West generally, the prospect is better than last year.

Fall Agricultural Exhibitions.

WEST DURHAM AGRICULTURAL SOCIETY.—The Fall Exhibition of this Society will be held in Bowmanville, on Friday, the 4th of October, and the Exhibition of the DARLINGTON BRANCH of the same society on Friday, the 11th of October, at the same place.

EAST RIDING OF DURHAM AGRICULTURAL SOCIETY will hold its Fall show at Port Hope, on Wednesday, the 9th of October.

COUNTY OF VICTORIA AGRICULTURAL SOCIETY.—This Society will hold its fall show in the town of Lindsay, on Thursday and Friday, the 10th and 11th of October next

Mowing Matches.

A Mowing Match in connection with the "Huron Farmers' Association," came off on Wednesday, the 17th instant, on the farm of Mr. Copeland, in the Township of Stanley, in this county. The machines that competed, being all combined mowers and reapers, were eight in number.

There were two sets of judges; three to judge of the quality of the work done, and three to judge of the best constructed machine.

The first prize for the best mowing was awarded to "Woods' Patent," from Elora; the second prize to Waterous & Co., of Brantford; and the third prize to the "Ball's Ohio," from Lucan.

For the best constructed machine, the first prize was awarded to the "Ball's Ohio," from Lucan; the second to "Sherman," of Stratford; and the third to the "Ball's Ohio," from Hamilton. The awards, as "combined machines," cannot be given, of course, till after the coming "reaping match."

FULLERTON.—On Wednesday, 3rd inst., the mowing match under the auspices of the Fullerton, Hibbert and Logan Agricultural Society, came off on the farm of Mr. Charles Huggill, Fullerton. There were from 800 to 1,000 spectators present, and machines were entered from London, Hamilton, Ayr, St. George, Stratford, New Hamburg, St. Mary's and Oshawa—the latter of which again bore off the palm amidst all competition, and was awarded the first prize by the judges, thus sustaining the well-earned and widespread reputation of Hall's establishment in these counties.

Mr. Wylie, of Iroquois, has 600 acres of flax that will yield as much, if not more, than was harvested last year from 800 acres.

The number of caterpillars on the shade trees in Troy, N. Y., is enormous, and they are devouring the trees rapidly.

In Utah the gulls are making a vigorous campaign against the grasshoppers. The Mormons say that they were once before saved from famine in the same way.

There will be a horse fair at Buffalo, N. Y., commencing August 13th, and to continue four days. The premiums offered amount to \$12,000. Hon. J. C. Wells, President, and H. Millard, Secretary.

PRESERVATION OF SMALL BIRDS IN FRANCE.—The Minister of Agriculture has addressed a circular to the mayors of France, enjoining them to punish severely all persons caught in the act of netting, trapping, &c., small birds, whose valuable services as destroyers of insects he set forth, demonstrating by statistics the utility of these humble members of the feathery genus.

OFFICERS OF AGRICULTURAL SOCIETIES.—We have been requested to correct an error in the published List of Officers of Agricultural Societies, in regard to the North Oxford Society, of which Mr. John Craig is President, and Mr. R. W. Sawtell, Secretary. The name of Mr. Foljamba Awy should also be substituted for that of Mr. John Pepper, as President of the Fullerton, Logan and Hibbert Agricultural Society.

LARGE CLIP OF WOOL.—Mr. Jacob Speers, in a letter to the *Brampton Times*, says:—I purchased from Mr. John Snell, of Edmonton, last week, his clip of wool for this year, amounting to 1,530 lbs. of long lustre wool, suitable for combing purposes. Besides this, Mr. Snell sent 165 lbs. to the factory to be manufactured for family use, making in all 1,695 lbs.—a crop, I think, that is hard to beat.

SALE OF HORSES.—The first annual sale of improved stock, bred and owned by E. N. Wilcox Esq., of Detroit, took place June 13th. Ten were put up for sale; six were sold at an average price of \$190 83, the average age being three years. Mr. Wilcox will continue these sales annually, and will offer larger lots in future. He has a number of thorough-bred colts, some of which will probably be offered at the next sale.

CANADIAN MUSCLE.—The peerage of human muscle is to be found in Canada. Time and again have our athletes carried away the laurels from all comers. At the recent games in New York, where a large number of prizes were offered, a Canadian from the vicinity of Ottawa, named Thos. Russell, succeeded in winning nine prizes out of the twenty-two given, against the representatives of all America. Prizes were gained for the following:—Running jump, running high jump, race of one hundred yards, standing high leap, hitch and kick, (that is, kicking high), and running hop, step and jump.—*Woodstock Times*.

The Apiary

Wax or Bee-Comb. Propolis or Bee-Glue.

Wax is a natural secretion, and is produced in a similar manner as tallow is produced. If bees are fed on honey or any liquid sweet, they will secrete wax; and as pure white wax will be produced when bees are fed on the darkest of sugar or syrup, as when fed on pure honey. During the comb-building season small scales of wax may be seen issuing from between the rings of the abdomen of the worker bee. The drones never secrete wax. Fifteen or twenty pounds of food are required to secrete one pound of comb; hence old comb is valuable to give the bees, when it is not full of worms or mould. Clean pieces of comb, placed in the honey-box, will often induce the bees to enter and go to work when they otherwise would not. An attempt is being made to produce artificial comb by several American bee-keepers, who are sanguine that it can be perfected. In many instances it would be of great advantage.

By many wax is often confounded with bee-glue, but there is a wide difference. Wax, as already observed, is a natural production of the bee, while bee-glue is gum or resin that exudes from different trees, and is used for stopping up cracks or any joints in a hive that would admit air or the miller. It is found on the pine, hemlock, cedar, fir, balm of Gilead and cherry trees. The bee gathers it, and carries it in the same way as it does pollen or bee-bread.

ITALIAN BEES.—Mr. H. Reazin, Head Master of the Grammar School here, has made a successful attempt to introduce these famous bees into this County, by importing through J. H. Thomas, Esq., Brooklin, Ontario, an Italian queen bee from Quinby, the celebrated American bee-keeper, at a cost of \$5.50. Mr. Reazin has just built, at considerable expense, one of Thomas's improved bee-houses for wintering bees, capable of holding about forty hives. He has also purchased the right to make Thomas' patent hives, and has let a contract to build fifty of them.—*Lindsay Post*.

"HOW DOTH THE LITTLE."—Within the almost boundless sphere of natural history, perhaps there is no one subject more interesting and instructive than that within such a small body as that of the bee there should be contained apparatus for converting the "virtuous sweets" which it collects into one kind of nourishment for itself, another for the common brood, another for the royal, glue for its carpentry, wax for its cells, poison for its enemies, honey for its master; with a proboscis as long as the body itself, microscopic in its several parts, telescopic in mode of action; with a sting so infinitely sharp that, were it magnified by the same glass which makes a needle's point seem a quarter of an inch, it would yet itself be invisible; and this, too, a hollow tube; that these varied operations and contrivances should be enclosed within half an inch in length and two grains of matter, while in the same small room the large heart of at least thirty distinct insects is contained, is surely amazing in an extraordinary degree.—*American Bee Journal*.

