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The Field.

Improved Pan for Boiling Maple Sugar.

MR. HARVEY FARRINGTON, of Norwich, who is not only an experienced cheese-maker, but a skillful manufacturer of maple sugar, has called our attention to the merits of a new boiling pan, respecting which he remarks, "too much cannot be said in its praise." It was originally invented for evaporating sorghum syrup, but has been found equally useful in making sugar from the sap of the maple. Having seen this evaporator in operation at some of the State Fairs, where the whole process is exhibited from the crushing of the sorghum cane to the crystallization of the sugar, we sought among our notes and papers, and found a full account of the affair, together with an engraving which our artist has reproduced, and with the help of which the whole thing will be readily understood. Under Mr. Farrington's direction, Mr. L. F. Bungay, tin and iron worker, of Norwich, made one of these evaporators last season, for Mr. Farrington's own use, and it is after actual trial of its merits in the sugar-bush that the emphatic recommendation above quoted has been given. We have received from Mr. Bungay a small model of the pan or Evaporator, which has materially assisted our artist in making the annexed engraving. The entire arrangement as shown in the engraving, consists of a brick chamber, which encases a fire-box; a brick chimney to carry off the smoke; a raised barrel to supply sap to the pan; the pan itself, made of tin, sheet iron, or copper, and crossed by raised ledges with open spaces at alternate ends to produce a lessened flow of the liquid to the outlet; and finally a tub or vessel to receive the syrup when the boiling process is finished.

The philosophy of this Evaporator is embodied in the following principles:—

1. To evaporate with the utmost rapidity. Too long boiling darkens the syrup and injures the crystals.

2. To heat intensely and cool quickly for skimming purposes. This operation secures a more perfect clarification than by the use of chemicals.

3. To remove the syrup from the evaporator upon the instant it has attained the point of crystallization, and yet in such a manner that there is no danger of the syrup scorching after it is deposited in the coolers, as it is liable to do when removed in large batches.

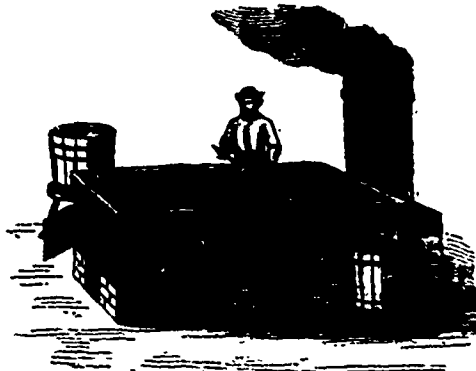
To secure rapidity of evaporation, a very shallow body of juice is used; and, as this shallow body would be liable to burn if not in continual motion, a running stream of juice is introduced. But this would be of little avail were no means provided for increasing or retarding its speed to correspond with the heat, so that it shall always reach the outlet just

as it has attained the right thickness. For this purpose gates are used. By means of these it is easy to change the motion, and thus increase or retard the speed of the current.

Cool surfaces are afforded at the sides, to which the scum will retire, and thus prevent remingling with the sap and injuring the sugar, as is the case in common pans.

The ledges are introduced:—1. To lead the juice back and forth, first, over the heated centre of the pan, then to the cool sides, where the scum is collected. 2. These ledges serve as arrests to prevent the scum passing down the pan into the finished syrup. 3. A great advantage in the use of a transverse current is that the syrup may be safely brought to a sudden and much higher heat than in the common pan, for it is immediately led to the cool side, the scum deposited, and all danger of scorching obviated.

The Evaporating Pan is constructed of sheet metal, copper or iron, with wooden sides, and so divided by ledges as to form a continuous transverse channel.



From the foregoing description any competent tinsmith can make the pan in question, but we have Mr. Bungay's authority for stating that he is prepared to furnish them at the following prices:—

No. 1. Iron, 40 in. by 10½	\$20
No. 2. Iron, 40 in. by 12½	25
No. 3. Iron, 40 in. by 14½	30
No. 4. Iron, 40 in. by 16½	35

We add the following directions for using this Evaporating Pan:—

1. Place the pan upon the arch, perfectly level, and close the outlet with a cloth-covered plug; cover the bottom of the pan with juice. As the juice becomes reduced, draw off some from the lower channels, and return to the upper, until the syrup, in the last channel has become of the right thickness, when the plug may be opened sufficiently to allow of the escape, into coolers, of a small stream.

2. Use good wood, about three feet in length.

3. IMPORTANT TO REMEMBER! The supply of sap should be fully equal to the evaporation, but no greater.

4. KEEP THE FIRE AS HOT AS POSSIBLE. There is no danger of scorching, if the third Rule be carefully observed.

5. So regulate the rapidity of the stream through the pan, by means of the gates, that the syrup will reach the outlet just as it has attained a waxy consistency, when it should be allowed to flow out in a continuous stream. Be careful, in drawing the plug, to open far enough to allow the escape of the syrup just as fast as it is made.

6. Loosen the substance deposited on the bottom of the pan, occasionally, with a stiff broom, that it may rise with the scum, and be removed.

7. SKIM FAITHFULLY. Impurities must not be permitted to remain in the syrup.

8. Do not allow the arch, back of the grate, to become choked with coals or ashes.

9. Do not change the level of the pan suddenly; a slight change makes a great difference in the speed of the current. Persons often imagine they have burned their pan, when they have only burned the deposit from the syrup, with which the bottom is coated. Upon exploration, they will find the pan all right below. This deposit ought never to be allowed to collect or harden, but should be removed with a stiff broom, according to directions. Should it, however, once harden on the pan, it may be removed by a little vitriol, or by greasing it and warming it gently, when it will readily scale off.

The syrup should be most carefully skimmed, and reduced to about 225 to 228 degrees Fahrenheit, or until the steam escapes in little puffs from the syrup in the last channels.

The St. Augustine (Fla.) papers are dilating upon the oranges now hanging in rich clusters on the trees in that delectable climate.

A Connecticut paper states that a farmer that in State built a barn thirty-two years ago, and put a crop of hay into it the same year. Last spring was the first time the last of it was disturbed, the call being so loud that it had to come out. It was as sweet and bright as any ever brought to market.

SORGHUM TARTARICUM SEED.—Major Bruce being desirous of distributing the seed of *Sorghum Tartaricum* as widely as possible, and to encourage the trial of this new source of food supply among the farmers of Canada, will reserve what seed he can spare for free distribution to any who may apply to him. He has authorized us to say that he will send a small quantity of seed to parties who will forward him a stamped envelope with their address written thereon. Applications should be sent before the end of March, so as to enable Major Bruce to calculate the quantity he can spare to each. He proposes sending off the seed during the first week in April. We trust his liberal and disinterested offer will be freely responded to, so as fairly to test the value of this plant. His address is Annan Cottage, London, Ontario.

The Barberry.

Berberis vulgaris.

A CORRESPONDENT sends the following communication and inquiry:—

"It is commonly believed in England that the barberry bush is destructive to vegetation, and particularly to wheat, when sown at all near it. Last year I had wheat in what had been used for many years as a garden; in the corner stands a large barberry bush. The wheat looked alike till it began to ripen, when a sort of blight commenced at the corner near the bush, and gradually extended to sixty or seventy feet into the standing grain, becoming less affected till it ceased altogether; beyond which line the heads were well filled and the grain plump. Have any of your readers seen similar results? if so, it will be well to know them before we plant hedges of it."

This bush, as our correspondent observes, has been believed in England and in other countries of Europe to exert an injurious influence on cereals, particularly wheat, growing within its immediate vicinity. A number of apparently authentic facts have been repeatedly stated that appear to sustain this serious charge against this pretty and useful shrub, which it is confidently affirmed produces, during the period of its inflorescence, rust and mildew in wheat and other grain, at distances varying from close proximity to three or four hundred feet, or even more.

It is impossible to prove an absolute negative in cases such as these, but scientific inquiry and more careful observation have of late years, to say the least, thrown very grave doubts on the charges made against the Barberry, and a growing conviction exists, the result of more accurate knowledge and observation, that they are altogether groundless. As in the instance adduced by our correspondent, and others of a similar character, other trees besides the barberry, the oak and ash in our own experience, have occasionally been seen accompanied by similar results. We have known considerable portions of hedges in arable fields, in England, to consist largely or exclusively of the barberry, without any such injurious effects on the crops as have by others been ascribed to it. Indeed, the bush has been planted and protected in the centre of arable fields for several years, and by several persons, without any injurious results being apparent to the crops in direct proximity.

The late Rev. J. Henslow, Professor of Botany in the University of Cambridge, who took a very lively interest in all matters pertaining to agriculture, to which his own special science was in any degree related, came to the conclusion that the evil power ascribed to the barberry was a popular fallacy. On frequent examinations of cases of this sort, he found that the shade of trees, wetness, or other conditions of the soil, would more rationally account for rust and mildew than the presence of the barberry bush. He observes: "To those who feel as interested as myself in having this question settled beyond dispute, and who may possess the opportunity of doing so, I would suggest the following experiment: Let barberry bushes be planted in the middle of some fields, and protected by fences; let it be observed whether the corn grown in those fields is mildewed, and the circumstances under which this happens accurately noted; let all failures be equally recorded. If the results of these experiments should tell to the prejudice of the barberry, I would willingly travel many miles to be convinced, by personal inspection, that this pretty and botanically interesting shrub had really caused the evil imputed to it."

The late Mr. Knight, the distinguished scientific horticulturist, found wheat sprinkled with water, in which barberry branches had been washed, speedily became infected with mildew; but he also ascertained that wheat sprinkled with clear water became similarly diseased. "The parasite which affects the barberry is not the *Puccinia graminis*; the sporidia are dissimilar, and the color totally unlike; but it may be, and certainly much resembles, the *Euredo rubigo*. It is no objection to say that the identity is unlikely, because the plants attacked are so widely distant; for, as already noticed, these parasites will vegetate on very various and even dead vegetable matters. The parasite which infects the leaves of the barberry is *Aecidium Berberidis*; it is a beautiful minute gastro myces, and there is no resemblance between it and the rust of wheat except in colour. It is a vulgar error to suppose that an *Aecidium* on the barberry could produce a *Puccinia* on wheat.

Storing Root Crops.

MANY farmers are prevented from growing root crops extensively by the great amount of labor, and consequent expense incurred in taking them out of the ground, and storing them for the winter. A large crop of rutabagas, mangels, beets, carrots, or parsnips require much labor to handle them properly and secure them from the frost. In the mild climates of Great Britain and Ireland, France and Germany, root crops are always brought to the farm-yard as soon as they are taken up, and stored in sheds, or made into roof-like piles in some secure place, and thatched with straw. Even there it is injurious to roots to be frozen and thawed in the open air, but if they are frozen and thawed under cover they do not suffer much damage from those causes.

Rutabagas are much harder than beets, mangels, or carrots, and will not be damaged by slight frost, but it is a good plan to leave them in the ground until they recover from the check which an early frost may have given them. This they will do in a few days of mild weather, as long as the leaves are green. A bulb of any kind cannot bear even a slight frost, deprived of the protection of the leaves. When sheep are folded on turnips, they are confined to a certain spot by hurdles or rails, so that they make a clean finish of the tops and roots as they go along, without stripping off the tops and rinds in patches all over the field; as, in the latter case, the greater part of the crop would be destroyed by frost and rain.

The bulbs of rutabagas, and of all other varieties of turnips, increase rapidly in size and weight when the leaves have done growing. These crops should be sowed early enough to admit of the bulbs being matured before frost checks the growth of the plants. One acre of well managed rutabagas will produce as much as two or three acres managed in the ordinary way.

A field of rutabagas, managed in the ordinary way, without any after culture of the crop, except singling or thinning, will probably produce bulbs four or five inches in diameter, while the same field, by careful after culture, such as frequent cultivation of the soil between the drills, and hoeing between the plants, will produce bulbs six or seven inches in diameter, thus trebling or quadrupling the acreable product.

When storing rutabagas, it is well to weigh some of the largest bulbs and some of ordinary size, and ascertain the great disparity between them. If rutabagas are grown in drills, twenty-eight inches asunder, plants ten inches apart, there will be 22,402 bulbs in an acre, which, at three pounds each, amount to a little more than thirty-three tons per acre; increase these bulbs one pound each, and the produce will be forty-four and three quarter tons per acre. Increase the size to five pounds each, and the produce will amount to fifty-six tons per acre.

As it is not expedient to take up rutabagas before they have done growing, nor to delay until they are damaged by frost, there is but a very short time for performing the operation, and as it may not be possible to bring them to the barn-yard from a distant part of the farm, the best plan will be to pile them in the field where they grow, selecting elevated spots, where they will be above the reach of water. If the field is large, several roof-like heaps may be made, and covered with the tops, or with earth or straw, according to circumstances. If properly secured, these heaps may be allowed to remain in the field until they are needed for stock, or they may be transferred to some more convenient place, when horses and men can be spared better than at the time the roots were taken up.

Mangel wurzel is very nutritious food for cattle or sheep; it is specially adapted for feeding milch cows, and on this account is highly esteemed by dairy farmers. The leaves make very good fodder for stock, and also are useful for feeding store hogs, but they should not be removed until the roots are about to be taken up, for the latter cannot stand a very slight frost in the absence of the leaves.

Mangels are very tender, and should be handled with the greatest care. If the roots are flung carelessly one over the other, the bruises which they receive will cause them to rot. They may be safely kept throughout the winter by piling them in the manner recommended for rutabagas. Holes for ventilation should be left in the top or sides of the heap, and kept stopped with straw or hay. A covering of straw, with six or eight inches of earth over it, is the most approved manner of protecting roots in winter, in the absence of a root house or capacious cellar.

In Alderney, Jersey and Guernsey, where parsnips are raised in large quantities for feeding milch cows in winter, the roots are boiled and then pressed compactly into barrels and boxes. It is said that roots managed in this way keep for a long time, and are relished by cattle. A small quantity of salt is mixed with them.

Parsnips are perfectly hardy, but in order to have them accessible for feeding stock, they should be kept in pits or piles, in some convenient place, and covered with earth or straw. Carrots are tender, and cannot stand frost.

Cabbages are very nutritious food for cattle, and every farmer should have an abundance of them. They may be safely kept by pitting them, like potatoes, and covering them completely with earth, or in the usual way, by covering the heads and leaving the stems exposed. When managed in either of these ways, they are not accessible at all times in winter, and a temporary supply should always be kept in the root house, in barrels or large boxes, covered with straw.—*Western Rural.*

Spreading Manure in Winter.

THE following extract from the *Country Gentleman* is in accordance with advice that has repeatedly been given in the columns of the CANADA FARMER:—

There is but one object in allowing large piles of manure to accumulate in barn-yards during winter, namely: for the purpose of working down the fibrous material intermixed through it in the form of straw or cornstalks, to be applied next summer or autumn. Manure intended for spring crops should be drawn out and spread now, for several reasons. There is usually more leisure on the part of the team and teamster, and it is desirable to give winter employment to hired men. The loads of manure may be more easily drawn over the frozen ground than when it is wet and soft in spring, and grass land is not cut up or injured in this way. The manure, being spread upon the surface, is dissolved and carried into the soil at every thaw or rain, and is thus finely diffused through the particles. The remaining fibrous portions are then ploughed under, if it is intended to plant or sow a crop; or they remain as a partial and thin mulch upon the surface of grass lands. It is obvious that for the last mentioned purpose, the manure should be very evenly spread, and no lumps permitted to remain to obstruct the mowing machine. It is especially important, on three accounts, that manure on ploughed or stubble ground, which it is intended to plant or sow in spring, should be spread in winter. The ground is not injured by the sinking of the wheels; the manure is more perfectly diffused than could be effected by harrowing; and an amount of time is gained for early sowing, equal to the number of days required to draw out and spread the manure.

We often hear the objection that the manure will wash away and be lost. We have found this objection to be groundless, unless it is spread in the bottoms of hollows or swales and in channels of streams. As soon as snow melts or rain falls, there is always enough of frozen soil at the surface to absorb the dissolved manure. Even when placed on steep hillsides, we have never found the enriching effects of the manure to extend down the surface more than three feet on grass lands. Those familiar with the process of irrigation are aware that the large quantity of water, used for this purpose, has its fertilizing portions quickly abstracted from it by the grass among which it runs. The same result is more thoroughly produced when the water comes down upon the surface, not as a flowing current, but merely in minute rain drops.

As corn is planted later in the spring than some other crops, it may seem less necessary to draw out the manure in winter; nevertheless, after several years' trial, we have become satisfied that winter manuring is much better than applying just before the ploughing is done, at the same time that the injury to the soil in spring, by drawing heavy loads upon it, is avoided.

Cultivation of Flax in 1868.

THE *Northern Whig* (Belfast), in an excellent article on "The Prospects of the Linen Trade," gives the following advice to farmers regarding the cultivation of flax during the coming season:

The great difficulty under which the linen trade suffers is the dearth of flax, and the chief remedy for this is to increase the average yield per acre. No doubt improvements can be effected in every portion of the preliminary operations, from the selecting of the seed and the managing of the ground down to the scutching. We are, however, disposed to attach equal importance to the careful selection of the most suitable soil for the growth of flax; and, to secure this, we believe the area over which flax is grown must be further increased, so that only the best ground may be used, and only such a proportion of this best ground as will allow of a due rotation of crops, and prevent the farmer from being

seriously injured should his crop in any particular year turn out a poor one. We are glad to know that in the counties bordering on the flax districts in Ulster there has been, year by year, a steady increase, and we hope that this will continue.

There is another consideration which we have to urge upon the farmers. The flax crops of the last few years have been inferior, and this inferiority can be accounted for by simple natural causes—bad seed, unsuitable ground—ground on which flax had been very recently sown being again sown with flax, unfavourable seasons, &c. The lesson to be learned from this is clearly to avoid these errors—to use good seed, and to sow it in suitable ground, &c. With these precautions there can be no doubt that the farmers can keep up or increase the acreage of their former crops of flax; and there is nothing in the present state or prospects of the linen trade to lead us to suppose that the farmers will not get in the future good prices for their flax. The trade is a steadily increasing one, and, in spite of the reaction which naturally follows a period of great excitement, its condition is essentially sound. Its extent and volume must necessarily be far greater than in the years before the American war; and whilst we would, as we have always done, caution the farmers against sowing flax on unsuitable ground, or in excess of what under a due rotation of crops they should sow, we would, on the other hand, equally caution them against not sowing it on account of any cry that the mills are on short time. We have no fear of the future of the trade; and we are certain that the farmers, by taking a calm view of the whole question, will best consult their own interests.

A Cheap Stump Puller.

THE *Country Gentleman* gives the following description of a cheap stump puller, invented by Mr. H. M. Rogers, of Kenosha, Wisconsin:—

"I bought two screw jacks, and I had a stout log chain. These jacks have one and one-half feet lift, working in cast-iron pedestals. I procured a stout beam, eight feet long, and about as heavy as two men would want to carry, and two pieces of plank for the jacks to stand on, together with some blocks, &c., and all was ready. I place the beam across the largest and stoutest root of the stump, one jack on each side, and as near the stump as I think the roots will allow, and resting on a piece of plank. The chain is passed around the root and the beam. One man at each jack will raise almost any stump to the full lift of the screw, which, in a majority of cases, is sufficient; if not, place a stud under each end of the beam; let down the jacks, and placing blocks under them, give the stump another lift. Two men will pull from thirty to fifty stumps a day, and the machine will cost fifteen or twenty dollars, while the jacks are useful for many purposes besides pulling stumps, and would be saleable at any time.—There is no patent on this puller."

