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# Farming

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Farmers and Stockmen

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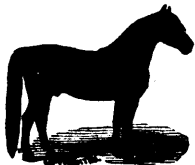
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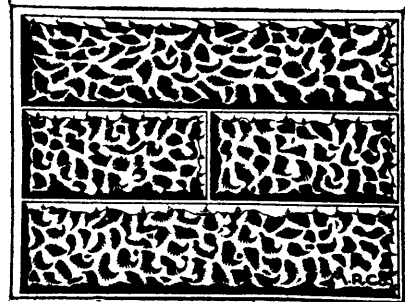
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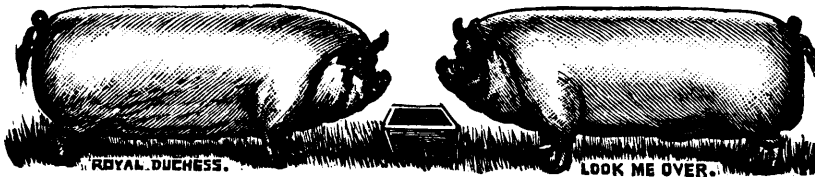
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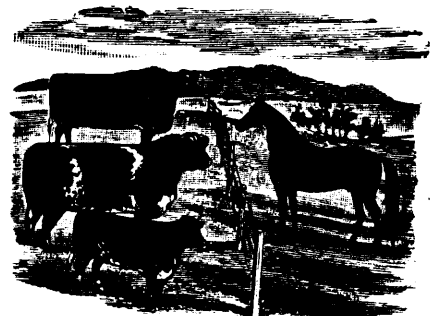
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# FARMING

VOL. XVII.

NOVEMBER 21st, 1899.

No. 12

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## Farm Implement News

Special attention is directed to our farm implement department, which appears on page 320 of this number. We think everyone will agree with us that the matter it contains is practical and timely and will fill a long-felt want in the way of supplying up-to-date information on all farm machinery matters. Direct your neighbor's attention to this new feature of our paper and point out its advantages to every farmer.

## Ontario's Agricultural Resources

### The New Premier Announces His Policy for Their Development

There is certainly something very encouraging for the Ontario farmer in some of the remarks made by the new Premier, the Hon. Mr. Ross, in announcing his government's policy last week. We are glad indeed to note the strong position he takes in regard to the development of our agricultural resources and the importance of educating the farmer along the lines of improvement in the quality and quantity of Ontario farm products. While a great deal has been done in the past by the Local Government in developing the resources of the farm, yet there is room for more to be done along these and other lines. The farmer, to use a somewhat hackneyed phrase, "is the backbone of this country," and a new government or a new leader shows his sagacity and foresight in making the development of our agricultural resources one of the chief planks in his platform. We trust that the new premier's ardor and zeal for the farmer and his interests will not cool as the responsibilities of Government leadership grow upon him.

There was one remark of the new premier's to which we would like to direct special attention just here. He spoke of spending more money, if the finances of the province would allow it, on educational work through the farmers' institutes, the agricultural college, dairy schools, etc. In this list we think the agricultural college is deserving of first attention at the present time. This institution, existing as it does solely for the benefit of the Ontario farmer,

has now reached a position in which more money must be expended on it and that very shortly, if it is to maintain its place and keep pace with the rapid progress that is being made in agricultural thought and teaching on this continent. The college has now reached a position of usefulness and popularity that it has never had before. During the present term there are more students in attendance than can be properly accommodated, many of them having to board at private houses in the city of Guelph and elsewhere. This condition of affairs is certainly very gratifying. But it has a serious side to it. This increased attendance and greater demand for knowledge along agricultural lines necessitates the enlargement of the college buildings and an increase in the staff and its teaching power. This is something we think that should occupy the attention of the new Government at the earliest opportunity.

It would certainly be a suicidal policy at this juncture, when there is such a demand for higher education along agricultural lines, to have the work of the college in any way hampered because of lack of accommodation for all students who may care to enter or of insufficient teaching equipment. The agricultural college must continue to be, and in a greater degree than ever before, the centre from which must go out those influences and teachings that should mould agricultural education in this province.

While on this topic we might point out the great advantages that would accrue to the home life on the farm if the teaching of domestic science were included in the college curriculum. The farmer will never be able to make the best use of the agricultural teaching he is now receiving or to practice successfully those principles that make for economy and progress in modern and up-to-date farming unless he is properly housed and fed. So we say, widen the scope of the college curriculum and make it possible for the farmer's daughter to receive a training that will enable her to manage the farm home as successfully as the farmer's son is trained to manage the farm lands.