BEE DRESS.—For every department of house-work equip yourself properly. Unless very timid, you will in your every-day care of bees need no protection—any way, no more than gloves and your gardening hat and veil give. For extraordinary work, such as hiving, making artificial swarms, pruning comb, or taking surplus boxes, you will need a bee-dress, which can be made perfectly efficient as follows: Having a hat on your head, measure from the band down to your waist, very free measure, two lengths of calico; sew these together at the sides, and put in a third strip a half yard wide, of some transparent material. Hem strongly top and bottom, and run in a strong gum-elastic tape. One of these cords will draw around your hat band, the other around your waist; the gauze width is before your face, allowing free vision. Now insert long, easy-fitting sleeves with an elastic cord that fits closely over your glove at the wrist. With thick hose, stout shoes, and snug fitting under-wear, you are perfectly free from danger from the most exasperated swarm. Your skirts should be bloomer, as trails gather up the bees from the grass, and the hat brim should be broad, otherwise the bees may reach your face through the cloth.—*Country Gentleman*.

Canadian Natural History.

The Northern Pickerel.

(Esoc Lucioides. Agassiz.)

THE accompanying illustration of one of the most powerful and voracious fish of the great lakes, as well as the substance of the following description, are taken from a very interesting and admirable work, by Frank Forester, on "Fish and Fishing of the United States and British Provinces of North America." This fish very closely resembles and has often been confounded with the Mascalonge (*Esoc Estor*) of the same waters, and the European pike (*Esoc Lucius*), with both of which, especially the latter, it is very closely allied, yet clearly belongs to a distinct species.

The Northern Pickerel is taken up to the weight of sixteen or seventeen pounds, but rarely exceeds that weight. It is a remarkably handsome fish, longer and slighter in proportion to its depth than the Mascalonge. Its body is four-sided, the back broader and flatter than the belly; the vertical

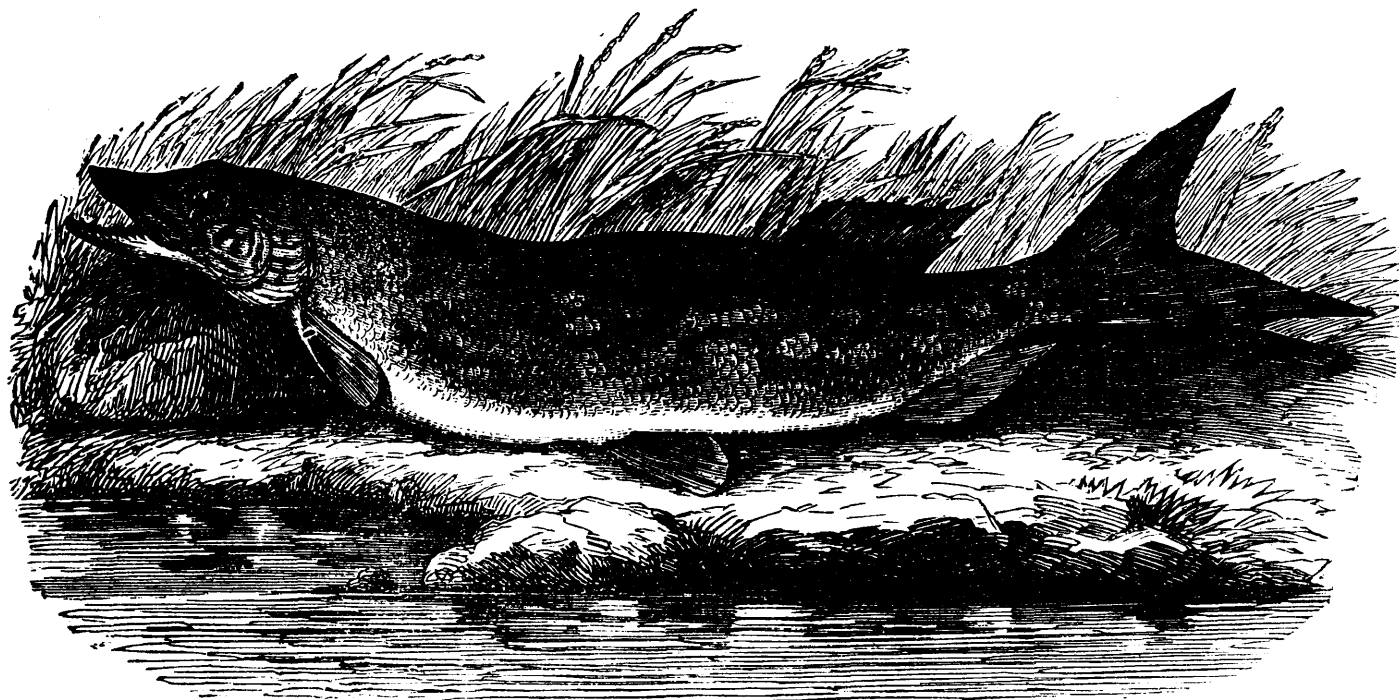
dark spots; the ventrals, the same, with orange tips, but without spots; the pectorals dusky yellow.

The Northern Pickerel is equal in boldness and voracity to the Mascalonge, and to the European Pike, from which he differs in the fin-rays, dental system, gill-covers, and very essentially in the coloring—the Pike being banded or mottled, and having, no indication whatever of the regular rhomboidal spots which mark the sides and form a characteristic of the Northern Pickerel.

He takes any sort of bait in spinning or trolling, and being readily captured by set baits through the ice, forms a very essential article of food to the Indian hunter when the chase fails him. No animal food of any kind comes amiss to this fresh water tyrant. Fish of every variety, even his own species, and the spring Perch, the immature young of wild fowl, rats, reptiles of all sorts—in short, every living thing that comes within his reach, ministers instantly to his voracious appetite. But the baits by which he is most sportingly secured are the small bright *Leucisci*, or shiners, at the end of a double swivel trace, or a live frog, which he can rarely refuse.

return with a new mate. A young friend, to whom I mentioned this, is of opinion that the Bluebird belongs to that family of bipeds who "pair for life." What a sermon in two short words! Shade of the Mormon Prophet, didst thou but consider! The Wrens have failed to take possession yet, which I attribute to the fact that a sagacious old puss, with a view to protect me from rats, has removed, with her family of six, from the barn to the wood-pile in front of the nest.