Renovating Grass Lands.

AN Allegany correspondent of the *Rural New Yorker* furnishes an interesting statement of his experiments in renovating meadows where dairying is the principal business, and where it is desirable to keep the land most of the time in grass. Meadows there become greatly diminished in their crops, in a few years. He tried harrowing the surface, top-dressing with manure, re-seeding, plastering, applying ashes, &c., with little effect. He harrowed one-half of an eight-year meadow after manuring it in spring, and had an increase of twenty-five pounds of hay per acre. Sheep manure applied in fall, on a new meadow, gave an increase of 100 lbs., per acre. Discarding these modes, he next turned the sod with a good plough, and re-seeded to clover and timothy after the first crop; what this crop was he does not state. He has thus renovated seventy acres, rolling in the seed. An old twelve-acre meadow yielded but six loads, after renovating as described, the first crop was twenty-six loads, the next twenty-four. In four years, he ploughed again, seeded with four and a half loads of manure per acre, and harvested fifty bushels of oats per acre, and the next year forty-one loads of hay from the twelve-acre lot.

It will be seen that his manuring was not heavy. The application made in spring in a former experiment, resulted as we should expect, especially if thinly and unevenly applied at that season of the year. Autumn manuring, uniformly and evenly made, is much more efficient. But it must be admitted that inverting the sod on dry uplands, is the most perfect way of restoring heavy crops, a full amount of grass seed being used. Manure must be applied freely, if only a single year is taken for this renewal; but if two more years can be added, so as

to turn in a heavy crop of clover in a short rotation, there is no question that a great improvement would be made. It must not be forgotten that one great objection to ploughing and re-seeding grass fields, is owing to a sparing use of grass seed, and an imperfect preparation of the surface for it. Sow thickly, say a peck or more per acre, on a smooth, mellow, finely top-dressed surface, and a dense, heavy growth of grass will be the result, much better in quality than that afforded by large, coarse, thinly-scattered stems. Some successful graziers inform us that they have succeeded in restoring meadows after cutting four or five crops of grass from them, by pasturing them with cattle for two or three years, taking care never to graze them short, but allowing a growth of grass at least eight or ten inches high, and especially in autumn and on the approach of winter.—*Country Gentleman*.

VALUE OF FODDER FOR MANURE.—Joseph Harris, of Rochester, whose opinion is entitled to confidence in these matters, estimates wheat straw worth three dollars a ton to manufacture into manure. He also remarks (in the *Agriculturist*) that the value of manure depends much more upon the food than on the animal; and that if a cow or a sheep or a horse is fed on clover hay, the manure from a ton is worth as much, if not more, than the hog manure made from a ton of corn. If he has 30 tons of straw, 50 tons of corn stalks, 40 tons of hay, 2 tons of bean straw, 1,000 bushels of corn, and 10 tons of oil cake, to feed out on the farm during the next six months, it will make no appreciable difference in the value of the manure, to what kind or class of animals he feeds it.

SIZE OF POTATO SETS.—Mr. Maw, of Cirencester, England, has been experimenting on the size of potato sets with the following results:—Every increase in the size of the set, from one oz. up to eight oz., produces an increase of crop much greater than the additional weight of sets planted. The net profit in using four oz. instead of one oz. sets, amounted to between three or four tons per acre, and the further profit, from four to eight oz., averaged about five tons. The advantage of large sets was more marked in late than in early sorts. Small sets yield best when planted close in the rows, say from six to nine inches, and in no case should the distance exceed twelve inches. Weight for weight, cut sets produce the same weight of crop as whole potatoes.

Veterinary Department.

The Hock Joint and its Diseases.

The hock in the horse may be regarded as the most important and complex joint of the body. It is a joint on which there is great weight and strain on severe exertion of any kind, and owing to the complexity of the arrangement of the various structures entering into its formation, it is liable in a corresponding degree to many injuries and diseases. There are no less than ten different bones wholly or in part situated in the hock, and six of these are known as the bones proper of this joint; they are the astragalus or knuckle bone, the os calcis, the cuboid, and the three cunei-form or wedge bones, viz.: the magnum, medium and parvum.

The knuckle bone is situated immediately below the thigh bone, and is a remarkably strong bone, having a large pulley-shaped surface superiorly, consisting of two large prominences with a very deep groove between, the whole being beautifully adapted to the grooves in the lower part of the thigh bone (tibia), and this articulation forms, so to speak, the true hock joint, the motion thereof being limited to flexion and extension. The os calcis is the bone that projects backwards and outwards from the hock, ending in an oblong flattened tuberosity, familiar to horsemen as the point of the hock, and to which is inserted a large tendon. This is a very important part, because the longer this process is the longer is the lever the muscles have to act by, and consequently horses in which this process is well developed are not so liable to injury and disease as others with but a short prominence of this bone. The inner side of the projecting part of this bone has a smooth concavity, giving passage to the tendon of the flexor pedis muscle, or that which bends the foot. The cuboid or cube bone is situated on the outer

part of the joint; it is an irregularly shaped and strong bone, and joins or articulates with the astragalus, the large and middle-sized wedged bones, and the large shank bone (metatarsal) and outer small metatarsal.

The large wedge-bone has a smooth concave surface on its superior part, in the centre of which there is a small groove, and on this surface rests the knuckle bone, whilst the under surface rests on the middle wedge-bone (cuneiform medium), which is of a similar shape to the large, and this bone rests upon the shank bone (metatarsal); its anterior or front border is prominent and is roughened for the attachment of ligaments. The cunei-form parvum is the smallest bone of the hock, is situated on the inner side, and rests principally upon the inner metatarsal bone; its upper surface comes in contact with the large wedge-bone, and the inner border is attached to the middle one.

The bones of the hock are retained in their position by numerous ligaments. In front of the hock is the anterior annular ligament, which binds down the tendons; on the back part is the posterior annular ligament. The lateral ligaments are strong, the outer presenting two divisions, whilst the inner has two; and there are a number situated between the several bones of the hock; these are called interosseous ligaments. Stretching from the back part of the os calcis and also slightly attached to the cuboid bone, and becoming inserted in the external small metatarsal bone is the superior straight ligament (calcaneo cuboid) of the hock; this part we believe is the primary seat of curb. In this joint there are also six capsular ligaments, the principal of which is one between the knuckle bone and the inferior extremity of the tibia. There are various tendons which pass over or are connected with this joint, they are the tendons of the gastrocnemii muscles, one of which becomes attached to the point of the hock, the other passing over it. The extensor pedis passes over the front of the hock, as do also the flexor metatarsi, peroneus, &c.

A common injury to the hock-joint is sprain of the joint; this is a frequent occurrence at this season of the year, from slipping, or from being driven rapidly through deep snow. The ligaments are frequently primarily injured, inflammation is set up, which very soon extends and involves the other tissues, and if the horse is forced to work, it frequently produces other diseases, as spavin, &c. The symptom of sprain in this part is lameness; the horse steps short in his walk, and when forced to trot he raises and depresses the croup; when standing he flexes the limb, thereby endeavouring to place the injured joint in an easy position. Generally there is a swelling of the joint, which is most observable on the anterior and internal part; and there is also increased temperature, which can be easily noticed by comparing the injured with the healthy joint.

The degree of lameness may vary considerably; in some cases the horse can scarcely put his leg to the ground, whilst in other cases the lameness is very slight, and when an animal is excited or warmed up to his work it almost disappears. In all cases of sprain in this region, the horse should have complete rest; he should be placed in a box or stall; the parts should be well fomented with warm water for a couple of hours, twice a day, and immediately afterwards enveloped in a warm flannel bandage. Fomentations are useless unless applied for a considerable time and the parts are afterwards kept warm. In a few days a mild stimulating liniment is beneficial, as the common camphorated liniment, applied three times a day and well rubbed into the parts. If sufficient rest is not given, this injury frequently runs on to an incurable disease. Blisters are occasionally required, but should not be too early applied. In all cases of sprain of the hock, after recovery the horse should be used very carefully, and put only to light work for some time, to allow the parts to regain their former integrity.

Stock Department.

The Smithfield Club Prize Ox.

THE fame of Mr. McCombie's Prize Ox, "Black Prince," has now become world-wide, every one has heard of it, and not a few, if they have not seen the animal himself, have been made acquainted with his appearance through the fine portrait given in the *Illustrated London News*. Many of our readers, indeed most of them, perhaps, unless they happen to live in the vicinity of our large towns, have not the opportunity of seeing that famous and interesting periodical; we have, therefore, procured a faithful copy of the portrait from that foremost English pictorial journal, and now present our readers with the accompanying spirited illustration, which will give a good idea of his bulk and proportions; and if they fail to see

object of his ambition, the Smithfield bullock cup, as a match on his sideboard to the Albert cup from Poissy. Thanks to that long and careful preparation, which he and his man John understand so well, the heavy black not only looked quite fresh, after his railway toils, but all the handling and worrying which he received from the spectators—who had him in a regular state of seige, until Mr. Giblett, like another Havelock, arrived to the relief of Lucknow with hurdles and a policeman—failed to make him shrink more than an inch in his girth, which was still 9 ft. 10 in. when he was led away to the block. He was purchased by Messrs. Lydstone & Scarlett, of New Bond Street, for £120. This ox is (or rather was) nearly three months short of five years old, and his prize money, cups, and price combined, amount to nearly £100. He first appeared as a yearling, and won at the Royal Northern Meeting at Aberdeen, and last August he took the fifty guinea challenge cup there.

stone & Co. were obliged to lay a prior claim thereto; and the tail will in future adorn the interior of their shop.

There was one enthusiastic butcher who patted the fat sides of the patient animal, and declared that since he was "rocked out of a cradle into a slaughter-house" he had never seen a finer ox.

When alive, Black Prince weighed 2,588 pounds; and his dead weight was found to be 1,963 pounds. The baron weighed 632 pounds; and special machinery was erected at Osborne to roast it. Notwithstanding the demand, the purveyors sold the whole, including the baron, at 1s. per pound.

SALE OF SHEEP.—The *Guelph Mercury* says Mr. John Ingles, an old Scotch shepherd, who resides in the township of Carrick, sold in December 100 fat sheep for the New York Christmas market, for which he obtained the sum of \$745.



MR. McCOMBIE'S PRIZE OX, "BLACK PRINCE"

much beauty in the form, that is doubtless the fault of the original, for whom his most enthusiastic admirers will scarcely claim the merit of graceful symmetry. The same journal to which we are indebted for the portrait furnishes the following account:—

"McCombie's Poissy ox," 1862, is fresh in the memory of our agricultural readers, home and foreign. This eminent Scottish feeder is, however, no "single speech Hamilton," and he has now brought out one of his own breeding from Tillyfour, which is quite worthy of standing by its side. Mr. McCombie sent fat beasts to the Smithfield Club and Birmingham Shows as early as 1840; but it was not until 1859 that he and his black brigade became a leading feature there. In 1859-65 he regularly took the first prize at Smithfield for the polled-Angus bullock, and the first in 1861 for polled-Angus females. That very beautiful heifer not only won the gold medal for him as the best female, but took the cup as the best beast in the yard at Birmingham, where his bullock firsts are about equal to those at Smithfield. In 1866, his hand was weak; but this year he renewed his strength, and, bearing down from Aberdeenshire with his challenge cup prize ox, he at last gained the great

Another English paper gives the following additional particulars respecting the slaughter of this famous beast:—The great black ox, bred by Mr. McCombie, which carried off all the honours at the Birmingham and London shows, was slaughtered by Messrs. Lydstone & Scarlett, of New Bond Street. When it became known that Her Majesty, after seeing the animal at Windsor, had ordered the baron, there was considerable anxiety manifested by the customers of the firm to have some portion. Gentlemen who had been accustomed to order four pounds of beef at a time wrote, threatening to withdraw their custom if a rib were not reserved for them. They were, however, easily satisfied with a more modest portion, when they learned that a rib would weigh twenty pounds.

A few gentlemen met in the slaughter-house in Southmolton Lane, to see the prize beast killed. Here a considerate butcher explained that the Queen's baron consisted of the two sirloins, the two rumps, and two aitch-bones. The head had been reserved by Mr. McCombie, who had given special instructions to a furrier for its preservation. The tail and hair were claimed as "drover's perkies," but Messrs. Lyd-

The Dairy.

Canadian Dairymen's Association.

THE first annual meeting of this important organization, formed July 31, 1867, was held in Ingersoll on Wednesday and Thursday last, February 5th and 6th, pursuant to the call of the Executive Board. The President, C. E. Chadwick, Esq., of Ingersoll, called the Association to order at 11 a.m. on the 5th instant, when some 100 dairymen were present from various parts of Ontario. A large attendance being expected by the noon trains, the only business transacted was the appointment of the following committees:

1. Committee on the nomination of officers.
2. Committee on the order of business and programme of proceedings.
3. Committee on finance.

The Association then adjourned until 2.30 p.m.

At 2.30 a much larger assemblage had convened, arrivals from east and west having well nigh doubled the number of delegates in attendance. The Presi-

dent, in calling the meeting to order, made some introductory observations as to the objects, progress and prospects of the Association. This movement had undoubtedly been of benefit to the dairy business, and he believed it was destined to be yet more useful in time to come. He had attended, in company with Mr. Farrington, the recent Dairy Convention at Utica, where they had received the utmost courtesy as delegates from this Association. The Utica meeting was well attended, and the interest shown was very great. Much useful information had been brought out by such meetings, and the opportunity they afforded of comparing views and experiences was very valuable. The Utica convention showed that a large number of the ablest New York agriculturists were engaged in the dairy business. The manner in which the various subjects were handled showed that not a stone was left unturned which could add to the importance and success of their enterprise. Since the last meeting of this Association, the Secretary and himself had done all they could to advance the interests of the Association by obtaining such statistics and information as they could from the different factories. Many of these had answered the questions sent them in the most satisfactory manner, but he was sorry to see the reluctance displayed by some factory-men to furnish returns to the Association. It was highly important that facts and figures should be put in the hands of dairymen. The knowledge obtained by Mr. Willard when in Europe had been of the greatest service to the cheese business of this country. He hoped efficient means would be taken to obtain statistics both at home and abroad. They had been trying to get a Bill passed by the Legislature of Ontario for the protection of cheese factories. It was nearly through, and he expected would soon become law. He relied on the meeting to give him its support as chairman, and felt sure that the most perfect order would be maintained.

Reports of committees were then received.

The committee appointed to nominate officers for the ensuing year reported the following list:

President—C. E. Chadwick, Esq.

Sec. and Treas.—James Noxon, Esq.

Vice-Presidents—M. H. Cochrane, Montreal; Henry Wade, Port Hope; T. H. Wilmot, Milton; A. G. Muir, Grimsby; Geo. Hamilton, Mitchell; G. H. Scott, Lobo; Harvey Farrington, Norwich; James Harris, Ingersoll; Benjamin Hopkins, Brownsville; Geo. Galloway, West Oxford; Richard Manning, Exeter; Josiah Collins, Dereham; Stephen Hill, Paris; John N. Raynour, Cedar Grove; K. Graham, Belleville; John Adams, Ingersoll; P. Bristol, Hamburgh; J. M. Jones, Bowmanville; H. D. Reesor, Markham.

The committee on the order of business reported the following subjects for discussion at the convention:—

1. Purity of flavour in cheese, what are the requisites, how best procured?
2. Are curd mills beneficial, and would their general use be advisable?
3. What constitutes the superiority of the Cheddar system of cheese-making, and could it be adopted with advantage in Canada?
4. Statistical Circular—could it be made useful in equalizing and maintaining the last price for cheese the current year?
5. How long is it desirable to press cheese? Would two or more days improve the quality or texture?
6. Is it not practicable to adopt the American system of making cheese once a day, and would it be preferable to making twice a day, as practised by our factory-men?
7. Best stock for dairy purposes.
8. What is the best hour and plan for milking?
9. What kind of salt is most suitable in cheese making, and how does the Goderich salt compare with the Liverpool dairy salt?

The committee also recommended that the address of X. A. Willard, Esq., be given this evening at half-past seven; and as that gentleman had kindly offered

to supplement his address by giving the valuable statistics furnished by him to the American Dairy-men's Association to-morrow, the committee recommended that the same be given to-morrow morning at ten o'clock.

The committee on finance reported the recommendation of an increase in the membership fee to \$1.50, to meet the increased expenses of the Association, and to enable them to publish a full report of the minutes of this convention in pamphlet form.

On motion, the above reports were adopted.

Mr. FARRINGTON wished to know whether each member of the Association was to be furnished with a copy of the pamphlet referred to in the report of the Finance Committee.

The CHAIRMAN replied that such was the intention.

The CHAIRMAN then proceeded to introduce the topics of discussion which had been put on the programme. As these topics had been selected by the Executive Board, and notice of them sent to the members of the Association some time ago, he had no doubt the gentlemen had come to this meeting fully prepared to do justice to the discussion of them.

1. Purity of flavour in cheese, what are the requisites, how best procured?

Mr. FARRINGTON observed that purity of flavour was of the first importance in cheese. Variations of age and lesser defects can be put up with, but there must be a pleasant flavour. In proportion to the importance of it, is the difficulty of securing it. Out of 50,000 boxes received weekly at New York last season, it was difficult to find 200 of really good flavour. The first requisite to excellence in this particular, is—you are all ready to answer—purity of milk. But don't we have this? No. Not even if you milk in the cleanest pails, pails of glass, if you like. Milk is 98 degrees when drawn from the cow. Kept at or near that point, decomposition at once begins. We must arrest this. How? By cooling. The animal heat must be taken out of it. During and after milking something may be done towards this, but after it comes to the factory, means should be taken thoroughly to cool the milk. We want more vats in order to distribute the milk, to spread it out on a large breadth of surface, so as to aerate it. If milk is kept in a large body the heat will remain. Cooling it by water is not enough. Jesse Williams, the originator of cheese factories, had a spring as large as a man's leg for cooling purposes, yet he had sour cheese occasionally. Not water only, but air is needed. Milk must be spread and ventilated. Three things are needed. Clean milk pails, provision for cooling while milking, means of spreading out the milk at the factory. These things properly done, I'll warrant you will make as good cheese as they do in the State of New York. We have as good grass as they have, and there is no reason why we should not equal them if we abolish the wooden pail, and properly cool and aerate our milk. Defective flavour in cheese is by no means peculiar to Canada. The necessity of keeping it on hand a long time last season, owing to low markets, made the flavour worse than usual. American factory-men sold every month or two months during the season, and hence our long kept stocks competed with them at a disadvantage. Another cause of bad flavour is ill-cured rennets. Our butchers are very careless about the way they prepare rennets, and should be taught better. Again, impure salt is blamed by some. I do not attach much importance to this. I have used Liverpool salt, common and factory filled Onondaga, and Goderich salt, with equally satisfactory results. I have had good success with all. Not a single cheese of my manufacture has been rejected by the buyers. Salt is often blamed by cheese makers for their own faults. Another fruitful cause of bad flavour is a tainted atmosphere. This is a hackneyed subject, but it is impossible to say too much about it. Any odour that affects human nostrils will affect the quality of cheese. A pure cheese cannot be made in an impure atmosphere. We want no hog-pens or hog-yards near our factories—no strops, no waste whies—no rubbish—no decomposing matter of any kind near them. We have gone on the principle that if the hog is kept out of the vats it will do. But it won't do. He must be kept out of smelling distance. Nor is this all. The great butter makers in the State of New York find it necessary to banish everything but milk from their milk cellars, to prevent all taint. Equal care is needed to preserve cheese from taint. Mr. Farrington closed by reading a paper he had prepared on the effect of wet seasons on cheese making. During such seasons cheese was more liable to be out of flavour than at other times. He attributed this to the increased development of ammonia in such seasons, which unfavourably affected the milk.