With one or two exceptions we agree with all the Hon. Mr. Ross said in regard to the development of our agricultural resources and had we more space would like to go into the matter more fully. The establishment of cold storage chambers at central points of shipment, cheaper freight rates, and better transportation facilities in getting our products to the British market are certainly along the right line of progress and development. Give the Ontario farmer half a chance and a good market for what he produces and he will hold his own against any agriculturist the world over.

We must confess, however, to having some doubts as to the chilled meat scheme. At the present time this country is experiencing a dearth of prime export cattle and enough choice animals can hardly be found to supply the demand for that quality. There are plenty of an inferior grade but these are hardly suited for the development of a chilled meat trade. If we are to compete with Australia and especially with the Argentine in this trade we must be able to supply the finest quality of chilled or dressed meats. However, with the large importations of good breeding stock that have been made during the past year or two and the improvement that is now taking place in the quality of our home bred animals, we may look for better things in the way of good export cattle before very long. But until then we question the advisability of any enlarged effort to develop the dressed meat trade.

## Poultry-Raising for the Average Farmer

The poultry industry is fast becoming a most important one in this country. Its future development will depend largely upon the attitude of the average farmer towards it. If he takes hold of the matter as he should and as he has ample opportunity for doing, there is no question that our dressed poultry and egg trade can be enormously increased. But there are many signs that go to show that the Canadian farmer is more interested in the question than ever before. Realizing this and believing that some definite and practical information would be helpful at this juncture, we submitted the following questions to a number of experienced poultrymen :

- (1) How many fowls, including turkeys, geese, ducks, etc., might be kept on the average Canadian farm without interfering very much with the other farming operations?
- (2) What kind of fowl would be most profitable for the farmer to raise for egg production? for fattening purposes?
- (3) Can fowls be profitably kept on the farm without a proper hen-house?
- (4) In fattening poultry, would the average farmer be able to produce all the feed required on his farm?
- (5) What would be a fair income for a farmer to realize every year from his poultry?
- (6) Will the average farmer be able to successfully fatten poultry for the British market?

The answers to these questions will be published during the next few weeks in our correspondence columns. Farmers should read the reply of Mr. A. G. Gilbert, manager Poultry Department, Central Experimental Farm, Ottawa, which appears in this issue.

## Government Encouragement to Agriculture in Switzerland

By F. C. Harrison, B.S.A., Bacteriologist, O.A.C., Guelph (now Studying in Switzerland).

Switzerland, with a total area of about 24,300 square miles, or half the size of Ontario, has a cultivated area of 17,500 square miles. This arable land is generally in a high state of cultivation, although the methods to attain this end might appear very primitive to a Canadian farmer; very few modern implements are used, but as labor is very cheap the want of them is not generally felt. The country is divided into twenty-two cantons, each looking after its own affairs, and almost equivalent to our provinces in Canada. The seat of the Federal Government is at Berne, and I shall give, briefly, a few statistics and facts relative to the assistance given to agriculture by the Federal Department of Agriculture.

*Theoretical and Practical Schools of Agriculture.* There are four of these situated in different parts of the country. They give what is equivalent to the two years' course at the Ontario Agricultural College and also do experimental work. The number of pupils in these schools during 1898 was 137, and the total expense \$20,000. These four schools also give short winter courses, lasting from November to May, and in addition, there are five others which only give the shorter course. The number of pupils in 1898 was 364, and the total expenses about \$20,000. I should also note that at four of these places the agricultural school is in connection with the University, many of the members of the University staff being also teachers in the school. The horticultural school is at Geneva, and costs about \$5,000 per year.

*Dairy Schools.* There are three of these, with forty-eight pupils in 1898, and cost \$8,000 per year.

*Experiment Stations.* Whilst there are no experiment

stations as we understand them in America, there are several places at which experimental work along one or two lines is done. For instance, there are five viticultural stations, which also accept a few pupils (21 in 1898); they cost, in 1898, \$24,000, and they are principally engaged in studying the fungous diseases of the vine, the faults of wine, and also measures to be used in combatting the phyloxera. This insect is a terrible pest, and although very drastic measures have been taken, they have not been altogether successful. In the cantons of Tessin and Geneva, the conflict with this insect has been abandoned, and the vineyards are being replanted with American vines. In the other vine-growing cantons severe measures are still taken, and if the phyloxera is found the vines are often at once destroyed, a subsidy of 50 per cent. of the value of the vines being allowed the owner. This amounted to the sum of \$54,000, and a further sum of \$80,000 was employed in combatting this insect.