"By and by, when ripe, I will send you, if I can then find them, some specimens of Canadian Wild Beans. If new to you, they will somewhat interest you. One of these bears an average sized bean, without a pod, in the earth at the foot of the stalk, while above ground are a number of small pods containing the most beautifully speckled lilliputian beans, the sight of which makes you look furtively round for other vestiges of Lilliput; but there is nothing to greet the eye save the sombre giants of the forest, wild leeks, and other herbage of rankest growth, and your dream fades away, "through the Horn Gate," as dreams do and must fade.



diameter is equal to about one-seventh of the body—caudal included; the transverse diameter is two-thirds of the vertical; the body carries its thickness to the dorsal fin, and then tapers into the thin tail; the sides are compressed and flattened; the head is about one-fifth the length of the body; the snout not nearly so long, and much more obtuse than the Mascalonge; the under jaw does not exceed the upper in length nearly so much as in that fish, and is armed around all the forepart with a single row of small, slightly-hooked teeth; on the sides of the lower jaw is a row of larger awl-shaped teeth, implanted in the bone; the palate bones, vomer, and pharyngeal arches, are all armed, as in the other species, with bands of small sharp teeth like carding machines; the tongue is broad, and truncated at the tip.

The back of this beautiful fish is of a rich blackish green, which changes on the sides to greenish gray; there is a bright speck on the tip of each scale, which gives a singularly light and sparkling aspect to the whole fish. The belly is of a lustrous pearly white. There are several rows of oblong, diamond-shaped, yellowish gray spots on the sides of the head, body and tail. The cheeks are varied with emerald green reflections. The under jaw and gill-rays white; the irides purple, with a golden band around the pupil; the dorsal and caudal fins are blackish green; the anals greenish gray, with orange margins, and a few

Professor Agassiz considers this fish peculiar to the great lakes, but it is said to have been very recently found in the Connecticut river, and is supposed to have been introduced there by the breaking out of a new outlet from some mountain lake.

More Bird Gossip.

In reply to some enquiries made respecting the latest proceedings of the pair of Bluebirds, of which our correspondent from Wyoming gave us recently so interesting an account, "Ben Bearcolt" writes:

"I should have answered your letter immediately, but I could not bring myself to write, merely to say my old friends, the Bluebirds, had quite deserted me. So I waited, hoping against hope, until it was too late for the issue in which you proposed to give my letter. On the morning of the 3rd of June last, a little before sunrise, I was agreeably saluted with the peculiar warbling of the Bluebird. "A good omen!" thought I, and hastened to see. There, on the old perch, sat a male Bluebird, but quite alone. He stayed around three or four days, lingering about his old haunts. That it was my Bobbie I have not the slightest doubt, and if Bob, then a widower. And yet he did not seem like "one who sorroweth without hope," like George Sheldon's "venerable intestate," and I still indulged in the hope that he would

NOTE BY ED. CANADA FARMER.—Having since the above was written received a specimen of the plant referred to, we are able to identify it as the Hog Peanut (*Amphicarpæa monoica*), a delicate vine remarkable for bearing, as our correspondent has noticed, one kind of flower and pod often covered with dead leaves or soil at the base, where usually but one seed is ripened, and near the summit another set of flowers, which are frequently infertile, or produce only minute and imperfect seeds; hence the plant has received its botanical name—*Amphicarpæa*—from two Greek words, *amphi*, at both ends, and *carpos*, fruit. The plant belongs to the natural order LEGUMINOSÆ or Leguminous tribe.

A monstrous sun-fish, weighing over 500 pounds, was captured at New Bedford, Mass., on the 9th.

MONSTER SALMON CAUGHT IN THE WYE.—We (*Field*) have learnt from Hereford that an extraordinarily large salmon was caught in the Wye yesterday (Friday). Its weight was 55 lb.; length, 4 ft 8 in.; girth, 27 in.

LARGE TROUT CAUGHT IN THE TAY.—On Thursday morning, a bull trout, weighing 34 lb., was caught with the net on the Speedies Station at the North Inch, Perth. This is the largest trout ever known to have been got in the Tay.



Toronto Electoral Division Horticultural Show.

THE summer exhibition of the Toronto Electoral Division Society was held in the Horticultural Gardens, Toronto, on Thursday, July 18th. The day was remarkably fine, and the gardens, always a pleasing and attractive place of resort, looked their best, the flower-beds being gay with brilliant colours, the green sward in excellent order, and the foliage of the fine trees in full summer verdure. The horticultural display was set out in a tent on the north side of the grounds, and so far as it went was very beautiful and creditable; but we were very sorry to see so small an exhibition. Owing to various causes, the number of exhibitors was extremely small, and the display was, therefore, on the whole, very far from what such a city and suburbs as Toronto ought to furnish. The Society are exerting themselves with praiseworthy diligence in the important task of encouraging and advancing the interests of horticulture, and it is much to be regretted that a greater number of the professional and amateur gardeners in this neighbourhood do not second their efforts, by at least lending their aid to these useful exhibitions, by which those engaged in horticulture as a business would at the same time advance their own interests, and those who pursue it only for their pleasure would thus extend the taste for the garden with its manifold charms and advantages. We sincerely hope the next exhibition will be far better supported and supplied.

The various edible and ornamental products exhibited on the present occasion though few in number were some of them very fine. There was a small but good display of vegetables, for which prizes were awarded, amongst others, to Mr. George Tattle, of Yorkville, Mr. Guthrey of the Asylum, Mr. John Grainger Mr. John Logan, of York Township, and amongst amateurs, C. S. Gzowski, Esq., and the Hon. D. L. McPherson, also obtained prizes in this class. Some beautiful specimens of fruit were displayed, conspicuous among which were black and white grapes, and a beautiful dish of peaches, by C. S. Gzowski, Esq. The Hon. D. L. McPherson showed some very fine and large red currants, and also very fine gooseberries. Mr. G. Tattle, of Yorkville, carried off the palm in cherries, and his specimens were certainly very choice. Mr. John Logan obtained a prize for a dish of remarkably large red raspberries, and Mr. Edwards, the Secretary of the Society, obtained a similar distinction for the white variety of this fruit. Mr. James Fleming exhibited some very fine Trollope's Victoria strawberries, and Mr. G. Leslie showed some remarkably large Triomphe de Gand and other varieties of this fruit. We thought that the guardian of this tempting portion of the tables would have no sinicure, when the visitors, allured by the additional attraction of the military band, came in greater crowds towards evening.

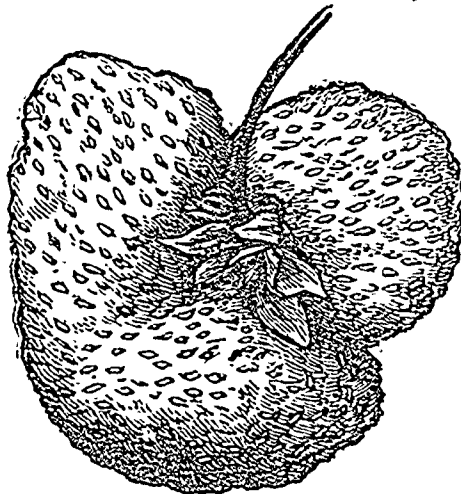
The display of flowers was smaller than the Spring Exhibition of the Toronto Horticultural Society, held in the Mechanic's Institute Building, but contained some praiseworthy contributions. Among them we especially noticed two beautiful baskets of flowers, by Mr. R. Guthrey, and Hon. D. L. McPherson, and a table bouquet by the latter; a most elegant group of white lilies, by Mr. James Fleming; a variety of fine shrubs, by Mr. G. Leslie; and collections of stove and greenhouse plants, by C. S. Gzowski, Esq., and Hon. D. L. McPherson. In this department

we missed several usually prominent exhibitors. We hope to meet the majority of these again, and a large accession to the ranks of exhibitors, on the next occasion of a flower show in the Horticultural Gardens.