Mr. JAMES HARRIS observed that he was no public speaker, yet he had a few words to say on the question before the Association. Is it true, that a large

proportion of our cheese is "off flavour," as the saying is? Some contend that this is a slander of the buyers to get our cheese at low prices. He did not believe this. There was too much truth in the complaint of ill flavour. The preceding speaker had referred to the animal heat in the milk after it was drawn from the cow. But the evil often commenced before it was drawn from the cow. Decomposition not only begins immediately on milking, but sometimes has set in before milking. Cows are driven long distances in the heat too hurriedly. Sometimes dogs and wild boys chase them, so that the milk becomes heated and feverish while in the udder of the animal. Then there is great impurity in the after process. Milkers do not come to their work with clean hands. The pails and utensils are not properly scalded. Another cause of impure flavour is the failure of pasture in summer, causing the cows to wander in the woods and eat weeds that give a taste to the milk. Dairymen may remedy this by raising green corn, vetches, &c., to feed the cows when the pastures fail. Bad as the past season has been, by feeding my fifty cows with green fodder, turnips and the like, they have yielded within a ton of what they did the previous year. Both factory-men and their patrons ought to give attention to this matter, and unite to secure strict cleanliness. There is no reason to be discouraged, though prices have of late ruled low. Shall we go back to the old plan of wheat farming? We used to have depression and failure enough in that. Six and eight bushels of wheat per acre were all we could get some seasons. Bad anatto is also a frequent cause of ill flavour in cheese. How is this to be remedied? We spend a great deal of money on this colouring material, and it is money thrown away. It pleases the eye of the consumer, but hurts the cheese. It is to be hoped the time is not far distant when the use of anatto will be done away with. Another cause of bad flavour is occasional unhealthiness in cows. When a cow is ailing from any cause, her milk should not be sent to the factory. Mr. Farrington has correctly observed that bad rennets often injure the flavour of milk. There is yet another evil, namely: improper temperature of the drying room. It is often too hot in summer and too cool in the fall. Thus many little things require close attention in order to secure purity of flavour.

A MEMBER present asked the best method of preparing anatto.

Mr. FULLER, of Utica, N.Y., was asked to reply, and gave the following as a good recipe:—1 lb. potash, 1 barrel of water, put in as much pure anatto as the liquid will dissolve.

Mr. FARRINGTON read a recipe from the Oneida Co. circular. Dissolve 6 lbs. concentrated potash and 1 lb. saltpetre in 5 gallons of warm water, then add 30 gallons cold water, put in as much choice anatto as the liquid will dissolve, heat gently to a boil, put into a cask, and store in a cool place.

Mr. FULLER stated that they used to boil the mixture, but do not do so now.

Mr. BAILEY, of Norwich, furnished another recipe: 4 lbs. anatto, 2 lbs. concentrated potash, 5 ounces saltpetre, 1 1/2 lbs. sal-soda, 5 gallons boiling water, Put the ingredients into a tub, pour on the boiling water, put the anatto in a cloth and squeeze through it. About two ounces of this mixture is enough for 100 lbs. curd.

Mr. HARRIS offered two resolutions, one recommending the substitution of tin pails for wooden ones; and the other urging patrons of cheese factories to appoint at their annual meeting a committee of inspection to examine the utensils used by parties sending milk to factories.

Rev. W. F. CLARKE suggested that a subject of so much importance as purity of flavour in cheese demanded the appointment of a committee to report resolutions to the Association for its adoption. Mr. Harris' resolutions could be referred to such committee, and be embodied in its report.

On motion Rev. W. F. Clarke, Messrs. Farrington, Harris and Ballantyne were appointed said committee, and the resolutions referred to them.

2. Are curd mills beneficial, and would their general use be advisable?

Mr. WILMOT, of Milton, read a short paper in reply to this question, and from trial of the curd mill recommended its use by cheese makers. Bad flavour was very much the result of the whey remaining in the cheese. You get it out by the use of the curd mill.

Mr. FARRINGTON and Mr. GALLOWAY, of Norwich, spoke in favour of the curd-mill. Mr. Galloway had used one with the most satisfactory results.

Several questions were asked the above named gentlemen as to the construction of curd-mills, time

it takes to grind, &c. It was replied that they could be made very simply. Messrs. Wilmot and Galloway made their own. The mill consists of a cylinder of wood, full of small iron spikes, half an inch or so apart. Nails with their heads filed off will do. The cylinder may be from 8 to 12 inches long. It is hung in a semi-circular trough, also having spikes in it. Cog wheels and a handle to turn with are all the machinery needed. About 15 minutes grinding will do for an ordinary batch of curds.

3. What constitutes the superiority of the Cheddar system of cheese making, and could it be adopted with advantage in Canada?

Mr. FARRINGTON was of the opinion that this question was virtually comprehended in the two preceding ones. It was his impression that the two characteristics of Cheddar cheese were: 1st, cleanliness, and 2nd, grinding the curd.

Mr. BALLANTYNE, of Perth, observed that he believed there was another peculiarity about Cheddar cheese, namely: the development of acid in the whey to a given degree, and that this was a point of no small delicacy and importance.

Rev. W. F. CLARKE said Mr. Ballantyne was quite right. He understood that a minute account of the Cheddar process would be given by Mr. Willard in the address which had been made the order of the day for half past seven, p.m., and he would suggest that the further consideration of this question be postponed until after the delivery of Mr. Willard's address, which was at once agreed to.

4. Statistical circular—could it be made useful in equalizing and maintaining the last price for cheese the current year?

Rev. W. F. CLARKE thought the Association would be better prepared to discuss this question to-morrow morning, when Mr. Willard would lay before the meeting some very valuable statistics prepared by him for the recent Convention of American dairymen at Utica. He moved that the question be laid on the table until then, which was carried unanimously.

5. How long is it desirable to press cheese? Would two or more days improve the quality or texture?

Mr. FARRINGTON remarked that he had been a cheese maker for thirty-eight years. In the early period of his dairying, he always pressed two days, latterly he had only pressed half the time, but he believed his earlier practice was the best. Indeed, he thought three or four days would be better than two, but whether it would pay to provide the extra hoops, presses and space requisite for such long pressing, was another question.

Mr. COLLINS, of Dereham, had tried various lengths of time, and preferred 48 hours.

Mr. SCOTT, of Lobo, had been obliged, by hurry of work and limited space, to take some cheeses out of the hoops at ten hours, and could never see any difference between them and those that were longer in the press.

Another speaker (name unknown) had often taken cheese out of the hoops at four hours, and they were just as good as those that were in longer.

Mr. FARRINGTON referred to the subject of huffing in cheese. He did not think this resulted from want of pressure, as many supposed, but from some chemical cause, which no amount of pressure could remove.

6. Is it not practicable to adopt the American system of making cheese once a day, and would it be preferable to making twice a day, as practised by our factory-men.

Mr. YORK, of Elgin, stated several advantages he had found to arise from making up once a day. It was every way preferable to the practice of making twice a day. It was easily managed, if you have a stream of cold water to flow underneath the vats. He had a half inch stream, temperature forty degrees, flowing under each of his vats.

Mr. FARRINGTON thought there was a better system even than the American, and that was never to make up new milk. Leave a milking, if possible, twelve hours to cool. He had made eight cheeses on this principle, and they were the best he ever made. He had no doubt if we would adopt this practice, we should beat the Americans all hollow.

The question was asked if it was advisable to put ice in the milk. Mr. Farrington replied that he had tried it, but in his opinion there were objections to it.

The Association then adjourned, until 7, p.m.

Shortly after that hour, a large assemblage had convened, the general public of Ingersoll being pretty well represented, in addition to the cheesemen from different parts of the Province. The President called the meeting to order, and stated that the chief business of the evening was to listen to an address from X. A.

Willard, Esq., agricultural editor of the *Utica Herald*: without any preliminary observations from the chair, he begged to introduce that gentleman to the audience.

MR. WILLARD'S ADDRESS.

Mr. WILLARD spoke in substance as follows.—It is highly gratifying for me to appear again before a Canadian audience, and to assure you that my countrymen entertain the most profound respect for the people and Government of the Dominion. We have, indeed, knots of men and partisans among us, who are anti-British in feeling, but these do not influence the deep under-current of substantial good-will of the nation at large. The resolutions passed unanimously at the late Convention of American Dairymen at Utica, welcoming the delegates from Canada, indicated the existence of this auspicious feeling, which it is to be hoped may ever continue. There are so many things to be said about the dairy, that one is at a loss to know what facts it would be best to group together in an hour's talk. I shall assume that I am addressing practical men, who desire useful information clad in plain language. After glancing at the history and gradual development of the dairy interest in New York, Mr. Willard observed that American dairying now represents a capital of more than six hundred millions of dollars. The cheese product of this year has sold for more than twenty-five millions, and the butter product for at least one hundred millions. In 1865, the butter product of New York alone was estimated at sixty-five millions of dollars. That year there were thirty millions of gallons of milk sold in the State, which, at 4c. per quart, would amount to near five millions of dollars. From these figures it will be seen that dairy farming is a most important branch of American agriculture, and is destined from year to year to increase in magnitude. The idea of associated dairying is claimed by some to have originated in Europe. But it is widely different from the system now practised in this country. French and Swiss peasants, each owning one or two cows, unite them in a herd, employ a herdsman who takes them to the mountain pastures of the Alps, watches them, and with the help of assistants, makes cheese from the milk, which at the close of the season is divided among the owners of the cows, according to the number furnished by each. Only on such a system could cheese be made to advantage from one or two cows. But such a system could accomplish no grand results, nor become generally adopted. Associated dairying, as it exists on this continent, is a widely different affair. What distinguishes the American system is the constant effort to reduce the whole art and practice of dairying to a science. The end sought is to make associated capital pay better than non-associated capital. It is a new application of an old principle. It is adapting the same rule to farming which has been found successful in commerce and manufactures. Providence appears to be making use of it as a means of lessening the drudgery of the farmer's vocation, and increasing the comfort of his lot. God in His infinite goodness wills that science, mechanism and intelligence shall be the main forces to open up to us the resources of nature. The dairy farmers of America may justly claim to have been the first among agriculturists to apply practically the principle of association on an extended scale. What is to be the result of the expansion of this method of operation we cannot foresee. At present, however, it compels thought and effort toward the improved manufacture of dairy products, since "poor goods" are sure to become a drug upon the market. It will be my object to point out briefly the more important requisites for success in dairy management. After describing the microscopic appearance of milk, giving the analysis of it, and proving the arbitrary nature of the taste that rules in the markets of the world, Mr. Willard observed that the English taste, which we have to consult, requires a mild, clear flavour, with a certain mellowness of texture, readily dissolving under the tongue, and leaving a nutty new milk taste in the mouth. The English demand a cheese of solid texture, and free from porosity. The market value of cheese depends on its conformity to these requirements. To secure this, it is not merely necessary that cheese be rich in butter. Dr. Voelcker, the eminent English chemist, has proved by analysis that common English Cheddar is richer in butter than the best English Cheddar, which is the highest grade of cheese known in the British market. The peculiar quality which gives cheese its value in the market, though it arises to some extent from the butter it contains, depends in a higher degree upon a gradual transformation which the casein or curd undergoes in ripening. Proper ripening is,

therefore, a matter that demands close attention, careful experiment, and intelligent supervision. No effort should be spared to acquire skill in this part of dairy management. The component parts of what is considered the best grade of cheese in the English market are as follows:—

Water	33 02
Butter	33 15
Casein	28.12
Milk, sugar, lactic acid, and extractive matter	96
Mineral matter	3.85
	100 00

Thus it appears that good cheese, when properly cured, has about 34 per cent. of water, and less than 1 per cent. of milk, sugar, lactic acid, &c. Analyses prove that the proportion of water should not be above 31 per cent., since an increase above this amount indicates bad flavour. A due proportion of water imparts to cheese a smooth and apparently rich texture, which manufacturers should aim to secure. If too much water be taken out, the result is a dry, stiff cheese, which will appear less rich than it really is. Any process of cheese-making, by which we may be able to judge most accurately as to the amount of moisture to be retained in the curds, will be most successful, other things being equal. Another point needing attention is the shape of cheese. This undoubtedly has a considerable influence on flavour. Facts prove that when there is a good proportion of butter in the curds, thick shapes like the Cheddar and Siltou seem well adapted to secure mild, clear flavour, but skim milk cheese should always be made flat and thin. The saline taste sometimes complained of in old cheese is attributed by Dr. Voelcker to ammoniacal salts developed during the ripening process. These always have a pungent, saline taste. This is an evil that increases with age. It is caused by a portion of the casein or curd suffering decomposition in consequence of the ripening process not being properly conducted. Another thing which trade and our own interest imperatively demand, is the production of cheese that is slow of decay—that will retain its good qualities for a long period of time—one that can be kept either at home, on the factory shelves, or in the hands of purchasers, without fear of deterioration or loss. English shippers and dealers have always complained of the early decay of American cheese, and the fear of loss from this source has had a bad influence on the market. Haste to sell has resulted from the fear of deterioration, and prices have often been brought down in this way. There has been improvement in the keeping qualities of our cheese during the last few years, but there is room for improvement still, and no factory should make a pound of cheese the coming season, which cannot be kept without injury, at least, for several months. There is not much doubt but that stocks the coming season will have to be held to a greater extent than ever before, or low prices accepted. We must be prepared to meet the emergency. The desired result cannot be secured by manufacturers, without the earnest and hearty co-operation of patrons. The first requisite to success is *pure, clean, healthy milk*. To obtain this, upland pastures should be used. Uplands for pasture, lowlands for meadow. Then the herds must be driven very leisurely from the fields. Dogs are a great curse to dairy farming by chasing the cows and causing them to come to the stables in a heated condition. Good milk cannot be had under such circumstances. It is cruel to let a poor dumb beast be chased violently over the pasture, painfully swinging a distended udder at every step. He who suffers this should be made to feel a loss by the rejection of his milk at the factory. The dirty practices of milkers must also be put a stop to. When such things are considered, it is no wonder that much of our cheese is condemned. If you Canadian dairymen would succeed, you must avoid these errors. One of the good things done at the recent Convention of American Dairymen at Utica, was the resolution passed condemning the use of the wooden pail for milking. It is a great nuisance, and a fruitful source of ferment most injurious to the milk. So easily is milk tainted that even carrion in a field where dairy cows were pasturing, has given trouble in making cheese from the milk given by those cows. Ferments resulting from offensive matter in the milk, often occasion bad flavour in cheese. These are a fruitful cause of porosity and huffiness in cheese. Small particles of milk in the corners of pails, or upon utensils exposed to the air, rapidly decompose and operate upon the new milk with which they come in contact, in the same way as yeast, or in the same way as a small piece of putrifying meat in contact with sound meat imparts the influence of decomposition and decay. To kill these ferments requires a temperature of 212°. Nothing short of boiling heat will accomplish it. Hence, in cleansing pails and dairy apparatus, care should be taken that the water used be boiling hot. Half the dairymen do not understand this fact, but it is of

very great practical importance. Another point demanding attention is the location of the pigpens. I am glad to say that no modern built factory tolerates the pig-stye in its neighbourhood. The greatest caution should be exercised in having all the surroundings clean, sweet, and free from taints. In conveying milk to the factory, injury is often done by putting it when warm into cans with close fitting covers, and hauling it long distances in the heat. The milk ought to be spread out and cooled in some way before it is put in the cans. On arriving at the factory it is usually run into the vats at once, whereas it should be spread out in some way on a broad surface, and gradually flow into the vat from the opposite end of such broad surface. Even by such a crude process a large amount of impurity would be got rid of. The inventor who will get up a simple and practical machine for exposing newly-drawn milk to the air, and freeing it from its animal odour, will at once make a fortune out of it. There is no doubt but the exceedingly fine aroma which is obtained in the best samples of Stilton, Cheddar, and Cheshire cheese, is secured by manufacturing perfectly pure milk at low temperatures. In all the finest English cheeses that have come under my observation, the temperature in setting ranged at about 78° to 82°, never above 84°.

At this point in the address, Mr. Willard described at some length the Cheddar system of cheese making, and showed that it did not differ materially from the system in vogue at our cheese factories. Summing up, he pointed out the following as the main principles applicable to our own practice.

1. Studying the condition of the milk.
2. Setting at a temperature from 78° to 82°
3. Drawing the whey early.
4. Exposing the curd longer to the atmosphere, and allowing it to perfect its acidity after the whey is drawn.
5. Putting in press before salting, at a temperature of 60° to 65°.

6. Grinding in the curd mill, and then salting. These last two items are important, because you cannot regulate the salt accurately by guess, and can only get the right proportions by a uniformity in the condition of the curd. The application of salt at a higher temperature than 65° is claimed to be prejudicial. I am firmly of opinion that the exposure of the curd in small particles to the atmosphere is beneficial, and helps to secure good flavour and mellowness of texture. The philosophy of this is easily explained, since it consists of the process known by the name of oxidation, and by which the earth, air, and sea are purified from contamination. Dairy men and manufacturers will do well to study the philosophy of their business, to get hold of principles, and not follow rules in a blind, mechanical way. We, in the old dairy districts of New York, are just beginning to discover some of the errors which I have pointed out. You will do well to profit by the lessons we have been sixty years in learning.

Mr. WILLARD next proceeded to discuss the subject of butter-making, which, he said, has of late become one of great importance. The cheese factory system has so far cut off the production of this article that prices have advanced in the fine qualities to a pitch rendering this branch of the dairy business exceedingly profitable. Indeed, there is a prospect of its being made more remunerative than cheese. In Orange County, N. Y., long famous for its excellent butter, there has recently been introduced a system of jointly manufacturing cheese and butter. The system has proved a great success, and is being rapidly introduced into other parts of the country. It is a decided advance on all previous methods, and produces an article of a quality equal to that obtained from the most noted butter districts of Europe. No people on the face of the earth are more fastidious as to their food than the better classes in London, England. Possessed of immense wealth, they pay liberally for extra qualities of food, particularly the products of the dairy. Good butter they will have at any cost. Their finest grades come from the Continent—Normandy, Holstein, and the Channel Islands. It is worth to-day 140s. stg. per cwt., or about 30 cents gold per lb. wholesale; while Canadian sells from 64s. to 90s. per cwt., and Irish extra brings 108s. to 112s. I have seen and tested immense quantities of Normandy and Holstein butter in London. It is excellent in flavour and texture, very lightly salted, and of a rich, golden colour. I saw them making butter for the Queen's table at the Royal dairy near Windsor Castle. The milk is set in porcelain pans, resting on marble tables. The walls, the ceilings, and the floor of the milkroom are of china, and the arrangements for ventilation are the best that can be devised. Fountains of water are constantly playing on all sides of the room, which helps to maintain an even temperature. The churn is of tin, and the butter is worked with two thin wooden paddles. The whole establishment, from the milkroom to the

stables, is the most perfect specimen of neatness that can be imagined. I need not say that the butter is excellent.