Within a few days after the above date, we received with deep regret the announcement of the death of the Hon. S. B. Harrison, Judge of the County of York, who, besides rendering many more important services to his country, was always an active promoter of Canadian horticulture, and whose serious illness at the time of this exhibition explained the absence of the fine collection of green-house and other plants usually exhibited by him. His loss will be severely felt in many departments of public service.

New Seedling Strawberry, "Iron Duke."

We have received from Thos. H. Graydon, Esq., of St. Catharines, a fine specimen of a new seedling Strawberry grown by him, which certainly, so far as we can judge from the single specimen, is remarkably fine, both in size and flavour, and very prolific in bearing. A splendid stalk, loaded with berries, which we received, had so far suffered from the journey as to be unfit for the purpose of an illustration,



which would besides, have required more space than could have been spared in this issue; but to show the size and general figure of this new variety, which Mr. Graydon calls "The Iron Duke," the artist has copied the outline of a single berry, from a photograph, giving the exact size and form. Mr. Graydon says the circumference of the specimen was seven and a quarter inches, and the weight one ounce and a quarter. "Very many of the berries," he adds, "have been larger than those photographed."

Apple Tree Blossoming Twice in one Season.

To the Editor of THE CANADA FARMER:

SIR,—I have an apple tree of the variety known as *Maiden's Blush*, with a full crop of fruit, about the size of a walnut, that is now, for the second time this season, in full blossom. Is this a very extraordinary occurrence? I have frequently found a single blossom on an apple tree long after the other blossoms were gone, which single blossom was generally double like a rose. I have also occasionally seen fruit trees come into blossom late in the fall, after the season's fruit and foliage were gone; but never before have I met with an instance of a fruit tree blossoming in the latter part of July, bearing at the same time a good crop of fruit. Another tree of the same variety, standing within a few feet of the former, presents no such phenomenon.

J. S. SMITH.

Port Hope, July 23, 1867.

NOTE by Ed. C. F.—We have heard of similar instances occasionally though very rarely occurring, but none have ever come under our own observation.

Birds in Cherry-trees.

EVERY one who grows cherry-trees has, no doubt, been vexed and disappointed to find that just as his finest fruit becomes nearly ripe, it is devoured by hordes of different kinds of birds, foremost among them the dauntless cherry-bird. A "new dodge" has, we are happy to say, been lately hit upon with most excellent effect. All you have to do, to save your cherries, is to get a good-sized stuffed hawk, and get it upon a pole overlooking the cheery-tree, just before the fruit becomes ripe; if your trees are numerous or far apart, of course, more than one will be required. It is amusing to see the consternation produced among the small birds on the first appearance of his hawkship among them; they come up with their usual effrontery, and then suddenly getting a glimpse of their natural enemy, they wheel about, and go off in double quick time, and do not venture near again. By putting up the hawks just as the fruit is colouring, and removing them after it has been gathered, you have the good services of the birds in keeping down insects, and at the same time have not to pay for their work with all your cherries. A grateful gardener will, of course, leave some fruit on the ends of the boughs for the benefit of his little friends, and not expect them to labour entirely in vain. We can vouch for the success of this plan, as we have seen its good effects with our own eyes. Two hawks, costing a dollar apiece, have saved this year about \$20 worth of fruit, and can, of course, be used again another year.

Insects on Roses.

THE aphid or green fly, and the rose-slug, are the two greatest pests of this queen of plants.

Of late years they have become truly formidable. They eat out the succulent part of the leaves, causing the bush to look unsightly, and of course destroying the health of the plant, and preventing its natural inflorescence.

There are two ways to exterminate them. One is by the use of tobacco water. A pound of shag tobacco and four gallons of warm rain water will make a decoction which no insect can stand, and it will not injure the plants. As the insects are mostly on the under side of the leaves, it is best to sprinkle them with a garden syringe made with a crooked neck.

But our favorite remedy is whale oil soap. Take one pound of the soap and mix it with seven gallons of hot rain water, stirring it while hot till it is all dissolved. If one has a great number of roses, he had better make a barrel-full of the wash, using four pounds of soap. Wait until it is cool and the dregs settled, then apply it with the crook-necked syringe. If one application does not kill the whole brood, try it again in a few days. Two doses will surely do the work. And it is worth mentioning that the soap-water which drops to the ground will act as an excellent fertilizer to the roots.

We copy the above from the *Rural American*, but in our own experience have found that one pound of the whale oil soap to two or three gallons of water is the proper strength. This can be ascertained by experiment, but we should consider the above entirely too weak a solution.

It is undoubtedly the best remedy for the rose slug.—*Practical Farmer*.

A New Jersey correspondent of the *Country Gentleman* had potatoes large enough to eat June 24, that were planted April 1. Cut sets started March 1, and transplanted April 1, were full grown June 24.

The Massachusetts Horticultural Society has awarded its silver medal to George Jacques for the discovery of the tobacco soap as an effective specific for the destruction of vermin on greenhouse and garden plants, of cockroaches, and so forth.

FRUIT GROWERS' MEETING.—We learn from the *Western Rural* that the Western New York Fruit Growers' Association held its summer meeting in Rochester, on June 27th. The show of fruit was confined to strawberries, of which there were many fine specimens. A discussion on the best varieties of this fruit resulted in a verdict, according to the majority of votes, in favor of the following, in the order named—Triomphe de Gand, Wilson, Hooker, Jucunda and Agriculturist.

Entomology.

Entomological Society of Canada.

At the annual meeting of this Society held on Tuesday, the 9th ult., after the reading of reports and the transaction of routine business, the following gentlemen were appointed to hold office during the ensuing year:

PRESIDENT.—Professor Croft.

VICE-PRESIDENTS—E. Baynes Reed, Esq., London.
G. J. Bowles, Esq., Quebec.

SEC. TREASURER—Rev. C. J. S. Bethune, Credit.

CLERK—W. H. Ellis, Esq.

COUNCIL.—Dr. J. H. Sangster.

Rev. Prof. Hincks.

Dr. Thos. Cowdry.

The Barley Joint Worm.

To the Editor of THE CANADA FARMER:

SIR,—Herewith I send you specimens of the Barley insect, which is becoming quite common in this part of the New Dominion, and of the diseased straw.

These insects have been and are still, by many, supposed to be parasites of some Dipterous insect infesting the barley, and not the real authors of the mischief. Having observed them closely while ovipositing, I am convinced that they are the true culprits and should be dealt with as suggested by Dr. Harris, wherever they are to be found.

GRIMSBY.

NOTE BY ED. C. F.—We are much obliged to our correspondent for the specimens he has kindly sent us of this interesting insect. The flies are undoubtedly specimens of the Yellow-legged Barley-Fly (*Eurytoma flavipes*, Fitch), but whether they are the authors of the injury to the barley-straw, and our enemies, or, on the contrary, parasites that prey upon the joint-worm, and our friends, is a question that has not yet been decided, and one upon which the most talented American Entomologists are at variance. Dr. Fitch and Dr. Harris both are of opinion that this fly is the parent of the worm, while Mr. Walsh asserts that it is not, but that it is a parasite preying upon the worm, the former recommends its extermination by burning the stable of infested fields after they have been reaped, while the latter considers that to destroy the *Eurytoma* would be to destroy one of the farmer's best friends. We are ourselves inclined to agree with Mr. Walsh in thinking that the worms that produce the galls or excrescences on the barley stalks are larvae of some Gall-gnat (*Cecidomyia*), and that the flies sent us, which our correspondent saw ovipositing, are parasites on these worms. It would help very much to clear up this question, if "Grimsby" would describe as fully as he can the operations of the flies that he witnessed, and tell us whether they deposited their eggs in healthy straw, or in that which was already diseased and swollen. The worms that we obtained from the galls correspond with Dr. Fitch's description, but they have also the Y-shaped "breast-bone," which Mr. Walsh declares is "characteristic of the larvae of the Gall-gnat family, and is found in no other larva." The only way of course, in which the mystery can be cleared up is by raising large numbers of the worms, and tracing them up to the mature flies. This has been attempted by both Dr. Fitch and Dr. Harris, but unfortunately Gall-gnats of all kinds are notoriously hard to raise artificially, while their parasites afford no difficulty; and thus the parasites are produced from the worms and the gnats fail, and the supposition is that there were no larvae of gnats at all in the straw, but only of the *Eurytoma* flies.

We trust that our correspondent, who has the diseased straw in his own neighbourhood, will endeavour to decide this question by breeding the flies. The best mode probably of doing so is to plant a quantity of the affected barley in a large flower pot or box and enclose it well with gauze or muslin, a fresh supply of the plant should be obtained every now and then, in order to obviate the possibility of a failure. We look forward to hearing from him again.

Fir-tree Caterpillar.

To the Editor of THE CANADA FARMER

SIR,—In your last year's volume I saw some notice of a worm which destroyed the leaves of the Balsam fir trees.

It has occurred in great numbers at a few points in this vicinity, this year as well as last. They make their appearance late in May, and disappear totally about June 20th, as shortly after that date I looked for specimens to forward to competent entomologists, and failed to get any where thousands abounded a few days previously. They attack the leaves of the previous year's growth, leaving for the last extremity the shoots of the present year, not aiming to destroy totally their means of subsistence. The trees now look as if burned, except at the end of the twigs. They seem to travel very slowly, as trees at a short distance from those infested are entirely free. I have not noticed them in those growing in the forest. They seem to dislike spruce, and refuse pine leaves altogether. If they spread through the country generally it will be a serious calamity, as the Balsam is not only a rapid-growing, easily transplanted ornamental tree, but very valuable as a windbreak. The worms are small and brownish, with a faint row of dots upon their sides. They taper from head to tail. I had intended to describe them minutely, if they had not so suddenly passed from view. I should like to know whether they are wide-spread in Canada. I can imagine no cure for them in large trees; in small ones, I suppose that powdered hellebore or a strong decoction of tobacco would stop their breath, if they have any.

E. R. M.

NOTE BY ED. C. F. From the brief description given by our correspondent, we cannot, of course, venture to decide upon the exact species by which his Balsams are affected, but from the particulars he has given of the habits and general appearance of the insect, we have no doubt the worms are the larvae of a saw-fly (*Lophyrus*). Six species of this genus are known to feed upon the leaves of the pine and fir trees, oftentimes committing great havoc. They usually appear in great numbers early in the summer, and after feeding for some time upon the old leaves of the previous year's growth,—they do not touch the new shoots, as our correspondent has observed, all at once turn into the pupa state, and apparently disappear entirely. Their cocoons may, however, be found in crevices and under leaves, and also about the roots of grass on the ground. From these cocoons a new brood of flies usually comes forth in the end of July, and lays its eggs for a second crop of worms, which are hatched in August, and form their cocoons in the autumn, for the next year's supply. These insects are well known for their destructive habits in various parts of the world. In Germany some species of *Lophyrus* have, according to Kollar, destroyed whole forests of pine and fir-trees; while another observer, D. E. Müller, has published a large volume on the depredations of four species of these saw-flies, by which several thousand acres of pines were destroyed in Franconia. Harris describes their attacks upon ornamental fir-trees in Massachusetts, and Dr. Fitch their ravages among pines, fir and spruce trees in New York. Thus it will be seen that they are no novelty in other countries, and are probably numerous enough in Canada, though we have no statistics respecting their distribution. When the next brood appears, we shall be much obliged to our correspondent if he will send us some specimens for identification; we should also be glad to receive some of the cocoons, if he is able to find any about the trees. The remedies most recommended for this insect are, (1) to water them with strong soap-suds, and (2) to shake the branches or beat them with a stick, early in the morning, before the worms become active, and catch those that fall in sheets or news papers spread below, and then either burn or scald them, or feed them to pigs. Hellebore and tobacco-water would also, we should think, be effectual, the former is very successful in destroying the similar saw fly worms on currants and gooseberry bushes. Will our correspondent kindly furnish us with his name and address, as we should like to know in what locality these insects have been found.

Strawberry Insects.

In our report of the Summer meeting of the Upper Canada Fruit Growers' Association, contained in our last issue, a brief account is given of Mr. Arnold's observations on insects affecting the strawberry plant. He stated that his plants during the last two years had been "greatly infested by a small insect much resembling the (? plum) curculio, but only one quarter the size, and furnished with a long proboscis;" this insect "cut off the berries before they were half grown, by puncturing the stem near the fruit." Being anxious that strawberry-growers should have some more detailed information respecting this insect, we applied to Mr. Arnold for some specimens of it. He very kindly sent us a box containing samples of two or three insects that we shall notice presently, and wrote as follows:—"On receipt of your application I began to search for some fresh specimens of the insect which I had accused of destroying my strawberry plants for the last two years, not being able to find any fresh ones, I send you those that were caught last month. I do not say, positively, that this is the very insect that does the mischief, but think that on one or two occasions I have caught them in the very act of cutting the stems close to the fruit."

The specimens referred to in this letter consisted of two small beetles, that are entirely new to us. They can hardly be the species referred to at the meeting, as they have no long proboscis like a curculio, but have a very small head in proportion to the thorax. They are slightly over one-tenth of an inch in length, and half as wide, the whole insect is of a deep shining black; the thorax is triangular and convex. The wing-cases are very convex, and quite round behind, instead of being divided in the middle, they are connate, (that is, all in one piece), as in wingless beetles, but, strange to say, in these specimens portions of the wings appear beneath. These insects are, we have little doubt, vegetable feeders, and from their pointed thorax and small head, may have been mistaken by Mr. Arnold for members of the proboscis-bearing tribe of curculios. Gathering in a sweep-net, and then dipping in boiling water, would, we should think, be a most effectual remedy for them. Any berries that are cut off should be also gathered up and destroyed, as they probably contain the larvae of the insect.