Mr. WILLARD then gave a minute account of the entire system of Holstein butter-making, drawing chiefly for his details on a communication addressed to the Right Hon. the Earl of Erne, by the Secretary of the London Board of Trade. The particulars began with the care and feeding of cows, which were elaborately described, and then dealt with the manufacture, packing, shipping and marketing of the butter. Extreme cleanliness and regulated temperature are the prominent points in Holstein butter-making.

Returning to the new American system of butter-making, which is now becoming widely practised, Mr. Willard remarked that it rests mainly upon five great principles. 1. Securing rich, clean, healthy milk—milk obtained, if possible, from rich old pastures, free from weeds. 2. Setting the milk in a moist, untainted, well ventilated atmosphere, and keeping it in an even temperature while the cream is rising. 3. Proper management in churning. 4. Washing out or otherwise expelling thoroughly the buttermilk, and working so as not to injure the grain of the butter. 5. Thorough and even incorporation of pure salt, and packing in oaken tubs, tight, clean and well made. Cleanliness in all the operations is of imperative necessity; while judgment and experience in churning the cream and working the butter must, of course, be had. What really distinguishes the American system is the manner of setting the milk so as to secure an even temperature, and in applying to butter-making the principles of association, so that the highest skill in manufacturing may be obtained—in other words, the inauguration of butter factories. In these establishments the milk room is constructed so that good ventilation is secured. It is provided with vats or tanks for holding water. These are sunk in the earth in order to secure a lower or more even temperature of water, as well as for convenience in handling the milk. The vats should be about six feet wide, and from twelve to twenty-four feet long, arranged for a depth of eighteen inches of water. There should be a constant flow of water in and out of the vats, so as to secure a uniform temperature of the milk after it has been divested of the animal heat. The milk is set in pails eight inches in diameter and twenty inches deep, each holding about fifteen quarts of milk. As fast as the milk is delivered, the pails are filled to the depth of seventeen inches, and plunged in the water, care being taken that the water comes up even with, or a little above, the milk in the pails. The temperature of the water should be 48° to 56°. A vat holding 2,000 quarts of milk should have a sufficient flow of water to divest the milk of its animal heat in less than an hour. Good, pure milk, will keep sweet thirty-six hours when thus put in the vats, even in the hottest weather. When milk is kept for thirty-six hours in the water, nearly all the cream will rise. The Orange Co. Dairy men claim that it all rises in twenty-four hours. They say, too, they can get as much cream by setting in pails on the above plan, as they can when the milk is set shallow in pans, and the cream is of better quality because a smaller surface being exposed to the air there is not that liability for the top of the cream to get dry, which has a tendency to fiek the butter and injure its quality. The old notion that cream cannot rise through a depth of milk greater than seven inches is believed to be an error. The new system secures what was so difficult, if not absolutely impossible on the old plan, uniformity of temperature, so that the dairyman has perfect control of the milk. The Orange County butter-makers, after trying a great variety of patent churns, find none which they like so well as the old barrel dash churn. At the butter factories they use the barrel and half size, and about fifty quarts of sweet cream are put into each churn. The cream is diluted with water, by adding cold water in summer and warm in winter, at the rate of sixteen to thirty quarts at each churning. The temperature of the cream in summer when the churns are started is about 60°, but in cold weather they are started at 64°. In warm weather, ice is sometimes broken up and put in the churn to reduce the temperature to 56°; but it is deemed better to churn without it, if the cream does not go above 64° in the process of churning, as butter made with ice is more sensitive to heat. It requires from forty-five to sixty minutes to churn, when the butter should come solid, and of a rich yellow color. It is then taken from the churn and thoroughly worked in cold spring water. In this process the ladle is used, and three times pouring on water; generally all that is required. It is then salted at the rate of eighteen ounces of salt to twenty-two pounds of butter; if intended for keeping through the winter a little more salt is used. The butter, after having been salted and worked over, is allowed to stand in tubs overnight, when it is worked a second time, and packed. A butter

worker consisting of a lever fastened to an inclined plane is used for working the butter. It is packed in 60 lb. pails or firkins of white oak, made perfectly tight and strongly hooped to prevent all leakage. They are three times thoroughly soaked before using, first in cold water, then in hot water, and finally in cold water again. After being filled with butter they are headed up, and strong brine is poured on the top to fill all intervening spaces.

The skim milk left after taking off the cream for butter-making is turned into skim cheese, but I shall not dilate upon this part of the business. First class butter is made at these factories, butter which tops the market in price, wherever it is known. The Orange Co. factories are provided with cool, well ventilated cellars, which are indispensable to the butter-maker. I strongly commend this new system of butter and cheese factories combined to the attention and consideration of Canadian dairymen.

Re W. F. CLARKE moved, seconded by E. V. BODWELL, Esq., M. P., That the cordial thanks of this Association be tendered to X. A. Willard, Esq., for his able and interesting address, and that it be requested for publication.

Both the mover and seconder of the above resolution addressed the meeting at some length, remarking on several points of importance included in the address, and urging on the dairymen present attention to the valuable counsels they had heard.

The resolution was then put and carried unanimously, after which the Association adjourned to meet at 9, a.m., on Thursday morning.

On Thursday morning, Feb. 6th, the Association met soon after 9 o'clock, pursuant to adjournment. The discussion on making cheese once a day was resumed for a short time, and various opinions were expressed as to the use of ice, a decided preference being expressed for a stream of cool water underneath the vats. At ten o'clock the order of the day was called up by the Chairman, and Mr. Willard proceeded to give a variety of statistical tables, which, though prepared for the New York Convention, he said might be of service to Canadian dairymen, if in no other way, by giving them examples for the preparation of similar tables here. The importance of having a statistical circular was also shown, and, in general, the advantages which must accrue to dairymen from being posted in regard to factory production and market prices. Mr. Willard stated that considerable depression existed among the New York dairymen from the fact that cheesemaking appeared to be no longer a paying business. He would submit some figures on this subject which New York dairymen considered pretty near the mark. It takes on an average 200 acres of good land, including the wood lot, to carry forty cows, together with the usual supply of teams and sprinkling of young stock. Now at the average of forty cows at 400 lbs. per cwt., a liberal estimate among factories, we have 16,000 lbs, which at fourteen cents per pound

Amounts to	\$2,240
Out of this amount must be deducted for manufacturing cheese at 2 cents per lb.	\$ 320
Carting milk	60
Labor, 1 man 1 year	300
Hired girl 1 year	150
Extra work in laying	60
Board of help at cost	200
Salt, plaster, &c.	60
Blacksmithing, wear and tear of utensils, waggons, harness and repair buildings	200
Average depreciation of stock	100
Taxes	100
Insured and incidentals	60
	\$1,590
Balance to Cr.	\$650

I put the farm at nothing, the stock and utensils at nothing, and have reduced the hired help to the utmost limits, on the supposition that the farmer and his family are strong and healthy, and able to do more than hired help. I have supposed the farmer to raise his own flour, grain for the stock, and that household expenses are paid by sales of odds and ends from the farm. Thus estimated, we have the enormous sum of \$650 remaining, out of which the farmer is to clothe himself and family, and pay all the miscellaneous expenses of his domestic establishment. No margin here for the purchase of camel's hair shawls, or investment in lands or stocks.

At the close of Mr. Willard's statistical details, the Association resumed the discussion of the topics on the programme.

7. Best stock for dairy purposes.

Mr. HAMILTON spoke in favor of the Ayrshires, and recommended crossing the best native cows with good Ayrshire blood.

M. JAMES did not agree with the previous speaker as to the Ayrshires. He was in favor of an infusion of Short-horn blood into the native stock of the country. He believed, however, that quite as much depended on the feed as on the breed. Cows must have

plenty of good succulent food and access to water. He would give the Association the items of his own balance sheet during one season. He kept thirty-two cows and one bull. His pasturage consisted of thirty acres of grass and rather more woodland—say two acres—one cleared and one woodland to each animal. The cows are one-third my own raising from good native stock, crossed with Short-horns. These grades prove very satisfactory milkers. I have taken from some of them, three quarter short-horns, fifty-four pounds of milk per day. I have also ten or twelve other good grade cows, also of the Short-horn cross. The rest are just what could be picked up of native stock. Two of my grade Short-horns have yielded in proportion as much as three of the common cows. During the season of 1866, my herd averaged 470 pounds of cheese per cow. My cows go till August on grass. When pastures fail we use green corn and rape—no roots. Sowed corn cannot be recommended too highly. My first year's average was only 400 pounds of cheese per cow. Had no succulent feed that year.

The question was asked if the feeding of rape affected the taste of milk?

Mr. JAMES replied that he had found no ill effect from feeding turnips even, by feeding immediately after milking.

Some one asked—"How much corn to sow per acre?"

Mr. JAMES replied, it depends on the kind used. I sow the large western variety, 2 bushels to the acre. It will grow ten feet high, or more; but though the stalks are nearly as large as a man's wrist, they are so soft and juicy that cows eat it eagerly.

It was asked if the corn should be sown broadcast, in drills or in hills?

Mr. JAMES replied, broadcast will do; but I prefer to use a drill. Hill planting does not answer for green foddering. I like to take an old meadow, plough it with a subsoil plough, leaving plenty of loose soil on the top of the buried sward. Sown with a drill on such land, a large yield is certain.

Mr. WARE, of Port Hope, said—We want stock that will give a good yield of milk, make a rich quality of cheese, and when their milking days are over, produce the most beef. I rank the breeds as follows:—

1. Durhams and Durham grades.
2. Ayrshires, if for milk only.
3. Devons, natives and miscellaneous, to be selected with judgment.

We rear our own stock as far as possible, and feed the young calves with whey and meal stirred in it. Durham blood predominates in our herd, but we are this year using an Ayrshire bull which ought to make a good cross. We practice liberal feeding. If grass fails we use green oats, vetches, corn, &c. The long winters of this country are the great drawback to dairy farming.

Mr. LOCKHART strongly advocated root-growing, especially turnips. He believed this was highly advantageous in many ways; among the rest, it prepared cows better than any other winter feed to take to grass.

Mr. MALCOLM, of Perth, said there were some objections to turnips. They had become a very uncertain crop. Used to get 800 bushels to the acre easier than 300 or 400 now. Cannot get a good crop of wheat after turnips now as formerly. There is also difficulty in keeping turnips through the winter. Question if peas be not more profitable than roots. Can always get good spring wheat after peas. Year before last made near 500 lbs. of cheese per cow. Began to make early in the season, fed meal until a supply of grass came, and milked late into the fall. Also made on Sunday the same as week days. I feed all the early part of winter straw and turnips, and give hay and chopped stuff or meal towards spring. As spring approaches the cows grow weary of straw and refuse it.

Mr. FARRINGTON urged that whatever breed of cows were kept, the utmost care should be taken of the calves. Early and good milkers could only be had by so doing.

Mr. DALL, of Belleville, had found the large Durhams good milkers, but costly to keep. Large framed cows are unprofitable, the small animals are best. Had obtained most liberal results from a small brown kind of cow, called a native, but apparently a cross between the Devon and Ayrshire, having thin neck, full udder, and milking a ten quart patent pail full at a meal. Would give the result of a dairy in his part of the country, made up chiefly of natives but including a few Durham grades. It is known as the "Front of Sidney Cheese Factory," County of Hastings. Number of cows 826; 4,300 boxes of cheese made, averaging about 80 lbs. each; average of cheese per cow 416 lbs. Sales realized 8 cents per lb. to the patrons, exclusive of the cost of manufacture and carting. Sabbath milk not used, but made into butter by the patrons. One pound of cheese was got on an average from 9.55 lbs. of milk. Corn has been largely sown broadcast for green feed.

The Association adjourned from 12.30 p.m. to 1.30 p.m. On resuming business, question No. 8 was read by the Chairman.

8. What is the best hour and plan for milking?

On motion, it was agreed to lay this question on the table.

9. What kind of salt is most suitable in cheese making, and how does the Goderich salt compare with the Liverpool Dairy salt?

This question only elicited a very short discussion which resulted in the following resolution.

That this Association, having learnt that Goderich salt is fully equal to Liverpool and other standard varieties, would recommend its general use among dairymen. Several present stated they had tried the Goderich salt, and found it as good as any other salt.

The report of delegates to the Ullica Dairy Convention was called for, when the Chairman, Messrs. Farrington and Noxon, severally gave their impressions of the Convention they had attended.

It was then resolved that the report of the delegates be received, and thanks tendered them for their attendance at said meeting.

A report was then presented by the Finance Committee, which on motion was adopted.

The committee appointed to consider the best means of securing purity of flavour in cheese, reported as follows:—

REPORT OF COMMITTEE ON THE BEST MEANS OF SECURING PURITY OF FLAVOUR IN CHEESE.

Whereas it is abundantly manifest that, in order to ensure success in the dairy business, purity and excellence of flavour in cheese must be secured; and whereas this depends upon a variety of conditions, the observance of which cannot be too strongly insisted on, this Association hereby resolves as follows.

1. That one of the most essential requisites in the manufacture of cheese is pure, clean milk; and being fully convinced that a pure article of milk cannot be had so long as dairymen and their patrons continue to use wooden utensils for milking and storage, this Association earnestly recommends the use of tin pails for milking; also, that none but tin vessels be employed for conveying and storing milk, and that all wooden vessels be discarded, and banished from about the dairy.

2. That in order to lower as much as possible the animal heat of the milk, this Association would recommend that the cans in which it is put for sending to the factory be set in tubs of cold water, and kept in a shady place until called for by the carrier.

3. That all milk-waggons should be furnished with an awning or roof of some kind, to protect the milk cans from the rays of the sun.

4. That this Association would advise the election of a committee by the patrons of each factory, at their annual meeting, for the purpose of inspecting all vessels used for milking, storage, or conveying milk to the factories, and that it shall be the duty of said committee to use all practicable means to secure the utmost care and cleanliness on the part of all persons engaged in handling milk.

5. That much damage is often done to the quality of milk by reckless driving and over-heating of the cows on the part of ill-trained dogs, and wild, thoughtless boys; therefore this Association would urge the greatest care in this particular, and that not only is it important that cows be brought up from the pasture without hurry and excitement, but that kind usage and quietness be inculcated on the milkers.

6. That cows eating weeds which impart an objectionable taste to milk is one cause of bad flavour in cheese, and as this evil is not likely to occur except when the pastures become scant through heat or drought, this Association would recommend patrons of cheese factories to grow a small quantity of green fodder to give cows when the grass fails; not only will the temptation to eat weeds be thus removed, but a liberal yield of milk will thereby be secured.

7. That experience proves the utter impossibility of making pure cheese in a tainted atmosphere; therefore it is of the greatest importance that there be no hog-pens within smelling distance of the factory; also that sour whey, slops, rubbish, and impurity of every kind be removed from the neighbourhood of factories, and all the surroundings kept as clean and sweet as possible.

8. That badly cured rennets are one cause of ill-flavour in cheese; which evil may be easily prevented if butchers and others will observe the following simple rule: kill the calf twelve or fifteen hours after sucking, empty out any vestige of curd or other foreign matter that may be in the rennet, salt and stretch to dry.

9. That this Association would advise extreme caution and dealing only with responsible houses, regardless of cost, in order to obtain pure annatto, there being little doubt that an impure article is frequently a source of injury to the flavour of cheese.

10. That this Association would recommend a trial of curd mills on the part of dairymen, there being much reason to think their use would improve the

flavour of whey by effecting a more complete removal of cheese, the remains of which, doubtless, often occasion bad flavour.

11. That it is advisable to avoid working up new milk, and to leave it, if possible, from six to twelve hours, as circumstances may admit before commencing the process of manufacture.

12. That this Association cannot too strongly express its conviction of the absolute necessity of most scrupulous cleanliness in every process connected with cheese-making; and inasmuch as it is equally the interest of patrons and factors to secure this, it would earnestly press upon all concerned the use of every practicable means and a hearty co-operation to accomplish the desired end.

13. Finally, this Association would urge on all cheese-makers to thoroughly master the principles of their business; to verify them for themselves; not to go upon hearsay or blindly to follow the rules of others which they have not tested, and to bend their most assiduous, determined and persevering endeavours to raise the quality of the article they manufacture, until Canadian cheese shall rank second to no other brand in the world's market.

All of which is respectfully submitted.

WM. F. CLARKE,
Chairman of Committee.

On motion the foregoing report was adopted.

Question No. 4, relating to the statistical circular, was then recalled for further discussion.

Rev. W. F. CLARKE said there could only be one opinion among practical and shrewd men as to the value of such a circular, if it only furnished correct information. He had learned that the American Dairymen's Association had appointed a committee to devise ways and means for issuing such a circular. The President of this Association was a member of that committee. He thought we should co-operate with the New York dairymen in this matter. He was about to move a resolution to that effect. But before doing so, he wished to refer to the calculation laid before the meeting by Mr. Willard, as to the small returns now obtained by American dairymen. It was clear that we could out-do our American neighbours in producing cheese for the foreign markets. He had made a rough calculation since Mr. Willard had given us the New York balance-sheet, and it convinced him that at the low figure of 9 cents per lb. for cheese, the Canadian dairyman could show a better balance to the good in gold than the American dairyman could in United States currency. He hoped the practical men in the Convention who could do this more correctly than he, would get up a balance sheet to compare with that submitted by Mr. Willard. While he did not believe Canadians were about to make fortunes in the dairy business, he had no doubt it was a fairly remunerative branch of industry, and would become increasingly so if cheese of the first quality were produced. He begged to move:

That this Association, impressed with the necessity of having a periodical circular of statistics, hereby declares its readiness to co-operate with the committee appointed at the recent American Dairymen's Convention in regard to this matter, and the manufacturers present pledge themselves to endeavour to secure from their patrons a subscription of two cents per cow towards this object. Seconded by J. V. Bodwell, Esq., and carried unanimously.

It was then on motion resolved:—

That the thanks of this Association be given to A. Oliver, Esq., M.P.P., for the service rendered by him to the dairy interest by the introduction of a Bill to prevent the adulteration of milk; also to K. Graham, Esq., M.P.P., for his co-operation in connection with said measure.

That the members of this Association pledge themselves to the utmost of their power to avoid and discountenance Sunday cheese-making, and all dairy work not absolutely required by mercy to animals and actual necessity.

That the thanks of the Association be presented to T. Swinyard, Esq., Manager of the Great Western Railway, for his liberality in granting free return passes to the members of this Association.

That the cordial thanks of the Convention be tendered to the editors of the CANADA FARMER and the Ingersoll Chronicle for their attendance and the interest shown by them in the publication of the reports of this and the former Convention.

That this Association cannot separate without expressing its conviction of the many benefits resulting from such meetings as the present, and would extend an earnest invitation to all interested in the dairy business to be present at future gatherings of this kind.

Votes of thanks were then passed to the President, C. E. Chadwick, Esq., for his conduct in the chair, and to J. Noxon, Esq., for his faithful services as Secretary, and for his successful endeavours to obtain return passes on the Great Western Railway.

The Association then adjourned until the first Wednesday in February, 1869.



Horticultural and other Queries.

"A Subscriber" writes from Bayfield as follows:—
I should be very much obliged if you, or some of your correspondents, could give me information on the following points:—

- 1st. What is the proper time for pruning? will the fall or winter do?
- 2nd. Should the branches be trimmed off close to the body of the tree?
- 3rd. Will pruning young trees hinder them bearing?
- 4th. What kinds would you recommend for an apple orchard of say 200 trees, profit being the object?
- 5th. What is the best thing with which to keep wooden eave-troughs from opening and leaking with the sun?
- 6th. Can you give any information concerning the famous 'Platt's Midge Proof Wheat'? If Mr. Mernery, and others who have grown it this year, could give us the results through THE FARMER, he would greatly oblige."

ANS.—1. We refer our correspondent to an article on pruning, which he will find on page 203 of the 4th Volume of the CANADA FARMER (No. 13), where he will find some remarks on this subject. Much diversity of practice prevails as to the time of pruning; we like the fall for the purpose.

2. The branch cut off should not be removed close to the stem, but a short fork should be left, equal to about the thickness of the branch removed.

3. Judicious pruning will promote bearing.

4. The list of fruits recommended by the Fruit Growers' Association, and the subsequent reports of the various meetings of the Society, will furnish the best information we can give on this point. The experience and opinions of some of our most extensive fruit growers, as to the best kinds of fruit for Canada, are stated in the report published in our last issue.

5. We know of nothing better than painting.

6. We have no more information in regard to this variety of wheat than was published at various times during the course of the past year. We should be glad to record the results of last year's experience, if any of those who tried it will report to us.

TO CORRESPONDENTS.—The extra space devoted to the Dairymen's Convention, encroaching as it unavoidably does on our "Correspondence" columns, obliges us to postpone several communications till another issue.

TOWNSHIP SOCIETIES.—We are requested by Mr. R. T. Williams, Secretary of the South Riding of Oxford Agricultural Society, to publish the following Resolution passed at the annual meeting of the Society:—"Resolved, That this Society memorialize the Government and House of Assembly of Ontario against the new Agricultural Bill, which proposes to reduce the share of Government grant received by Township Societies from three-fifths to one-half; as in the opinion of this Society the change will prove injurious to the interests of Agriculture; and also that the Secretary communicate this resolution to the branch Societies in the Riding, and request them to take similar action."

NOTES AND CRITICISMS.—"A Subscriber," writing from Carleton County, animadvert on the defects of much of the Canadian honey, and attributes its low price at Montreal to its inferior quality, and thinks that Canadian honey, as well as butter, must be greatly improved to attract attention and command good prices. Our own experience is not in accordance with his remarks; we have seen abundance of most excellent honey in this neighbourhood and other parts of the Province. If the butter were as good as the honey, no one need complain. The bees do their work better than many of our dairy hands. The same

writer says, in reference to SHEEP MARKS:—I have tried various methods of marking sheep, but do not know anything equal to the "Dana" labels. These carefully put in, and used in connection with the register, enable us to trace sheep for life. And in regard to PACKING SNOW ON WHEAT, he adds: My experience is just the reverse of that recorded at page 19. I have found, when I have had occasion to make a winter road across wheat and clover and grass, that it has invariably killed them (especially clover), as I supposed by excluding the air.

QUERIES.—THE CONVENTION AND SHIP SOCIETIES.—Mr. P. D. Palmer sends us the following: "R. Graham, Esq., of Sidney, is reported to have said at the Agricultural Convention, held in Toronto in November last, that 'he knew of a case in which one man organized three Township Societies, and came down and drew three-fifths of the funds of the parent society.' And again, 'he knew of men in his county, South Hastings, who were worth thousands of dollars, and who had for years and years past taken prizes for these pairs of stockings, which brought \$2 each prize, and had perhaps been bought at the Provincial Exhibition.' Still again, 'in one of the Township Societies in his county, he knew of \$100 in prizes going into the pockets of one individual, the united value of whose contributions to the show would not reach £5.' The above remarks are so hard to believe that I have decided to ask Mr. Graham, through the medium of your valuable paper, to kindly give us the name of the man that organized the three Township Societies; also, who the men are that took the \$2 prizes year after year for the same pairs of stockings; and lastly, who pocketed the \$100 in prizes, the united value of whose contributions to the show would not reach £5?"

A correspondent from Sidney has sent us a communication on the same subject, and emphatically denies the correctness of the statements in question. As these statements were reported in this journal, we feel bound to publish also the above rejoinder.

The Canada Farmer.

TORONTO, CANADA, FEBRUARY 15, 1868.

The Dairymen's Convention.

We devote considerable space in our present issue to a report of the First Annual Meeting of the Canadian Dairymen's Association, held on the 5th and 6th inst. at Ingersoll. Though nominally the annual meeting of that body, it was really a Convention, a sort of dairy parliament, at which very little routine business was done, but a considerable amount of practical discussion held, and important measures resolved on. This great interest has evidently got hold of a large share of the cream of our country, not in a literal sense merely, but in a figurative one, for obviously our most intelligent and borough-going farmers have contributed more than any other class to swell the ranks of the Dairymen. The Ingersoll gathering was truly a "picked and packed" assembly, picked as to intelligence and packed as to numbers. No random or miscellaneous collection of people could have listened so eagerly to long addresses, or entered so thoroughly into the discussion of scientific and practical matters, as did the assemblage to which we refer. It was evident that our dairymen have read and thought about their business, and feel an anxiety to excel in it. This feature of the Association augurs well for future success—nay, ensures it.

The past season has not been one of high prices and brisk markets for cheese, yet Canadian dairymen are not discouraged. At last year's average of prices, dairy farming pays better than wheat growing. No one showed a disposition to crouch or complain at the recent meeting: on the contrary, the utmost cheerfulness and hopefulness were manifested. The low prices of last year have been attended with

at least two good results. They have checked the rush into cheese-factory operations, which but for a timely restraint being imposed, would have resulted in disaster. They have also demonstrated that Canadian dairying is more profitable than United States dairying. Our American rivals in cheese-making acknowledge that they cannot produce the article for the average of last year's prices: it costs them more than they have been getting for it: while Canadian dairymen can make a fairly remunerative profit at those very figures. We ought, perhaps, to note another good result of last season's low prices. It was found necessary to hold on to stocks for several months, which severely tested the keeping qualities of the cheese, and thus added another to the many considerations that urge the production of a choice article. On this point the Convention got "line upon line" of urgent advice from our best dairymen and others. The one great condition of success in the prosecution of this business is turning out a first-class product. As Mr. Furness, the largest buyer who has been in the Canadian market this year, truly remarked to the assembly, "Do you produce the highest quality of cheese, and I will produce the highest market price for it. Only make the right article, and you are all right." Two things, more especially, are needful to secure this: thorough cleanliness in every part of the process, and skilful manufacture. Our dairymen know how to make the cheese, but the grand difficulty is to secure purity in the milk. For this they are largely dependent on their patrons, and on the parties from whom they procure rennets and anatto. One of the most important doings of the Convention was the adoption of a series of resolutions carefully prepared by a committee appointed for the purpose, pointing out and strongly urging the requisites to obtaining purity of flavour in cheese.

The discussion of methods of operation, which was kept up with unflagging interest to the last, elicited a large amount of valuable information which cannot fail to help those who are inexperienced in the business. Yet, as in more important concerns, there were some who had to own they did not practice all they knew and were convinced of. One manufacturer had tried the curd mill and was quite clear as to the benefit of using it, but although it only took about a quarter of an hour longer to make up his batch of curds by the grinding process, he did not practise it. Another, and he perhaps our very best dairyman, described a method by which he had once made in succession eight cheeses, that were the best he ever made,—a method by which he was confident we could beat the Americans all hollow," (himself an American, by the way,) yet acknowledged he did not make by this method. Gentlemen, example is better than precept. Come, is mightier than go. Let us hope that henceforth you will practice what you preach, and that your brother dairymen will do likewise.

We are increasingly convinced of two or three things which we have heretofore endeavoured to impress on our readers concerning the cheese business. First. That it is not well to go too exclusively into dairying. We have erred in past years in the direction of too much wheat-raising, and there is a constant tendency among farmers to hang their hopes too much on one peg. We are satisfied that a mixed system of husbandry is best. It is wise for farmers, though not for lovers, to have more than one string to their bow. If one product fails, it is well to have others on which to fall back. Secondly. That there is danger of too much competition in the dairy business. Factories may be too near together, and consequently too small for profitable work. The same hands that make up the milk of 200 cows, can just as well make up that of 300, and so on with larger numbers. Within a certain limit, the larger the factory the more profitable will the business be. Much complaint is made by some at the price charged

for manufacturing cheese in this Province, viz.: two cents per lb. But in small factories it cannot be done more cheaply. In the State of New York cheese is made for a cent and a half in many cases, and even, if we are not mistaken, for a cent and a quarter, but their factories are larger than ours, and can, therefore, be run more cheaply. If the patrons of cheese factories want the price of manufacture lowered, they must set their faces against the undue multiplication of factories, and endeavour to enlist their neighbours in supplying milk, so that each factory may do a sufficiently large business to make living profits at as cheap a rate as possible.

Moreover, let it be constantly borne in mind that the interests of patrons and factors are identical. They should, therefore, co-operate with each other to produce an article of the highest excellence. There is hardly any other business in which the law of mutual dependence operates more surely or more powerfully. Each patron must conscientiously aim to furnish pure milk, and the manufacturers give unwearied attention to the details of the business, if success is to be had.

It will be observed that steps were taken by the Association to co-operate with American dairymen in procuring a statistical circular. We would urge that this action on the part of the Association be sustained by both manufacturers and patrons, as it is clearly their interest so to do.

The Association very properly renewed its protest against Sunday cheese-making. It was the more needful to do this, as one dairyman told the Convention, with a surprising air of coolness, that he made cheese every day in the week alike. For this there is no necessity and no excuse, as testified by our best and most experienced manufacturers. It was highly satisfactory to witness the air of unanimity and determination shown by the assembly in frowning down all violations of the sanctity of the Sabbath in connection with this business.

The presence of X. A. Willard, Esq., added not a little to the interest of the occasion we are noticing. We give elsewhere the substance of his address, which was chiefly occupied with details respecting Cheddar cheese-making, and Orange Co. butter-making. We will not say of Mr. W. that he has dairy "on the brain," but certainly he is deeply interested and thoroughly posted in regard to cheese and butter-making. He is withal a most genial, companionable man, having a large share of the milk of human kindness, which no souring process has ever curdled into cheese. Our dairymen have reason to feel much indebted to the Executive Board of the Association for inviting him, and to him personally for attending and contributing so large a quota to the interest and usefulness of the occasion.

The Free Grant Bill.

"An Act to secure free grants and homesteads to actual settlers on the public lands," finally passed the Assembly on the 4th inst., and now only awaits the sanction of the Lieutenant-Governor to become law. The proposed grants are to be confined to lands surveyed or hereafter to be surveyed, situate within the tract or territory composed of the Districts of Algoma and Nipissing, and of the lands lying between the Ottawa River and the Georgian Bay, to the west of a line drawn from a point opposite the south-east angle of the Township of Palmerston north-westerly along the western boundaries of the townships of North Sherbrooke, Lavant, Blithfield, Adamston, Bromley, Stafford and Pembroke, to the Ottawa River, and to the north of the rear or northerly boundaries of the Townships of Oso, Olden, Kennebec, Kaladar, Elzevir, Madoc, Marmora, Belmont, Dummer, Smith, Ennismore, Somerville, Laxton, Carden, Rama, and of the River Severn.

The grants are limited to 100 acres, and parties receiving them must be of the age of eighteen years or upwards. The patent for such land is not to issue until the expiration of five years from the date of such location, nor unless nor until the locatee or those claiming under him or her or some of them shall have performed the following settlement duties, that is to say, shall have cleared and have under cultivation at least fifteen acres of the said land, whereof at least two acres shall be cleared and

cultivated annually during the five years next after the date of the location, to be computed from such date, and have built a house thereon fit for habitation, at least sixteen feet by twenty feet, and shall have actually and continuously resided upon and cultivated the said land for the term of five years next succeeding the date of such location, and from thence up to the issue of the patent, except that the locatee shall be allowed one month from the date of the location to enter upon and occupy the land, and that absence from the said land for in all not more than six months during any one year (to be computed from the date of the location), shall not be held to be a cessation of such residence, provided such land be cultivated as aforesaid.

Such land is to be exempt from liability for debt both before the issue of the patent and for twenty years afterward, except for a debt secured by a valid mortgage on the land.

As finally adopted, the bill is much more liberal than it was originally meant to be, several objectionable restrictions being removed during its passage through the House. For example, at first it was intended to reserve to the Crown every quarry or bed of stone that might be found on a free grant lot. This, however, was given up, as were some other stringent provisions. As it is, the Act is not so liberal as might be wished. There is a reservation of pine timber which we think a mistake. Meant, no doubt, to prevent lumbermen and speculators getting hold of land merely for the purpose of stripping it of timber; it will, nevertheless, operate as a hindrance to *bona fide* settlement. We think the lumbermen and the speculators might have been headed off by requiring actual settlement, or by some other provision that would not bear hard upon the settler. We could also have wished a more liberal homestead exemption clause. It is the worst policy we can adopt to be niggardly and stingy toward settlers on our wild lands, especially when we have such competition in this respect on the part of our American neighbors. But notwithstanding its defects, the bill is a move in the right direction, and having made a step in advance, it is to be hoped that by and by our Legislature may be induced to go further. Perhaps in a year or two we shall succeed in getting the Free Grant Act modified in such a way as to make the inducements to settlers greater than they are now made. Too many persons now treat the question as though they felt that when the settler gets a free grant, the obligation is entirely on the side of the settler. The truth is, that the Province is as much under obligation to the settler as the settler is to the Province. If the settler is not a very poor specimen of humanity, the Province has by far the best of the bargain. When this is properly looked at we shall have a more liberal scheme, and things will be made easier for the settler, who must, in the nature of things, obtain his homestead through years of toil, hardship, and privation. Meantime, we trust the department will make the most of the law as it is, and that the regulations upon the subject of free grants will be framed with as much consideration for the settlers as possible. If we can induce the right class of persons to take up the free grant lots rapidly, the country will be greatly benefited by the measure.

New Game Law.

An Act has just passed the Legislature with less than the usual amount of discussion and delay, and indeed has, we believe, taken most parties interested in the matter by surprise. We allude to the "Act for the protection of game in the Province of Ontario," of which the following is a summary:—

The first clause after the preamble enacts that none of the larger quadrupeds of the game class, such as the deer and members of the same family, shall be taken between the "first of December and the first of September in any year." The subsequent clauses provide against the destruction, except within prescribed periods, of feathered game and hares, as follows:—"No wild turkeys, grouse, partridge, or hares,

shall be shot between the first of January and the first of September; no quails between the first of January and the first of October; no woodcock or snipe between the first of March and the first of September; no water-fowl between the first of March and the first of September. Next it is enacted that none of the preceding feathered game or hares shall at any time be taken except by shooting; that no batteries or sunken punts shall be used in hunting water-fowl; that none of the deer class shall be trapped. Further, that none of these animals shall be in any one's possession within the proscribed periods without sufficient and lawful excuse; that no sale of any of them shall take place after fourteen days from the termination of the respective periods. The penalties for the infringement of the above regulations are a fine of not less than \$2 nor more than \$25 for each head of game, and failing the payment of the imposed fine, a term of imprisonment not exceeding thirty days. All game taken in violation of the law shall be confiscated and given to some charity.

Prohibition is made, lastly, against the destruction of fur animals at a season of the year when their fur is esteemed of comparatively little value, by forbidding their capture between the first of May and fifteenth of November.

Such are the provisions of the new Act. Some clauses of it are plainly open to objection. There is an evident blunder in the wording of the clause relating to deer, when it is said that they shall not be taken between the "first of December and the first of September in any year," whereas it is obviously meant to prohibit their destruction between the first of December in any year and the first of September in the year following. Again, to mention no other objection, we see no good reason against trapping certain species of game in proper season. Some of these, such as the turkey and certain water-fowl, may be desirable for domestication; the Bill, however, as it stands, virtually forbids their capture alive at any time. It would be easy to take exception to other features of the Act, which seems to have been prepared and passed too hastily, and we expect that before long it will be found necessary to make considerable modifications of it.

Canada Landed Credit Company.

From the Report of the proceedings published recently, we learn that at the annual meeting of the shareholders of the Canada Landed Credit Company, held on the 5th inst., a dividend at the rate of seven per cent. per annum for the past half-year was declared. The dividend of the Company since its commencement has been invariably at the rate of six per cent. This Company was started ten years ago, with the intention of lending money to farmers, on the security of their farms, repayable by instalments of ten per cent. yearly—eight per cent. to go to the Company for interest, and two per cent. to form a sinking fund for the extinction of the principal. The system thus adopted has been found admirably suited to the necessity of our agricultural population, and has given great satisfaction to the numerous parties who have availed themselves of its advantages. The operations of the Company have, however, been much restricted by the small amount of the capital called up—only \$14 of each share of \$50 having been paid in. The Directors have now resolved to remove this objection by calling up at once \$11 per share further of the capital, which will nearly double the available means of the Company—and not only enable the operations to be largely extended, but give additional confidence to the public in the perfect safety of the debentures and deposit receipts of the Institution.

RENNETS.—We direct the attention of cheese manufacturers to the advertisement of Mr. Martin Collett, in our present issue—a sample of the rennets, which he showed us, was particularly sweet, clean and well cured.

Literary Notices.

THE PRAIRIE FARMER ANNUAL, AND AGRICULTURAL AND HORTICULTURAL ADVERTISER. Chicago, 1868.

We are indebted to the kind courtesy of Mr. C. V. Riley, editor of the Entomological department of the *Prairie Farmer*, for a copy of this valuable and attractive annual. The enterprising proprietors of the *Prairie Farmer*—a journal that fills the same place in the State of Illinois, and the vast prairie country of the west, that the *CANADA FARMER* does in this Province, and the whole Dominion of Canada—have evidently spared no pains to render this new adventure as successful and useful as possible. In addition to the usual astronomical notes, almanac and calendar, it contains some valuable essays by members of the editorial staff in various departments of practical farming and gardening. The first, by Mr. Edgar Saunders, is an illustrated "Chapter on Flower Gardening," and contains lists of the commoner varieties of border and bedding plants, annuals, bulbs, foliage plants, and ornamental shrubs. This is naturally followed by directions for the "Kitchen Garden," by Mr. J. Perian, with a calendar of operations for each month in the year. The "Orchard and small Fruit Garden" is next attended to by Mr. Dunlap, who gives some useful hints on pruning, planting, etc. From the fruit-garden we are taken afield and taught all about "Hop-growing," by Mr. Le Roy Gates, in a capital essay on the subject. "Entomology" is next treated of by Mr. Riley, who gives illustrated descriptions of half a dozen noxious insects that are very troublesome out west, though with one exception unknown to us in Canada. An article on "The External form of the Horse," by Mr. Paaren, V. S., concludes the essays. The remainder of the volume is filled with a useful agricultural and horticultural Directory, &c., &c., and over fifty pages of advertisements; in this latter item the go-ahead Yankees certainly—to use one of their own phrases—"beat us all to pieces," and we should do well to take a lesson from them.