Mr. Arnold also sent us a number of strawberry leaves, infested by a small pale-green caterpillar, about one-fifth of an inch long. It is a 16-footed worm, with a dark dorsal line, and two black dots on each side of the head. It doubles up a leaf in the middle, and firmly uniting the two portions together with silken threads, lives in the interior, feeding upon the green parenchyma and gradually destroying the leaf. We are endeavoring to raise the specimens sent us, and shall report more fully upon them when they attain to maturity. The moth into which they will turn by and by, will probably belong to the group *Tortricina*, many of whose members are very destructive, some eating the young buds and leaves of the roses and other plants; others, like the specimens before us, taking up their abode in a leaf, which they curl up and fasten with silken threads; others again, devouring the pulpy substance of apples and other fruits. The only mode of counteracting the ravages of this little worm is to cut off and burn all the leaves that are curled and doubled up in the manner described, this can easily be managed, as the leaves affected are readily distinguished from those that are sound and healthy. The worm, we should mention, completes its transformation in the leaf it has selected, and will not, as Mr. Arnold thinks possible, take up its winter quarters in the root, nor will it ever turn into a curculio beetle, but into a moth.

Mr. Arnold also sent us two specimens of the Grape-vine flea-beetle (*Iallica chalybea*, Illig.), which he states have been very troublesome on his vine. This exceedingly destructive insect makes its appearance during the first warm days in spring, and attacks the vine-buds, eating his way to the centre, and, of course, utterly destroying any prospect of fruit on the shoots to which his ravages extend. A second brood appears about the end of June. Watering with strong soap-suds is the most highly recommended remedy. We shall give a more complete account of this insect on some future occasion.

The Household.

Value of Ice.

From a miscellaneous series of "Farm Notes" addressed to the *Mark Lane Express*, by Mr. Mechi, we extract the following seasonable hints, which we would especially extend to house-keepers, as well as the parties to whom the extract more particularly refers, and would again press on Canadian farmers the great importance in this climate of having that most essential item, not of luxury merely, but of household economy, a good ice-house. In the dairy, and in the larder, the value of ice has only to be tried to be fully appreciated. On this subject Mr. Mechi thus discourses:—

Advice to Butchers.—Hot summer weather, especially if accompanied by thunder-storms, causes heavy losses to butchers. If the meat cannot be got cool and stiff after slaughtering, it soon becomes unacceptable to the consumer. A block of Wenham Lake ice, worth a few shillings, may save many times its cost. When I gave my great agricultural gatherings, there was cooking going on for some days previously. The end of July was a time for fires and rapid decomposition. I always, however, succeeded in keeping everything sweet and wholesome. A block of ice, weighing 60lb to 100lb, was placed in the larder. The calorific of the atmosphere was employed and absorbed in melting it, the consequence was a low temperature in which the meat did not enter. The block of ice disappeared gradually, and if necessary was replaced by another. There were several advantages in this proceeding. The fibre of meat got nicely broken down, rendering it tender, white perfectly free from taint. Every alderman knows that buck venison is in high season in the hottest part of July. Nine times out of ten venison is then spoiled by taint, the very smell of it is disagreeable. A noble duke once sent me half a buck in July. By the plan I recommended, it was kept sweet and wholesome for nearly three weeks. Everyone praised it, and the fat was like marrow. I am induced to make this suggestion because some of the best portions of a fine fat bullock purchased of me were spoiled for want of a little cool air. Blocks of ice travel cheaply by rail (goods train) packed in sawdust and old sacking. If meat cannot be got cool enough to become stiff before packing, sending it in that soft state to a market is a ruinous affair. The same remark holds good for meat that is to be salted. A number of my pigs when ready, were divided; one half I sold to a neighboring butcher; and the other half slaughtered at home, and placed in my larder, got cool and stiff, not so the others. My pigs realized in London 12s per head, or 30 per cent. more than those soft flabby ones sent up by the butcher, who thus suffered a heavy loss. I am informed that Messrs. Harris, of Calne, in Wiltshire (who slaughter 500 fat hogs weekly, weighing from 200 lb. each, upwards), import a cargo of ice from Norway, in order to get their meat properly cooled in hot weather, before they salt and convert it into bacon.—*Jan., 1867.*

PURIFYING WATER IN CISTERNS.—A pound or two of either caustic soda or a similar quantity of what is called concentrated lye, both of which may be obtained at the druggists, will purify stagnant odorous water in cisterns.

A REFRESHING BEVERAGE.—Dr. Waller Lewis, in describing the precautions against cholera adopted at the General Post Office, says: "The men employed in sorting letters and newspapers suffer much from thirst, especially in the hot weather, and consequently drink much water while engaged in their duties. Although the Post Office is supplied with the New River Company's water, and this is all filtered through silicated charcoal in the various offices, much diarrhoea was, nevertheless, the result of this practice. For some time past the officers of all classes are supplied from the medical department with a most agreeable drink, which not only assuages the thirst, but has, moreover, strong antiseptic and anti-diarrhoeal properties. It is called orangeade, and is thus composed: Take of dilute sulphuric acid, concentrated infusion of orange peel, each twelve drachms; syrup of orange peel, five fluid ounces. This quantity is added to two imperial gallons of water. A large wineglassful is taken for a draught, mixed with more or less water, according to taste. The officers drink this with pleasure. It is being consumed in large quantities daily, and I am convinced it will be the means of warding off a great deal of sickness."—*Mark Lane Express.*

Miscellaneous.

A Farmer on Light Railways.

The following is the conclusion of a letter from Mr. William Robertson, of Bentinck, on the subject of railways to Grey and Bruce. The whole letter is too long for insertion; we can merely find room for the concluding paragraphs. He says:—

"I went to Walkerton with my mind prejudiced against a central narrow gauge railway, and resolved to oppose it with all my might, and I now return its friend and firm advocate.

"Facts are chiefs that winna ding.' And after hearing the convincing statements of Messrs. Boyd, Chisholm and others, unrefuted and unrefutable, I stamped my foot upon my prejudice, and became a convert to the light railways.

I am a friend of the narrow gauge for all the reasons assigned, and for other reasons also.

I believe in the narrow gauge because Toronto merchants will assist in building it, and because it is likely to do more good for the farmer than any other line of railway that can be made to the County of Grey; because its directors will bind themselves to carry cordwood, and the cost of construction could be paid by the farmer in cordwood alone, since the rate of \$3 a cord at Durham would leave a net profit of at least one dollar on every cord of wood now standing in our forest. And when George Jackson tauntingly declared, that day at Walkerton, that the farmers of Grey did not need to sell their cordwood, and that they had enough to do in winter to haul away their grain, and were above hauling wood, and that if Toronto wanted wood they might send emigrants to chop it, he declared to you what he knew was not the truth. For no man knows better than George Jackson that even our very best farmers, in the vicinity of Durham, are very glad to deliver cordwood at \$1 25 a cord, and that it takes it all to make ends meet. And instead of needing emigrants here to chop it, he sees our young men grow up and leave the country, often never to return, and solely because they cannot find employment here at home. The cordwood, therefore, is a very important item among the bush-farmers of Grey. But, George enjoys the confidence of the people, and can, therefore, take the liberty of thinking or acting for them as he sees fit. I will support the Central, because its directors will bind themselves to carry wheat from Durham to Toronto for the same rate that is now charged from Angus, whereas, at present rates, we may expect to pay at least twelve cents by the Grey and Simcoe and Northern. And, finally, I will support the Central because its traffic is likely to increase as the country is cleared up, and will, therefore, become a source of profit to all interested in it. Whereas, I fear, the Northern extension, from Angus to Durham, would only benefit a few speculators for a time, then leave itself a burden upon its shareholders."

WELL DESCRIBED.—A correspondent of a Philadelphia paper describes the Paris Exposition building as follows:—Take a round of gingerbread with a hole in the middle. The hole represents a garden. Around the hole describe with a knife, eight or ten circles; each of these is an aisle running quite round the Exhibition. Across these concentric circles draw, from the hole to the circumference of your gingerbread, thirty or forty straight lines or radii. These separate the nations. Now, if you want to look at machinery, being a machinist yourself, begin with the great outer ring or circle, and you will pass, in their order, the machineries of every nation. The second interior ring is devoted entirely to turniture. Go round it and you can study the upholstery of mankind. The third ring is devoted to clothing. Follow this round, and all the fashions of the world and the wearers will be demonstrated.

A PITMAN'S VIEW OF THE QUEEN.—"Hooray! hooray!" oi shouted; for oi was wat yow call transported. T' Queen, oi do believe, seed me, for she looked at me, and shook her handkercher. When t' Queen was gone, oi looked down, for oi am higher than Molly, and oi siz. "Wat do yow think on't, Molly?" and she was a cryin'. Sez oi. "Did oi stamp your toes, Molly?" for oi thowt p'raps oi might ha' dun so in my joy. She sez, "No." "Then" sez oi, wat are yow a cryin' for? "Oi' doant know," sed she; "but if oi ha' sin t' Queen, oi am cryin' because oi am glad; and if oi ain't sin her, oi am a cryin' because oi am sorry." "Oomans tears is queer things." "Not sin her," sez oi. "Molly, why that was hur. hat stout, motherly-lookin' ooman, jest the thing for a queen; for her face sez that she's got a mother's

hart, and that she looks on us all as bein' her lads and wenches." "Was that hur?" sed she. "Why she was dressed plain." "Plain," sez oi, "Molly," and oi put on such a look. "Plain," sez oi, again; and oi stopped, for it was a solemn subject, and oi wished to make a impression. "Would yow ha' hur dressed anything but plain?" She ain't cum hero tew day as t' big folks queen; she is cum as t' people's Queen. If she'd a cum all goold and feathers, the big folks would ha' sed, 'She's ourn'; but she's come jest t' way to say tew us, 'Oi loike yow, mol lads and wenches, as well as oi loike others.' "God bless her," sez oi, "and, Molly, oi feel that if any body was a goin' to hurt hur, that oi should let yow go home alone, and oi should fought for her until oi could neither see nor feel."—*All the Year Round.*

IRISH CREDULITY.—It is impossible for any one who knows anything of Irish character not to feel the greatest respect for many of its traits; but it is equally impossible not to feel some degree of contempt, and a much higher degree of pity, for its exhaustless credulity. It is inexpressibly sad to see with what systematic and unvarying simplicity the great mass of the Irish people permit themselves to be duped out of their earnings, their sympathy, their liberty, and their lives, by a small clique of unprincipled knaves, long after the real character of their schemes has been made perfectly apparent to every man of common sense. The Fenian swindle offers the latest and most glaring illustration of this weakness. After robbing the Irish of millions of their hard earnings, plunging scores of them into dungeons and their families into misery, bringing disaster and disgrace upon hundreds and thousands of their dopes, the leaders of this movement continue with shameless impudence to levy contributions in the name of Irish freedom upon the great body of their countrymen, for their own selfish indulgence. One of the head-centres, Stephens, has been living for some months in Paris in indolence and luxury, and now it is announced by the leading political organ of the movement that the other head-centre, "President Roberts," has gone abroad, as the ambassador of the brotherhood, to "organize alliances" with Mazzini and other helpless Red Republicans of the Continent. Funds are of course forthcoming from the exhaustless treasury of Irish liberality, being drawn with remorseless cruelty from the earnings of Irish servant-girls and day-laborers, to support this mythical and ridiculous mission. This is probably the last we shall hear of "President Roberts" as an active agent of Irish freedom. He will settle down in Paris by the side of his illustrious predecessor, t'other head-centre.—*New York Times.*

Advertisements.

McDOUGAL'S SHEEP and LAMB

DIPPING COMPOSITION!

Is entirely free from arsenic, mercury, or other poisonous ingredients, destroys lice and ticks and gives the skin a healthy tone. It is now used by the first stock masters in Great Britain, and sold by the subscriber, and at the Brant Hotel, Brantford, and Bishop's Hotel, Woodstock, in cans for twenty-five sheep, with instructions to use.

PRICE, 80 cents per Can.

MARTIN COLLETT,

483 Yongo St., Toronto.

500 STOCKS OF BEES WANTED!

To any person sending to Whitby Station a good stock of bees free of charge, safe arrival guaranteed, I will in return send free of charge, one of my First Prize Double-boarded Bee hives, including right to make. Price \$0. I will also take in exchange for Territory, good Stocks of Bees or a good Horse and Buggy, and will not refuse Money.

ITALIAN STOCKS.

Having received all the orders for Italian Stocks that I am able to fill without extra expense, the price after this date will be as follows: In the Single-boarded hive, including right to make, \$18. In the Double-boarded hive, including the same, \$20.

ITALIAN QUEENS.

My Italian Queen, imported from Lake Maggiore, Italy, has arrived. She is a large, fine queen, breeding beautiful light coloured queens, even to the third generation.

N.B.—This is the only queen in Canada imported from Italy. Persons who desire to secure queens bred from her this season would do well to send in their orders at once. Price of queens bred from her, and ordered to be shipped in July, \$7; after that \$5. Queens bred from last year's importations and guaranteed pure, \$5. Orders for Stocks, Queens, Hives, Books, &c., will receive prompt and careful attention, addressed to

J. H. THOMAS, Apianian,
Brooklin, C. W.

74-12 11

1867.] HARVEST. [1867. REAPING AND MOWING MACHINES.



THE SUBSCRIBER will be able to supply from twenty-five to thirty more of his

“BALL’S OHIO COMBINED MACHINES,” IN TIME FOR REAPING.