On the whole we must congratulate the publishers on their successful attempt, and trust that it may be the precursor of many future "annuals" through a long series of years to come.

THE AMERICAN NATURALIST; a popular illustrated magazine of natural history, published by the Essex Institute, Salem, Mass.

This capital magazine of popular natural history, has now just completed its first year of issue, and forms a large and handsome volume of nearly 700 pages, illustrated by sixteen beautifully executed full page plates, and 161 wood cuts. Not only has it fulfilled the promises made by its originators in their prospectus; but, contrary to the usual practice, it has even gone beyond that, and we trust, has ere this "decoyed many a reader within the temple of nature, and instructed him, a willing disciple, in some of its mysteries." To all who love nature in its wondrous and varied forms—to all who desire to know something about this beautiful world, and all its mysterious denizens, who combine to make up the harmonious whole—to all who care to open their eyes and ears in their rambles and excursions,—to the sportsman, the naturalist, the man of science, and even the mere idle admirer of what is curious or pretty—to all we can heartily commend this excellent publication as a means of acquiring much interesting information, and obtaining a copious fund of wholesome amusement and pleasure. The various articles are written in an easy, popular style, free, as far as possible, from technicalities, and are the production of the most noted and learned men of science on this continent. All branches of natural history are embraced within its pages, so that it is attractive to persons of every taste, the digger of fossils, the lover of flowers and plants; the ardent hunter of beetles and butterflies, the shell gatherer, the bird

fancier, the microscopist, the fisherman, the disciple of Nimrod, may all find within it pages something relating to their favorite pursuits; nor are the farmer and gardener neglected, for a monthly record tells them what insect ravagers to look for, and how to get rid of them. We bespeak a large circulation for the *Naturalist*, and believe that it will soon be found a necessity to all students of natural history in America; its reasonable price (\$3 in U. S. currency) places it within the reach of all.

WHITLOCK'S HORTICULTURAL ADVERTISER.—This is a quarterly publication, issued from the office of "ALL NURSERIES IN ONE," 37 Park Row, New York, at fifty cents per annum, Am. cy. Two numbers are before us, each containing from thirty to forty pages of reading matter, devoted exclusively to matters of horticultural interest. They also contain the price list of "All Nurseries in One," giving the prices of trees, plants, &c., in this country and Europe. Having a circulation of 20,000 among agriculturists, it is one of the best advertising mediums for agricultural and horticultural stock and implements. Terms:—one page, each insertion, \$35; half a page, \$20; quarter page, \$12. The following liberal premiums are offered for subscribers to this publication: WHITLOCK'S HORTICULTURAL ADVERTISER, one year, fifty cents, with any one of the following first-class articles, to be well packed and sent post-paid. Grapes: Concord, Creveling, Catawba, Diana, Hartford Prolific and Isabella. One dozen of any one variety of the following Strawberries: Agriculturist, Brooklyn Scarlet, Downer's Prolific, Early Scarlet, Fillmore, French's Seedling, Golden Queen, Green Prolific, Hovey, Hooker, Ida, Jucunda, McArroy's Superior, New Jersey Scarlet, Russell's Prolific, Triomphe de Gand, Trollope's Victoria, Wilson's Albany. For \$1, two copies of Whitlock's Horticultural Advertiser and one of the following Grapes: Adirondac, Allen's Hybrid, Delaware, Diana, Iona, (extra) Israella, Ives, Norton's Virginia, Rebecca, Rogers' Hybrids, Scuppernong, one Early Wilson or Kittatiny Blackberry, one Hybrid Perpetual or Moss Rose, four Tuberoses, one Japan Lily, two Tulips, two Hyacinths. A specimen number will be sent to any address for ten cents. From a careful inspection of the above work, we think that nurserymen especially, and all engaged in agriculture or horticulture, will find it extremely useful.

THE AMERICAN JOURNAL OF HORTICULTURE.—J. E. Tilton & Co., Publishers, Boston. This ably-conducted and beautifully got-up monthly magazine has entered on its third volume, and as the Americans in their late war, having beat all the world, "went to work to whip their selves," this periodical, after eclipsing all rivals, is now in a fair way to eclipse itself. The editorial management is most judicious, the articles are first-class, and the typography, paper and press-work are in Messrs. Tilton & Co.'s best style, which is commendation enough for any publication. During 1868 the publishers promise, in each number, two or more illustrations with descriptions of new fruits; one or more illustrations of new vegetables with descriptions, and the same of flowers. The magazine is worth twice its cost to all gardeners of taste and discernment, and cannot fail to impart much useful information, and exert a refining influence wherever it circulates. Three dollars Am. cy. per annum.

THE HORTICULTURIST.—A journal of rural art and rural taste. Published by Messrs. Woodward, 37 Park Row, New York, at \$2 50 Am. cy. per annum. THE GARDENER'S MONTHLY.—Published by W. G. P. Brinckloe, No. 23 North Sixth Street, Philadelphia, at \$2 Am. cy. per annum. Edited by Thomas Meehan. We continue to receive these old established monthlies, and attach a high value to them. Though less brilliant, showy and elegant, than their contemporary and rival before-mentioned, they are more practical and equally useful. They continue to circulate widely among circles of subscribers that have long had

experience of their worth, and we doubt not that in so large a country as the United States there is ample room for all three of the excellent periodicals above noticed.

BETTER FACTORIES.—By N. A. Willard, A. M., of Herkimer Co., N.Y. We have received from the author a copy of this publication, which contains a very full description of the Orange Co. system of butter-making referred to in his address before the Canadian Dairymen's Association. It is an octavo pamphlet of thirty-three pages, and may be had, we presume, by addressing the author at Little Falls, Herkimer Co., N.Y. We advise all who desire full information respecting the new method of butter manufacture, to possess themselves of this little manual on the subject.

THE PRACTICAL POULTRY KEEPER.—(By L. Wright.)—In this recent addition to the Poultry Keeper's Library, Mr. Wright has rendered valuable service to those who raise poultry either for profit or amusement. The work is the production of a thoroughly practical man, who writes from the results of his own experience and close and patient observation.

The subject is treated under the following heads:

1st.—The general management of domestic poultry, with a view to profit—including houses and runs, the system of operations and selection of stock, the feeding and general management of adult fowls, incubation, the rearing and fattening of chickens, and the diseases of poultry.

2nd.—The breeding and exhibition of prize poultry.

3rd.—Different breeds of fowls: their characteristic points, with a comparison of their merits and principal defects.

4th.—Turkeys, ornamental poultry and water fowl.

5th.—Hatching and rearing chickens artificially.

6th.—The breeding and management of poultry upon a large scale.

From the foregoing summary of the contents, it will be seen that the work embraces a wide field, and the subject is fully considered in nearly all its branches. We very cordially recommend the work to all who are seeking information and guidance in the interesting pursuit of which it treats. The publishers are Cassell, Petter & Galpin, London and New York. The work may be procured through Canadian booksellers.

HAND BOOK OF CANADIAN FERNS.—This unpretending but extremely interesting little work is the production of a practical horticulturist and ardent lover of nature, Mr. John Paxton, gardener to Mrs. J. Gibb, Woodfield, Quebec. We welcome with peculiar pleasure the appearance of any treatise on Canadian natural history, a domain full of interest and instruction, but hitherto scarcely touched by any native author. The work before us treats of a most beautiful portion of the Canadian Flora, and is well calculated to assist the naturalist in the study of our native ferns, as well as to guide the cultivator in raising these graceful plants in the garden or conservatory. The number of ferns described is not large, which is in part accounted for by the comparative scarcity of species in our Dominion. The list might be somewhat extended, but the work is, altogether, very creditable, and the author has done good service in this attempt to render a most interesting study popular. The work embraces a brief notice of the structure of ferns, and their classification, directions for their cultivation, and the description of the various indigenous species. This last is not arranged in any scientific order, but simply alphabetically. We would suggest that the introduction, in a future edition, of an analytical table of the genera and species, would diminish the trouble of identifying any particular plant. We cordially commend the work to all our readers. The price is 30 cents; the publishers are Middleton & Dawson, at the Quebec Gazette office.

Agricultural Intelligence.

Agricultural Products and Markets of 1867.

FLOUR.

THE produce trade, proverbially a fickle one, has been particularly so during 1867. Prices have ruled higher than for many years, advancing steadily to a point but seldom reached, and declining suddenly to an extent, and with a rapidity, unprecedented. That the crop of 1866 was deficient in quantity and quality was universally acknowledged, and grave apprehensions were felt in the spring on that account. It was thought that our supplies, both here and in the States, would be inadequate to carry us over until another harvest. United States millers were up to this time large buyers, and our winter accumulations were nearly all shipped to the other side, and realized very handsome profits, so that in the middle of May our storehouses were almost empty. Flour sympathized in the general activity. An unusually active demand existed from Lower Canada and the Provinces, which absorbed the supplies almost as fast as received, and each week showed a material advance over the preceding one, until superfine reached a point known only once before in the annals of the trade. For a time the receipts throughout these Provinces and in the United States were so light, notwithstanding high prices, that people took it for granted that the grain had been all marketed. Suddenly, in the early part of May, the deliveries of wheat in Chicago and Milwaukee became unexpectedly large, evidently liberated so soon as the objects of the speculators there were accomplished. The large arrivals in New York from California, and the heavy shipments advised from thence, as well as a simultaneous delivery by our own farmers at almost every point, hitherto kept back by the unusually late and wet spring, coming altogether, made it evident that the supposed short and inferior crop of 1866 would be found adequate for every want. Then the change to very warm weather, which made winter purchases difficult to keep in condition, caused a wide-spread panic in breadstuffs, and the desire to realize was unanimous. This universal desire to realize on the part of everybody could have but one effect upon the market, and that was an almost unexampled decline, intensified, however, by the inferiority of the flour. Some resolute holders carried their stocks far into the summer, only to make heavier losses than if they had realized at an earlier period. So difficult, if not impossible, was it to get sound wheat, that it is only an act of justice to our millers to state that even those who took most pains to sustain the reputation of their brands, suffered equally with those less careful, and a doubtful reputation became attached to Canadian flour. Last year's harvest, however, we rejoice to state, has been gathered in unsurpassed condition, and, in consequence, never has Canadian flour been so fine in quality, so that once more the character of our mills is established. Let us hope that it will be long ere we lose it again. In fall wheat flour, for the whole year, but little comparatively has been done. The trade in the United States is apparently entirely controlled by the local millers. Never before was so large a business done in coarse flour as during the first half of last year. So active a demand existed, that prices assimilated very closely to those of superfine. Latterly, however, there was a falling off in the demand for this grain, the place of which was, to a large extent, taken by rye flour. The increased favor with which this article has lately been regarded is worthy of attention, particularly by our farmers; for, throughout the summer months, rye flour was sold in Montreal within one dollar per barrel of superfine.

The receipts of flour in Toronto for 1867 are as follows:—

	Bbls.
Received by rail and in storehouses.....	67,953
Consumed in city, estimated at.....	50,000
Receipts in 1866.....	117,953
Decrease in 1867.....	125,089
Decrease in 1867.....	7,136

We estimate that there is over 150,000 barrels of flour, shipped through from way stations on the different railroads, which is handled by Toronto merchants. This would make the total quantity of flour handled last year in this city, about 268,000 bbls.

WHEAT.

The deficiency of the crop and the inferiority and ill condition of a large proportion of it, led operators early in the season to believe that there was an insufficient quantity, both in this country and in the United States, to supply our wants till the next harvest, consequently the prices paid at the opening of the season were relatively much higher than for many years. Were it not for the facilities afforded to mankind for the transport of produce, these calculations might not have been very far astray; the vast shipments of white wheat from California seem not to have been anticipated, and throughout the season these had a very depressing influence on the markets in the United States, who are our main consumers in this grain—notwithstanding which, however, with the assistance of "corners" and "rigs" in the markets in the Western States, prices were forced up to the almost unprecedented prices of \$2 25 to \$2 35 for cargoes of white wheat, f. o. b., and as high as \$2 to \$2 10 for spring. During the whole spring the Western States markets were manipulated by a few hands, who, in some cases, succeeded in keeping back the supplies, and consequently deceiving the multitude as to the quantity of grain actually in the country. The large profit realized by dealers here early in the season, imparted so much strength to these views, that our supplies from distant points, which usually come forward on the opening of navigation, were held back. This, coupled with the almost cessation of receipts from farmers during seed-time, which from wet weather was very late, for a time confirmed the belief in famine prices, and holders thought they could not possibly go wrong, forgetting that such high prices as were then current could not fail to compel economy, of which the practical evidence was a very material falling off in consumption, particularly of the better classes of flour. The sudden increase in the receipts in Chicago and Milwaukee was the first evidence holders had of the fallacy of their opinions. The unexpectedly large deliveries at the various points here also, took them by surprise. The effect of sudden very warm weather on wheat of doubtful condition was immediately apparent, and energetic, but in general very fruitless, endeavors, were made to realize. So wide-spread was the panic that for a time it became almost impossible to make sales; and holders were compelled to incur the heavy expense of turning and airing the large quantities of ill-conditioned grain which they held. The result of this cannot but be apparent. Wheat for which \$2 was refused, sold late in summer at from \$1 30 to \$1 40; and as the amount actually kept over was very considerable, the losses to holders were heavy and very generally diffused. Let us hope that the experience gained during the first half of 1866 will not be without its benefits. While it is no desire of ours that foreigners should by forced and indiscriminate sales make all the profits on our grain, we think it a bad policy of our dealers to refuse handsome profits when such are within their grasp—especially when the keeping qualities of the stocks are not only doubtful, but dangerous. We have every reason to be thankful for the magnificent weather throughout our late harvest, and consequently the unsurpassed quality of our grain. This will to a certain extent avert many of the dangers attendant on the first half of last season's operations.

To the high prices current in England we are indebted for the large export trade in wheat during the fall, very large shipments being made from Montreal and New York, though with the excessive rates of freight &c., the results in general have not been so satisfactory as were anticipated. At present we are glad to notice English orders on this market, and already prices have advanced fully fifteen cents, since the close of navigation. Let us hope that the demand from Europe will continue, and that high prices will be realized for our grain this season, when at a time of financial difficulty they are so much required.

The receipts of fall wheat at this point are yearly falling off. During the past year the figures are as follows:—

Receipts fall wheat, 1867.....	276,685 bushels.
Receipts " " 1866.....	534,272 "
Decrease 1867.....	257,587 "

The receipts of spring wheat to a certain extent make up the deficiency in the receipts of fall. The following are the figures:—

Receipts Spring wheat, 1867.....	558,564 bus.
Bought for local mills.....	50,000 "
Receipts, spring, 1866.....	603,554 "
Increase 1867.....	498,197 "
Increase 1867.....	110,857 "

The following table of prices of fall wheat for the last ten years will be found interesting at the present time:

MONTH.	1868	1869	1860	1861	1862	1863	1864	1865	1866	1867
January.....	0 87	1 60	1 21	1 23	1 00	0 93	1 03½	0 80	1 26	1 78
February.....	0 92	1 70	1 29	1 22	0 97	0 94	1 03	0 92	1 38	1 75
March.....	1 00	1 60	1 42	1 31	0 97	0 91	1 10	0 97	1 37	1 95
April.....	1 01	1 62	1 50	1 33	0 95	0 92	1 00	1 00	1 63	2 05
May.....	0 90	1 08	1 47	1 42	0 96	0 94½	1 20	1 20	1 96	2 20
June.....	0 92	1 87	1 40	1 31½	0 90	0 95	0 87	1 02	1 78	1 76
July.....	1 02	1 60	1 34	1 26	0 98½	0 90	0 89	1 03½	1 59	1 65
August.....	1 25	1 12	1 24	1 17	0 97½	0 88	0 88	1 30	1 27	1 45
September.....	1 27	1 06	1 39	1 25	0 93	0 92	0 91	1 42½	1 57	1 42
October.....	1 20	1 19	1 13	1 29	0 92	1 00	0 91	1 40	1 63	1 40
November.....	1 03	1 32	1 27	1 21	0 90	0 93	0 92½	1 40	1 71	1 42
December.....	1 06	1 20	1 14	1 08	0 90	1 00	0 91	1 15	1 63	1 44

BARLEY.

The crop has never been of so fine a quality as this year, particularly in this section. The absence of rain during harvest enabled farmers to house their crops in splendid condition, and universal satisfaction has been given—the quality comparing very favorably with the shipments of last year. The long drought in summer led operators to anticipate a short crop—say about one-third less than last year, and consequently prices opened at about 70c to 75c, or 15c to 20c higher than the previous season. At one time it was expected that, with a fair crop in the Eastern States, large shipments from the west, and an increased quantity in Lower Canada, prices had reached the maximum—but to the surprise of many the current figures were even higher, say about 80c. The suspension of the Commercial Bank occurring just in the midst of the fall deliveries, caused such a stringency in money, that holders at this time were forced to realize, which they did at considerable loss. The result has been that the bulk of our barley has got into the hands of a few United States malsters, who, so soon as they had secured their stocks, forced the price up from \$1 50 and \$1 60 to \$2 12 to \$2 15 per bushel—an advance unexampled in the annals of the trade for its rapidity. The shipments to Europe have been very small, confined to a few cargoes from Lower Canada. A pleasing feature in the trade is an order direct for a cargo of selected barley for English brewers. We hope that the quality will have proved satisfactory, and that next year we may have an outlet for a much larger quantity.

The total receipts of barley in Toronto during the year amount to 1,079,013 bushels.

The exports of barley reported at the Toronto Custom-house for the last nine years, are as follows: although the exports of 1867 are 257,000 bushels short of those of 1866, the value is rather more:—

Total exports of barley	Bshls.	Value.
" " in 1858.....	720	\$ 444
" " 1859.....	54,532	88,588
" " 1860.....	245,105	165,065
" " 1861.....	251,167	127,255
" " 1862.....	326,033	176,576
" " 1863.....	876,741	329,065
" " 1864.....	435,944	870,921
" " 1865.....	1,197,207	938,706
" " 1866.....	1,212,432	716,506
" " 1867.....	956,095	738,357

The following are the prices obtained for barley in this market, during each month of the years 1865, 1866 and 1867:—

	1865.	1866.	1867.
January.....	cts. 68	cts. 72	cts. 58
February.....	70	66	55
March.....	74	67	58
April.....	74	64	64
May.....	65	66	70
June.....	65	60	68
July.....	55	55	70
August.....	60	55	75
September.....	74	60	80
October.....	78	63	82
November.....	70	67	82
December.....	68	47	\$1 05

OATS.

Oats have been scarce throughout the whole year, and prices ruled steady, and without much change—opening in the spring at about 30c, and advancing to 50c and 55c. So short were our supplies at this point during the summer, that many cargoes were brought from the neighborhood of Kingston, and besides the receipts by rail, at present there is a large quantity in store, received from Montreal. The late crop is undoubtedly short; and in consequence of the large city trade, we shall have to import a considerable quantity to keep up our supplies.

The following table shows the prices of oats at this point, each month during the past two years:—

	1866.	1867.
	cts.	cts.
January.....	31	30
February.....	34	32
March.....	33	37
April.....	32	47
May.....	33	54
June.....	32	48
July.....	32	50
August.....	34	52
September.....	27	52
October.....	31	52
November.....	30	55
December.....	30	55

OATMEAL.

In connection with oats, we observe with pleasure the great improvement in the manufacture of oatmeal which has taken place of late years, causing this excellent edible to go largely into consumption here, and to become, as well, an important branch of export.

RYE.

The importance which has within three years become attached to this cereal, is worthy of note, being mainly attributable to the high price of corn, which has caused it to be used largely by our distillers, and to the increasing favor which the flour made from it has obtained in the eastern markets. But a comparatively small portion is grown in this vicinity, but the receipts at this point for local use, will for the present year amount to about 80,000 bush.—all for distilling purposes. The price last spring was about 70c to 80c—advanced to about \$1, while the bulk of the grain this fall has been sold at from 90c to \$1 per bushel.

PEAS.

The crop of last year was undoubtedly the finest ever harvested in this country, and the prices realized must have made it a very remunerative one to the farmer. The shipments from Ontario and Quebec for the summer of 1867, were upwards of a million of bushels, while for the same time in 1865, they barely reached 60,000 bushels. The results of the early shipments to the States in the spring were all satisfactory, but owing to the heavy arrivals in England about the end of May, and a break in the corn market, considerable losses were said to be made in the later shipments. It may not be out of place to call the attention of dealers to the duty charged on peas by the United States, which is a perfect anomaly, 30 per cent being charged for peas imported for seed, and 10 per cent when for consumption. For a short time during the summer, our neighbors saw fit to charge 30 per cent. on all peas imported. The deliveries of this grain since harvest, at this point, have been very large, and the quality even better than the spring shipments. The demand has been very active, and prices have ranged firm throughout the fall, viz: from 75c to 80c, cargo lots selling at 82c to 83c. The total shipments from the Province of Ontario are computed to be this fall, from 400,000 to 500,000 bushels.

The following table shows the prices paid for peas on this market, during each month in the past three years:—

	1865.	1866.	1867.
	cts.	cts.	cts.
January.....	62	64	72
February.....	65	65	73
March.....	60	66	71
April.....	60	71	77
May.....	68	75	79
June.....	68	75	75
July.....	60	78	70
August.....	77	80	75
September.....	62	88	80
October.....	62	75	82
November.....	63	80	73
December.....	62	66	72

THE PROVISION TRADE.

The year just closed has been one of moderate success to those engaged in this branch of trade. The profits have not been great, owing to the comparative absence of inflation. Provisions have now seemingly settled down to their legitimate value, and dealers can, for a time, look with some degree of certainty for fair profits.

BUTTER.

There is room for reform in every detail of the butter business, as carried on in Canada. The article is injudiciously managed from the outset. Half of the back country farmers keep their dairy in, or adjacent to, their kitchens; the cream sours before it is churned, and all subsequent care cannot render it sweet butter. Hot water is also too freely used to hasten the "gathering." True, we have a large population of good makers, and then again, the wrong salt is used. It should be Ashton's Liverpool salt. Our heaviest dealers have vainly protested and advised in this matter, through the press, by letter and circular, and still the character of our butter is but little better than that made in the Western prairies from long wild grass, and is quoted among the lowest grades in the markets of New York and Liverpool. Apart from the quality of the butter, the style of the package and method of packing are serious defects. In England, during the time of George III., Parliamentary enactments rendered it fineable in £5 for a cooper to issue a package without his name, and the dry tare being branded thereon. That law remains still in force in England, and has been copied and enforced in the State of New York. Tares in Canada are a perpetual source of dispute and dissatisfaction to the dealer. In every transaction he is either the victim or the victimizer.

Referring to the trade of the past season, it must be admitted to have been in a more healthy condition than the preceding year. No inflation of prices, and hence no sudden decline, but a steady business at remunerative rates characterized the year throughout. Shippers suffer such indirect losses from the causes mentioned above, that margins must show large to induce an active trade in the coming season.

The year opened with low rates. Speculation soon after went forth into the butter districts, and prices advanced from 12c. to 13½c. General opinion prophesied a short make, by reason of the abundance of cheese factories. By and by it was apparent that the yield in June and July was equal to those months in former years, and operators began to "figure" on the prospects. August and September were dull months, but with the fall weather holders were firmer, and the "butter is not in the country" again reported. The English market then gave way, and had not a New York local demand arisen, stocks would have gone out at a loss. It is sadly suggestive to the trade in Canada, that each year exhibits less chance of a profit in shipping to Great Britain. The Continent has elbowed us out of the market, mainly owing to the five-eighths proportion of grease we send them, instead of butter—and while on the subject of grease, we may notice the numerous lots of 1866 make that within the past six months emerged from cellars all over the Province, where hopeful holders had secreted them.

Our best market during the fall and winter has been New York—as indeed it generally is—in spite of the 4c. duty; and if the article were made as marketable and eatable as that from other countries, a ready sale awaits it.

CHEESE.

The manufacture of this article may be said to have exceeded itself during the past summer, and it is quite possible that some of the one hundred factories commenced in 1867, will be idle in 1868. This does not abate the confidence of shippers in the better grades of Canadian cheese. Their success, we presume, will lend encouragement to exporting, when the new product appears; and though prices were thought low last year, a higher rate cannot be looked for, unless through the exigencies of war or famine.

The season's manufacture is variously estimated, but we think it would be safe to set it down at upwards of 50,000 boxes for this Province. The quantity will surely outstrip the quality, for it will take years of experience and care to attain the standard of New York cheese, without speaking of the higher English brands.

EGGS.

The year's balance sheet again shows an unfavorable year, for it is the expressed opinion of Canadian shippers and New York receivers that last summer was the most severe on eggs of any in their memory. A high price in early spring gave way until in June

8c. was touched, and a slight reaction in price followed. The market ranged from 8c. to 10c. until the cool weather in October cut off the supply, and advanced the figures. Transportation to the chief market—New York—washes away the margin, and often something more. In fact, some lots during the past summer reclaimed cartage for draping into the Hudson river. Our express line here is a monopoly, exorbitantly high. Our farmers suffer a heavy loss yearly for want of a rival line to compete with the American, in carrying fast freight, such as eggs. Chicago shippers land their eggs in New York city in seventy hours, while ours are not unfrequently fourteen days travelling one-half the distance, at double the cost.

We would say the shipments from this Province during 1867 exceed 12,000 barrels, all of which paid an *ad valorem* duty of 10 per cent. to the American Government.

PORK.

Referring to that part of last season's operations which took place after the publication of our last annual review, we may mention that dressed hogs continued to arrive freely until the middle of March, and were eagerly taken by packers. The number of hogs packed during the season 1866-67, was estimated at about 25,000, a large proportion of which was brought by rail. The average weight was hardly up to the previous year, but the yield of lard was quite equal, giving evidence that farmers were paying more attention to the feeding. In the early part of the season, cut meats were exceedingly slow of sale, but a reaction took place, and holders finally cleared their stocks at fair profits. In curing, greater prominence was given to the manufacture of rolled bacon, smoked hams, &c., for local use, the import duty having shut consumers out from the Cincinnati market, which formerly supplied us with this class of goods. The import duty also stimulated the manufacture of mess pork, large quantities of which were sent to the Ottawa district. The lumbermen had hitherto drawn their supplies from Chicago, but in future, it is likely all this trade will be retained in the country, as our brands were found quite equal to the Western.

This season, so far, we have had fully twenty-five per cent. more hogs brought to market than at this time last year. A large number, comparatively speaking, were slaughtered in the city. The dressed hogs began to arrive very freely before the cold weather set in, and many farmers were compelled to submit to low prices. Many hogs were sold as low as 3½c net, a ruinous price for the farmer, with peas selling at 80c. per bushel. The high price of feed has, without doubt, caused many to market before the hogs were really fit for killing. We have conclusive evidence in this, that mess hogs are very scarce and command a high price. In Scotland and Ireland the bulk of the hogs raised are fed on potatoes, the crop of which, this year, in these countries, has been very indifferent. As a result of this, we find a scarcity of heavy meat in both these countries, and such orders as have come to hand, have been for heavy bacon, if possible. We have been unable to take the fullest advantage of this, having so few heavy hogs of our own. It is estimated variously by packers that the yield of lard will be from 30c. to 50c. per cwt. less than last year. It is gratifying to learn that the reputation of our pork products is steadily improving in England. We have effectually overcome the prejudice that existed against our manufacture. Some large sales of English prime mess pork have been made in London at the highest quotations for American. Several shipments of bacon were made to the Maritime Provinces last year, which netted the owners good profits. This season, also, several lots have been sent, but with what success we are unable to say. We hope to see these markets buy more of our productions when our new Government gets fairly into operation.

Officers of Agricultural Societies for 1868.

ADDINGTON COUNTY.—President, John Sharp, Bath; 1st Vice-President, Sidney Warner, Wilton; 2nd do. James Nimmo, Camden; Secretary Treasurer, J. B. Aylsworth, Newburg. Directors, Donald Fraser, C. W. Huffman, John Percy, Ira S. Daly, R. F. Hope, Miles Stormer, and John Wager.

NORTH HINDING OF OXFORD AND INGERSOLL.—President, J. S. Henderson; Vice-President, James Benson; Secretary Treasurer, W. H. Gane; Directors, Edward Barker, John Markham, — Ryan, Eliza Hall, Wellington Harris, John Thornton, James Chapman, Stephen Roberts.

Poultry Yard.

Christmas Geese in England.

NORFOLK has long enjoyed a most extensive and unrivalled celebrity for her poultry, and especially for her turkeys and geese. The number of these delicious birds sent from the county throughout the year, and particularly at Christmas time, is incredible. Besides those reared in our farm-yards we have geese produced by wholesale just beyond Magdalen gates, by Mr. Bagshaw, who has complete monopoly of the trade, not having any known competitor in the country; and some statistics respecting the rearing of these birds, and of their disposal, will probably not be uninteresting.

Formerly Mr. Bagshaw reared a large number of turkeys, but the demand for geese so increased that he confined his Christmas business to the latter birds, still, however, continuing a general trade throughout the year. In the course of twelve months he produces from 60,000 to 70,000 fowls, of which about 30,000 are ducks, principally of the Norfolk species. About the last week in October the "buying up" is the first preparation for the Christmas sale, more than one-half of the number required being obtained from Holland, and the remainder from various parts of this country. The fattening commences about the middle of November, and the largest number fatted at one time is 12,000—the number fatted this winter. As we have said, this business is carried on just beyond Magdalen gates. The food on which the fowls are fattened is barley-meal and brewers' grains, the former being ground by Mr. Bagshaw himself, so that he may not be exposed to the adulteration which this commodity frequently undergoes; and the quantity of food required is about ninety coombs of barley-meal and sixty coombs of grains daily. The manure from such an immense number of fowls, fed upon such a description of food, is very valuable, and frequent applications for the sale of it are made; but as Mr. Bagshaw holds a farm close by his poultry-yard, he prefers to make use of it himself. It takes about six days to make preparations for the market, and about one hundred dressers are employed in the work, but as the birds are not drawn before they are sent to market, the giblets are bought with them. Of those killed for Christmas, some 4,000 are sent to the goose clubs, and the rest are forwarded to the markets at Leadenhall and Newgate, where they are sold on commission. During the Christmas week no less than from seventy to eighty tons weight were sent away from Norwich by rail, the geese averaging in weight from 9 to 16 lbs.—*Norfolk Chronicle*.

Poultry House.

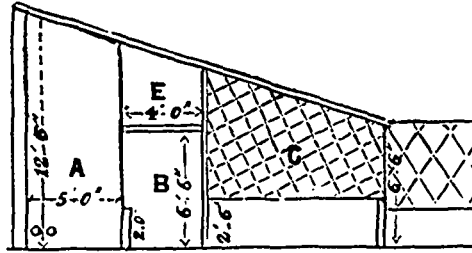
In our last issue we gave a description and plan of Col. Hassard's Poultry House. Reference was also made to Mr. Lane's plan, but want of space prevented our inserting it in the same issue. We now give the plan and accompanying description, taken from *Wright's Practical Poultry Keeper*:

The illustration represents the poultry yard of Mr. H. Lane, the well-known fancier of Bristol, and will be found peculiarly adapted for the rearing of either Spanish or any other delicate breed; protection from inclement weather, as well as convenience of access and superintendence, having been specially studied.

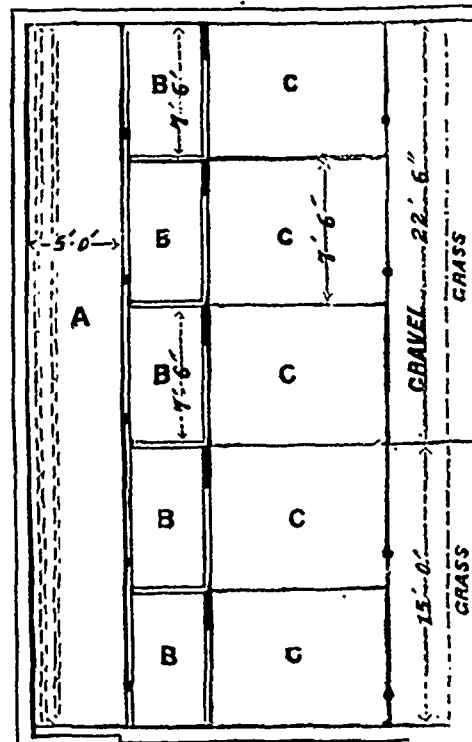
In this design A is a covered passage which runs along the back of all, and by a door which opens into each allows of ready access to every house in any weather. One end of this passage may open into some part of the dwelling-house if desired. The passage should have a skylight at top, and must also be freely ventilated at the roof; to secure this object by having it open at either end would cause draught, and destroy the peculiar excellence of the arrangement. The houses B, for roosting and laying in, are 7½ feet by 4 feet, and the side facing the passage is only built or boarded up about two feet, the remainder being simply netted; hence, the birds have a free supply of the purest air at night, whilst quite protected from the external atmosphere; and can be all inspected at roost without the least dis-

turbance—a convenience of no small value. The nests should be reached from the passage by a trap-door, and there is then no necessity ever to enter the roosting-house at all except to clean it.

A small trap-door as usual, which should be always closed at night, communicates between the house and the covered runs or yards, C, which are 7½ feet by 9 feet. They are boarded or built up for 2 feet 6 inches, the remainder netted, except the partition between them and the houses, which is, of course, quite close. Both houses and runs must be covered with some deodoriser, and Mr. Lane prefers the powdery refuse from lime works, which costs about 1d. per bushel, and which he puts down about two inches deep. It always keeps perfectly dry, and is a great preventive of vermin; whilst if the droppings are taken up every morning, it will require



CROSS SECTION



renewal very rarely. In front of all is a grass run, which should extend as far as possible, and on which the fowls are let out in turn in fine weather.

An additional story, E, may or may not be constructed over the roosting-house, and in case of emergency, by sprinkling the eggs, may be made to accommodate sitting hens; but is not to be preferred for that purpose, for reasons given elsewhere. Every poultry keeper, however, knows the great utility of such pens on various occasions which continually arise, and they will be found excellent accommodation for sick or injured fowls.

F. M. JORDAN, Auburn, Me., uses his hot-house for a henery during the winter. The hens are delighted at living under glass, and "shell out" most liberally.

SPRING POULTRY EXHIBITION.—We learn that it is the intention of the Ontario Poultry Association to hold their next exhibition in Toronto, on the 15th and 16th of April.



Address of W. H. Mills, Esq., President of the Ontario Fruit-Growers' Association.

THERE is, indeed, very little, yearly, added to our stock of knowledge in fruit-growing and its progress which may be considered new; and were we to confine ourselves to this, we should not have much to say; yet in any address of mine, I cannot help but feel the delicate position in delivering such to gentlemen more capable of giving than receiving instruction. Still, I have pleasure in knowing that what may be said is open to the criticism of men so capable of setting right my errors.

It strikes me that the thoughtful observer and lover of fruits among us must have noted the significant fact, that the last ten years of our Pomological history have been quite up to the standard of general progress, as compared with other departments of industry. He sees it in the increased public desire for a greater supply of the finer fruits; and also in the demand. He sees it in the improved qualities brought to market, in the general interest taken in exhibitions, and also in the increased quantities brought forward at all our local and general shows; from the sale of vines and trees at our nurseries throughout the Province, and from the Reports of the Minister of Finance. Now this progress is gratifying to us, who feel that the peaceful and ennobling occupation of fruit-growing affords the least temptation to moral degradation. Let us cast our eye over the tables of the trade and navigation of the Province; in these Reports we see that the export of green fruit during the fiscal year ending June 30th, 1867, amounted to 17,535 barrels. This gave us a revenue of \$39,290. The United States received \$27,420 worth; Great Britain \$8,001 worth; and the balance went to the Provinces. This, as compared with previous years, shows a gratifying increase. The *Boston Herald* says, that "the various qualities of Canadian apples have now reached such a degree of excellence, that they are greatly sought after and eagerly bought up for the American market." A few years ago it was just the reverse. It is notorious that in many sections of New England the apple crop has come to be a total failure. Many writers have attempted to account for this phenomenon. It may probably be owing to the clearing up of the forests, thus removing one great obstacle to radiation of moisture, which would be increased by underdraining, and other applications would so far modify the humidity of the atmosphere, that the apple-tree, which delights in moisture, is deprived of its natural element of subsistence. Be this as it may, those New Englanders are now compelled to send abroad for their supply, so that we are not surprised when Baldwin's, Spitzenburghs and Greenings are quoted at \$6 per barrel. All that is necessary to extend this trade with the States is a strict attention to proper cultivation, care on the part of the producer in his selections, and packing none but the very best for shipment. And to secure an application of this principle, I should recommend the formation of a competent committee, to report to this Association upon the best classification or grade of selection in fruits, such as 1st, 2nd, 3rd. The finest and largest specimens of its kind, free from blemish, 1st grade; second in size, but free from blemish, 2nd grade; small, injured, bruised or worm-eaten, 3rd grade. The first will always command the highest price, the second, pro-

bably 30 per cent. lower, and the third ought to be compelled to stay at home. This would be justice to the producer and purchaser, and at the same time educate the public mind to a standard of excellence and comparison. It should be understood by all parties that the method of carrying fruit to market should be one of the conditions of the grade; for example, no fruit, be it otherwise of the first grade, shall be so considered if brought to market in bags. No fruit can be thus handled without injury. Many other things will present themselves to the committee. No doubt the press, throughout the Dominion, would give free publicity to the Report of such a committee, on the ground of public interest.