The DIPLOMA was awarded to me for best Combined Reaper and Mower at Provincial Exhibition in Toronto last year.

SPECIAL TERMS GIVEN ON THIS LOT.

Stratford Agricultural Works, 24th July, 1867.

v4-15-21

JOS. SHARMAN.

PROVINCIAL EXHIBITION OF THE AGRICULTURAL ASSOCIATION OF UPPER CANADA, TO BE HELD AT KINGSTON, On the 24th to 27th September, 1867.

PERSONS intending to exhibit will please take notice that the Entries of articles in the respective classes must be made with the Secretary at Toronto, on or before the undermentioned dates, viz:

Horses, Cattle, Sheep, Swine, Poultry, on or before Saturday, August 17th. Grain, Field Roots, and other Farm Products, Agricultural Implements, Machinery and Manufactures generally, on or before Saturday, August 31st.

Horticultural Products, Ladies' Work, the Fine Arts, &c, on or before Saturday, September 14th.

Prize Lists and Blank Forms for making the entries upon, can be obtained of the Secretaries of all Agricultural Societies and Mechanics Institutes throughout the Province.

HUGH C. THOMSON,

Secy. Bd. of Agriculture.

Toronto, July 24, 1867.

v4-15-11

MILLER'S INFALLIBLE



TICK DESTROYER FOR SHEEP!

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

It is put up in boxes at 35c, 70c and \$1 with full directions on each package. A 35c. box will clean twenty sheep.

167 King Street East.

HUGH MILLER & Co Medical Hall, Toronto

v4-14-11

THE STRAWBERRY, “IRON DUKE.”

M. R. GRAYSON having a few young plants of the above to spare will dispose of them according to priority of orders at the following prices, viz 12 plants, \$5, 6 plants, \$3, 3 plants, \$2 St. Catharines, Ontario, July 23, 1867.

v4-15-11*

THE CANADIAN LAND & EMIGRATION COMPY CONTINUES TO SELL GOOD FARM LOTS IN THE TOWNSHIP OF DYSART, IN THE COUNTY OF PETERBOROUGH, AT FURTHER LOW RATES.

Good Settlement, Crist and Saw Mills, Post-Office, Stores, &c.

For particulars, apply to the Secretary,

CHAS. JAS. BLOMFIELD,

v4-14-11. BANK OF TORONTO BUILDING, TORONTO.

Markets.

Toronto Markets.

“CANADA FARMER” Office, July 30th, 1867

The produce market is entirely without animation. There are no buyers to be found for even the smallest lots; every one seems more or less afraid to hold either flour or wheat.

Flour.—The market is very dull, there is no disposition to invest beyond the pressing wants of consumers. In the total absence of transactions prices are entirely nominal. No. 1 superfine is held at \$7, extra and superior are nominal, with none offering.

Wheat.—The market is very dull, with little disposition amongst buyers to operate. Car lots, Spring, are in rather better demand, and choice samples would bring \$1.40. Sales of car lots, mudge proof, have been made at \$1.60 and a small lot of Fall changed hands at \$1.60, street prices \$1.30 to \$1.40 for Spring, and \$1.45 to \$1.60 for Fall.

Oats.—The market is quiet with nothing doing in lots. A few car loads were offering at 50c with buyers offering 48c, but no sales were effected. On the street market from 48c to 50c were the ruling prices.

Barley.—On the street market prices have ranged from 55c to 60c, with very light receipts.

Peas.—Street market, prices ranged from 65c to 68c.

Potatoes.—Receipts liberal, prices unchanged, 25c to 40c.

Wool.—There is nothing new in the market, and the condition last reported still continues. Prices range from 25c to 29c.

Hay and Straw.—Hay, new, \$7 to \$10, old, \$10 to \$12. Straw, \$6 to \$8.

Guelph Markets, July 23.—Fall Wheat per bush \$1.60 to \$1.60, spring wheat do, \$1.20 to \$1.40. Oats do, 50c to 63c. Peas do, 60c. Barley do, 45c to 50c. Wool, 29c to 30c. Eggs per dozen, 9c to 10c. Butter, per lb, 11c to 12c.

Hamilton Markets.—Fall wheat per bush, \$1.25 to \$1.35, spring wheat, \$1.60 to \$1.65. Barley, 45c to 65c. Oats, 48c to 60c. Peas, 65c to 60c. Corn, 65c to 70c. Potatoes per bag, 50c to 62c.

London Markets.—Fall wheat per bushel, \$1.00 to \$1.20 for inferior; \$1.40 to \$1.55 for extra; spring wheat, \$0.90 to \$1.45. Barley, 40c. Peas, 45c to 60c. Oats, 47c to 48c. Corn, 60c to 60c. Potatoes, 75c per bushel, new, \$1.60 to \$2. Butter, primo dairy packed, 11c, No. 2, 9c to 10c, per lb, fresh, in rolls, by the basket, 10c to 12c, per lb. Eggs, 12c per doz. Wool, fleece, 29c to 30c.

Seaforth Markets.—Fall wheat, \$1.45 to \$1.60; spring wheat, \$1.30. Flour, per bil, \$7. Barley, 45c to 60c. Oats, 60c to 65c. Peas, 60c. Potatoes per bushel, 40c. Fresh butter per lb, 12c to 14c. Eggs per dozen, 9c. Wool per lb, 28c to 29c.

Contents of this Number

Table with columns for section name and page number. Includes sections like THE FIELD, STOCK DEPARTMENT, THE DAIRY, VETERINARY DEPARTMENT, POULTRY YARD, CORRESPONDENCE, EDITORIAL, AGRICULTURAL INTELLIGENCE, THE APIARY, CANADIAN NATURAL HISTORY, HORTICULTURE, ENTOMOLOGY, THE HOUSEHOLD, MISCELLANEOUS.

THE CANADA FARMER is printed and published on the 1st and 15th of every month, by the GLOBE PRINTING COMPANY, at their Printing House, 26 and 28 King Street East, Toronto, Ontario, where all communications for the paper must be addressed.

Subscription Price \$1 per annum, (POSTAGE FREE) payable in advance. Bound volumes for 1864, 1865, and 1866, may be had for \$1.30 each. Subscribers may either begin with No. 1 of the present volume, or with the first No. of any preceding volume. No subscriptions received for less than a year, and all commence with the first number for the respective years.

CLUBS will be furnished at the following rates:—

TEN COPIES for... NINE DOLLARS. TWENTY COPIES for... SIXTEEN DOLLARS. FORTY COPIES for... THIRTY DOLLARS. ONE HUNDRED COPIES for... SEVENTY DOLLARS.

To Agricultural Societies ordering more than 125 copies, THE FARMER will be sent at SIXTY CENTS.

THE CANADA FARMER presents a first-class medium for agricultural advertisements. Terms of advertising, 20 cents per line space. Twelve lines' space equals one inch. No advertisement taken for less than ten lines' space.

Communications on Agricultural subjects are invited, addressed to “The Editor of the Canada Farmer,” and all orders for the paper are to be sent to GEORGE BROWN, Managing Director.