Although the exports for the fiscal year ending June, 1867, show so favorably, I have not the least doubt that when the next Report is made up for June, 1868, the exports will be found to exceed those of the previous year. I am acquainted with several gentlemen in our immediate locality who have shipped many hundred barrels this season to Montreal, New York, and Liverpool; they were some of the finest specimens of apples, thoroughly selected, and packed upon scientific principles. These command something over one dollar a barrel more than the same shipped without special attention. We also have some favorable accounts from the second and third concessions of Norwich and from the County of Halton. The *Milton Champion* states that Messrs. Moore and Orr, of Oakville, have shipped from that port alone 2,500 barrels, this season, the cost of which, delivered at the vessel, averaged \$1 75 per barrel; these have been shipped direct to Liverpool, Glasgow and New York, by way of Oswego. Mr. James White has also shipped some two or three hundred barrels to Great Britain, and no doubt others have done the same, as the crop this year was good, and the traffic greatly on the increase; we may, therefore, look forward to the next official Report with much interest. If we bear in mind the fact that our facilities for commercial relations are becoming more perfected from year to year, no cause for fear (as some nervous people fancy) need be entertained, that too many vines and trees can be planted, and the market thereby become glutted with fruit; they may as well puzzle their brains with the idea that a time is coming when the coal fields of the world must give out. All developments are governed by natural climatic forces, the human race included. The tropical productions are distinctive; the frigid and temperate zones, also, have their own peculiar conditions of soil and climate, and from these only can those indigenous productions be profitably supplied. Therefore, the people of the apple region need not have any fear of a world's competition. The whole matter resolves itself into a natural reciprocity: the Indies want our ice and apples; we their spice and figs. But to keep more strictly to the subject of fruit-growing, I may be permitted to say, that the apple and pear, the peach and the plum, are not the only fruits for which our soil and climate present favorable conditions for development; all the smaller fruits, as well, may be produced in great abundance. The fact has been established, that where Indian corn can be successfully grown, there, too, the grape-vine finds a suitable and natural element in heat and dryness, two important conditions in its successful culture. We find these conditions remarkably prominent in the counties of Lincoln and Welland, Elgin, Essex, and Kent. We have already made a commencement toward the production of this healthful, and, above all others, to me the most grateful and delicious fruit; we, therefore, look forward with extreme pleasure to the time, as not far distant, when the Dominion of Canada may boast of its grapes and wine as articles of export. Though we may never be able to rival the far-famed Syrian clusters, in their marvellous weight and magnitude of bunch, we may, however, take as many pounds in the aggregate from an acre of ground; and this, for commercial purposes and manufacturing of wine, is all we require. The almost unlimited number of new varieties recently introduced, indicates an effort to produce a grape equal in flavor to the foreign kind. I have no doubt of the success of this effort through hybridization and proper selection, and by studying the suitable conditions of growth for the young seedlings. Under these circumstances, it more than ever devolves upon this Association, as protectors of the public interest and as directors of

public taste in fruit matters, that no haste be exhibited in the recommendation of new fruits. That much diversity of opinion exists touching the qualities and hardness of the same kind of fruits, there can be no doubt. This arises from the fact that there can be exact identity in soil, climate, and position or modes of cultivation; it follows that no particular fruit can become a universal favorite, but may be a local gem of excellence. Some may have a wider range than others, still the fact remains the same; and were the originators modest and candid enough to let their patrons know this, much chagrin and disappointment would be avoided. Our efforts should be to secure the production of at least as good, if not a better fruit, than the best now known. The road through hybridization to produce new varieties is unlimited; no man need be envious of the efforts or success of others. The field is too large for collision. If any of our friends succeed in producing a really good grape or other fruit, we can afford to be proud of his success, because we feel that it may be still further improved by judicious hybridization. I should, therefore, deprecate any effort to influence members of this Association to make our Society subservient to any private interest, either in this direction or any other, that may have a tendency to falsify the second article of our constitution.

Which is the Best Winter Apple?

To the Editor of THE CANADA FARMER:

SIR,—The question is often asked which is the best winter apple, we will suppose, for all purposes. At one time the Baldwin received the most votes at the Fruit-growers' Convention of western New York; but of late, King of Tompkins County appears to be the king of all the keeping apples.

The Baldwin is not the apple it was advertised to be; the quality is not quite first-rate, and the tree is not hardy; but it is an apple of long endurance, and will stand as much exposure as any other variety.

Northern Spy is a very fine apple in every respect, but requires careful handling, and is uneven in size; the tree requires a long time to come into bearing.

Golden Russet is a very fine market apple, being even in size, and one of our very best table apples, always commanding the highest price.

Ribston Pippin is our most valuable apple to ship to a foreign market; it contains the most real virtue, is worth the most per bushel of any of our long list of apples; but it is not quite so productive, and not so hardy as some. King of Tompkins County appears to be the apple for the Dominion of Canada, an apple without a fault, according to some of our most experienced fruit-growers. If this is the case, why not plant it all over the Dominion? This is a subject worthy of our most serious consideration, and, unfortunately, those having the most experience are not the parties most likely to write on this subject. The Fruit-growers' Society, of Ontario, recommend a list, which is not very long, and still leaves the matter undecided. B. L.

Cobourg, Jan 11th, 1868.

The Grape Question.

To the Editor of THE CANADA FARMER:

SIR,—In my rambles over the country this fall I found some very good grapes. It is said by many that we cannot grow the grape in Canada; but if they had been with me in my boyish days, rambling up and down the shores of Lake Ontario, they would have found at least wild grapes in abundance; and the country that will grow the fruit spontaneously, must surely be suitable for its cultivation. On the 21st September last, about forty miles west of Kingston, and five miles from Lake Ontario, I found Diana grapes quite ripe, growing on a close board fence running north and south, without any particular care. Here I sat down and ate my first grapes for the season. On looking around I found Concord clusters hanging loaded with fine bunches, just putting on their bloom. About midway between Kingston and Toronto I found Concord clusters hanging in large clusters, of what quality I did not determine, but fine to look at, on an open trellis, and not far off was a vine of Diana, laden with quite ripe fruit. This locality is bordering on the lake. On the 19th of September this

grape figured at the Horticultural Exhibition, taking prizes as Concord and Delaware; so much for judges not knowing Diana from Delaware. Now, what we want to know, is something more about grape growing in this country. It is not enough for me to say I have climbed high trees and plucked grapes off their tops, or that I have seen grape vines fifty feet long and as many years old, not a mile from where I write; we want to know all about the Adirondac, the Allen's Hybrid, the Creveling, the Iona, and the Rogers' Hybrid. Mr. Arnold tells us we have to wait another season for his new seedlings. Why wait another season? If the grape-growers of Ontario will give us their experience in all the new and valuable kinds, we will plant immediately, and not wait, for Canada is to be a great grape-growing country. FOX.

ONTARIO, January, 1868.

A GERMAN who went to Kelly's Island, Lake Erie, in 1853, with \$600, to grow grapes, is now worth over \$50,000.

J. W. Griswold, of Wethersfield, Conn., informs the *New York Horticulturist* that he has preserved his trees from the canker-worm by piling coal-ashes around their trunks.

In the Niagara River there is an island of 120 acres, where peaches never fail. On both sides the water, flowing rapidly, never freezes, so the trees are not killed with intense cold. A few years since, this small tract was purchased for \$5 an acre. Last year the crop of peaches alone sold for \$7,000.

RABBITS AND FRUIT TREES.—A correspondent of the *Western Rural* gives the following directions for protecting trees from injury from rabbits; he says he has tried the plan for twelve years without a failure: "Take sweet milk and add soot sufficient to make a thin paint, and wash the tree or rose-bush as far as the rabbits can reach. This should be done on a dry day, so as to dry before any rain. I have found one application sufficient for the winter. Let the farmers try this one season, and I will insure satisfaction."

BLACK KNOT IN PLUM TREES.—D. D. Walsh, of Rock Island, Illinois, a well-known entomologist, says that all his examinations have resulted in the conviction that the black knot on the plum tree is the effect of a fungus, and is not a disease nor a gall. He thinks the spores or seeds are formed about the end of July, in latitude 40 deg. 30 min., and therefore if the excrescences be all cut off and destroyed by the early part of July, an effectual stop will be put to their farther spread.

Advertisements.

TO AGENTS!

GRAPE VINES AT TEN CENTS.

DELAWARES, Concord, Diana, Operto, and Hartford Prolifics, with good roots at \$10 per 100, if cash accompanies the order. Address, W. W. KITCHEN, Grimsby, Ontario. v5-4-51

TORONTO, DOVER COURT.

One Thorough-bred DURHAM BULL,
One " HEREFORD,
One " GALLOWAY, and
Two GALLOWAY COWS, FOR SALE by
v5-3-61

R. L. DENISON.

TO CHEESE MAKERS.

ON receipt of P. O. orders or remittance by post, we will forward to address the amount in good, sweet and seasoned rennet. Twenty-two cents each. Imported to supply the trade. Order early.

MARTIN COLLETT & SON,
465 Yongo Street, Toronto
v5-4-11*

FARMS AND WILD LANDS.

46,500 ACRES OF LAND FOR SALE in ninety-three Townships of the Province of Ontario. Lists sent free on application to

W. HOPE, Land Agent,
2 Victoria Hall, Meinda Street, Toronto.
v5-4-11*

THE SUBSCRIBER HAS FOR SALE

FOUR GALLOWAY BULLS,

One and two years old. Terms cash.

ALEX. KERR,
Westminster, London, P.O.
v5-4-11*

NEW AND CHOICE PLANTS! BY MAIL.

I WILL send 1 dozen of good strong plants of any of the following choice varieties of Strawberries (post paid) to any part of the Province, on receipt of \$1, or will pack and deliver them at the express office for \$3 per 10. JACQUIN or KNOX - 700 - The finest most profitable, and highest recommended of any of the new varieties. METCAL'S EARLY - A promising new variety very early. NEW JERSEY SCARLET and BROOKLYN SCARLET - The two prize berries of the New York Tribune. AGICULTURIST - The prize berry of the American Agriculturist. SMITH'S SEEDLING - A new variety of my own, of excellent flavour. Also, WILSON'S ALBANY and TRIOMPHE DE GAND - At fifty cents per doz. \$1 per 100, or \$4 per 1,000. I will also send by mail (post paid) good strong vines of any of the following varieties of new and valuable Grapes, on receipt of the price annexed, or pack and deliver at express office at the price per 100. S. LEM - Pronounced by Rogers as the best of his hybrids - \$1.60 each. IONA and ISRAELITA - Dr. Grant's new Grapes - 75 cents each; \$5 per 100. CREVELING - Very early, hardy, and of excellent flavour. Took the first prize at the Provincial Fair, 1856, as best open-air Grape - 50 cents each; \$5 per 100. ONTARIO - The largest of the out-door Grapes - 50 cents each; \$5 per 100. DELAWARE, CONCORD, HARTFORD PROLIFIC - 40 cents each; \$5 per 100. DOOLITTLE'S BLACK CAP RASPBERRY - \$1 per doz.; \$4 per 100. KITTATINNY and WILSON'S EARLY BLACKBERRIES - 50 cents each; \$5 per doz. GOODRICH'S EARLY POTATOES - The best of all early - \$5 per brl., delivered at railroad or express. ORDER EARLY, AS MY STOCK IS LIMITED. Address, A. M. SMITH, Grimsby, Ontario. v5-4-2t

FARMERS!

THE best Family Sewing Machine for you is the New Letter A Singer. Though the price is high - \$50 - you will find the best the cheapest in the end. NORRIS BLACK, Agent for the Singer Sewing Machines and manufacturer of Artificial Legs and Arms, 18 King Street East, Toronto. v5-4-1t

JONES & FAULKNER,

(Late J. Jones & Co.)

Dairymen's Furnishing Store!

DEALERS IN BUTTER AND CHEESE, No. 111 Genesee Street, Utica, N. Y.

DAIRY necessities of every description always on hand, particularly Pure Annatto, an article in much request among dairymen. Special attention given to Canadian orders. v4-14-1t

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 3oz box will clean twenty sheep. HUGH MILLER & Co., Medical Hall, Toronto. v4-14-1t

FRUIT, FOREST AND ORNAMENTAL TREES FOR SPRING OF 1868.

THE largest stock in the country. For sale in large or small quantities. A descriptive and illustrated priced catalogue of Fruits, and one of Ornamental Trees and Plants. Sent, pre paid, for 10 cts. each. Wholesale catalogue FREE. ELLWANGER & BARRY, 31 Hope Nurseries, Rochester, N. Y. v5-3-6t

THE BEST SHEEP MARK YET INVENTED.

IT is made of tin, stamped with name and number. Is cheap, does not wear out, and looks well. Price three cents each. ARCHIBALD YOUNG, Jr, Sarnia, Ont. v6-3-7t

JOSEPH HALL MACHINE WORKS,

OSHWATA, ONTARIO, Dec. 18th, 1867.

THE "BERWICK" OR "ABELL" GEAR.

AN effort having been made to induce the public to believe that they were incurring a great risk in purchasing Threshing Machines at this establishment, having the "Berwick," or as it is sometimes called, the "Abell" Gear attached, we would say, that some time since, Mr. John Abell, who claimed a Patent thereon, brought a suit in the Court of Common Pleas against the undersigned, to recover damages for an alleged infringement. The case was tried at Toronto at the last Assizes, and without hearing the testimony ready to be offered by the undersigned, the Court decided that the Patent of Mr. Abell was null and void. We shall, therefore, in future supply Machines with this Gear without any additional charge. Complete sets of this Gear will be supplied to parties wishing to attach it to Machines now in use at \$16.50 each, the price of the Double Bevel Gear. Parties wishing to change Gears will do well to order early. For further information, address F. W. GLEN, EXECUTOR, Oshawa, Ont. v5-1-10t

Duncan's Improved Hay Elevator.

PATENTED April 13th, 1867

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

ATTENTION!

DAIRYMEN AND OTHERS!

H. PEDLAR, of Oshawa, Manufacturer of all kinds of Cheese Factory apparatus generally, took the First Prize and Diploma at the Kingston Exhibition in 1867, for the best cheese vats, over all other competitors. Parties intending to start dairies would do well to send for my price list, as I have imported direct from the English manufacturers a very large stock of large Tin Plate, for the express purpose of making Vats and Cans, and am able to supply factories throughout with everything at a price that will pay well, by addressing H. PEDLAR, Box 100, Oshawa. v4-24-1t

Markets.

Toronto Markets.

"CANADA FARMER" Office, Feb. 13th, 1868. The produce market has slightly improved since our last review, and a small advance has been established in both flour and wheat. The tone of the market is still upward. Flour - Latterly, the views of buyers advanced, and yesterday a lot of 1,000 barrels No. 1 superfine changed hands at \$7 10, or an advance of 10c on the quotations of last week. This may be taken as the present current rate for No. 1 superfine on this market. In extra and superior there was nothing doing. Prices of these grades are entirely nominal. Wheat - The market has been very dull; although the receipts have been fair, few lots have been offering. Sales were confined to a few car loads of spring, which sold at \$1.64. The tendency of the market being upwards, probably rather higher figures would be paid for large or choice lots. Ordinary good samples would bring that price if pressed upon the market. There was very little fall wheat offering. One or two lots sold early in the week at \$1.75; good samples would now, probably, command a higher price. On the street market, although there has been excellent sleighing, the receipts are very light. Prices have ranged from \$1.60 to \$1.64 for spring, and \$1.75 for fall. Oats - The receipts have been very heavy. A few car lots sold early in the week at 59c; some lots were offering within the past few days at that price, but could find no buyers. Barley - Since our last report the market has been excited, and prices have advanced to a point far above anything ever before reached. As high as \$1.25 was freely paid for car loads of choice barley within the past three days. This sudden advance in prices was mainly caused by the presence in our market of several Chicago buyers, between whom and our local brewers, who have not yet completed their stocks, there is great competition. On the street market \$1.25 was also paid for choice samples. Ordinary to good selling at from \$1.10 to \$1.20, with very little coming in. Peas - The market has been very dull, no lots were offering. It is therefore impossible to give reliable quotations. There were no receipts on the street market. Oatmeal - No sales took place during the week - the last reported was at 56c. Bran - No sales reported - worth from \$18 to \$18.50 per ton. Hay - Selling at from \$18 to \$19. Straw - Selling at from \$11 to \$12. Pork - The market is generally weaker, English prices offering no inducements to packers. Mess held at \$18; Primo Mess \$14.60. Bacon - No lots changing hands; packers shipping in the hope of an advance; Cumberland offering at 7c boxed. Cut Meats - In rather better demand. Hams and rolls, smoked and spiced, 11c; bellies 10c; shoulders, green, 6c. Lard - Higher and finding quick sales at 9 1/2c for shipment. Butter - Unchanged since last report; stocks very light; choice wanted at from 19c to 20c; common, dull and irregular at from 12c to 14c; rolls wholesale at 16c to 17c; retail on the market at 24c to 26c.

Wheat - In light request, at from 10c to 10 1/2c. Eggs - Only retail demand, selling at from 18c to 20c. Dried Apples - Selling at from 8c to 9 1/2c. Dressed Hogs - Market very unsettled. Several lots having been forced on the market, prices have declined. Hogs offering in car lots at from \$5.25 to \$5.50; Mess still selling at \$6. Street receipts very light; prices \$5.40 to \$6.10 according to quality. Hops - The following are the current selling rates in this market: Inferior per lb. 25c to 30c, medium, 30c to 35c, good, 35c to 45c; fancy, 45c to 60c. Hides and Skins - There is the usual demand at full prices, with very little stock in market - Hides, green, rough, per lb., 6c, green, salted, and inspected, 7 1/2c, cured, 8 1/2c. Calveskins, green, 10c; cured, 12 1/2c, dry, 18c to 20c. Sheepskins, 70c to 75c. Pelts, 70c to 75c. Petroleum - Market dull and unchanged, current selling rates are: Water white, car load, 13c, do, small lots, 14c to 15c; straw, by car load, 14c, do, small lots, 15c to 16c; amber, by car load, 13 1/2c to 15c; do, small lots, 14c to 15c. Coal and Wood - There is a good demand for both coal and wood, and prices remain unchanged - Soft coal, \$6.50, Scranton egg, \$6.50, Pittston, \$6, Lough, \$6.50, wood (mixed), \$6.40; wood (hard), \$7.

THE CATTLE MARKET.

The fairs last week at Guelph and Elora were attended by a large number of buyers, and the principal part of the cattle offering was purchased by the Hamilton packing house, and for the United States market, at from 4 1/2c to 5c per lb. live weight. Trade has been very dull in this market; very few cattle have been offering, and there has been very little demand. First-class or extra cattle sold at from \$7 to \$7.50 per 100 lbs. dressed weight; 2nd class sold at \$6 dressed weight, or \$4 live weight; 3rd class cattle were bought at \$5 per 100 lbs. dressed weight. Sheep and lambs have been dull of sale. There is no inquiry, and prices are unchanged. First-class sold at \$5 each; 2nd class, \$4; 3rd class, \$3. No lambs in the market. Calves have been in demand at from \$4 to \$7 each.

Chicago Markets, February 12, noon. - Wheat - receipts 14,000 bushels; shipments, 3,000 bushels; No. 2 in store, \$2.01 1/2. Corn - \$1 1/2; receipts, 58,000 bushels; shipments, 13,000 bushels. Pork - dull at \$22.60.

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