The San José Scale having been found on California fruits imported into Switzerland, the importation of fruit and living plants from America is forbidden. At one of these viticultural stations the principal work consists in furnishing the necessary stocks to reconstitute the vineyards in which the fight against the phyloxera has been abandoned. There are three stations in which cultural experiments are carried on, but at one of them only pot or vase experiments are tried. There are also three stations for testing the purity and germination value of seeds. These cost during the last year, \$35,000.

A very fine and well-equipped laboratory is now in course of construction for the dairy bacteriology and chemical analysis. Only research work will be done, as there is no provision made for students.

*Farmer's Institutes, etc.* A sum of \$11,000 is devoted to agricultural conferences and special courses in agriculture, given by different cantons. The number of meetings held was 243, but no information exists about the number attending. As a rule, they last two, or even three, days. The number of principal societies is 5, and they received in 1898, \$12,000, which was expended on the distribution of agricultural publications at a reduced price, meetings, prizes and exhibitions.

*Improvement of Horses.* The Federal Government entirely supports a large depot of stallions, which are stationed all over the country. This has been done for many years and, judging from the horses I see, it has brought about a great change in the character of the stock. On account of the mountainous nature of the country, horses are much used for carting, postal service, etc., and I can say with truth that I have seen extremely few really bad-looking horses. The cart horses have plenty of substance, with good bone and short to medium legs. They are also well broken; reins are seldom used, and, when employed, generally on the off-horse only. I also had the opportunity of seeing several cavalry regiments. The horses were gathered from all over the country, as the soldiers, there are virtually militia, with compulsory service. These horses were a very useful looking and serviceable lot, many showing marked hackney or thoroughbred breeding. Last year 11 stallions were purchased, at a total cost (including expenses of transport, the commission, etc.) of \$2,225 each. Altogether the state owns 112 stallions of the following breeds: Thoroughbred, Anglo-Normans, Hackney, and Percheron. In addition there are a number of "Approved Stallions" belonging to private individuals to whom the Government pays so much for their use. During 1898, these horses covered 6,218 mares. Their total value is estimated at \$109,000 and the expenses for forage, grooms, veterinary needs, shoeing, etc., was \$32,000. The service fee which was \$3 in 1898, has now been reduced to \$1.20.

*Improvement of Cattle.* A similar system to that outlined above is also instituted for bulls, but the Government does not buy or keep the animals, but "approves" certain animals. These bulls are selected at the monthly cattle fairs held all over the country, and after careful judging certain animals are approved, and the owners of these receive

a Government grant, in return for which the bull is used for the improvement of stock in the neighbourhood. I saw one of these gatherings a few days ago. About 300 animals were exhibited of the noted Simmental breed. Four of the best bulls were selected by the judges and duly certificated. I was much struck by the great uniformity of these animals, nearly all of the same colour and shape. The amount expended for this purpose is \$80,000.

There are also a number of smaller projects which receive Government aid, such as the draining of morasses, construction of roads, subsidies to exhibitions and horse races, etc.

In addition the Federal Dept. conducts a large insurance business against hail, the total value of crops insured being about eight million dollars, also a cattle assurance for death of cattle from accident or natural causes.

It will be thus seen from the above somewhat meagre outline, that the Federal Department is doing a great deal for the agricultural population, and that the effects of this enlightened policy are good. I should especially notice the quality of the horses and cattle. "Scrub" cattle are very scarce. In a future article I hope to say something further about the courses given in the Agricultural and Dairy Schools.

## Cold Storage for Butter

Last week at the request of the Minister of Agriculture, Prof. Robertson had a conference with the Butter and Cheese Section of the Montreal Board of Trade to discuss the question of cold storage for butter. The agreements between the Department of Agriculture and the steamship companies providing cold storage will expire this season, and the Department is desirous of learning whether anything further can be done to improve the transportation facilities for butter, and to keep up the advance that has been made this year.

In 1894 when there was no cold storage the exports of butter were only 32,055 packages. Since that time there had been gradually provided through the efforts of the Government, mechanical refrigeration on steamships, refrigerator car service on railways, cold storage at creameries, etc., until in 1899 up to Nov. 11, the exports were 444,376 packages, or fourteen times as much as in 1894. The quality has also improved, and whereas Canadian butter used to be quoted at from ten to fifteen shillings under Australian, this year it has been selling for higher prices in the same markets.

The Minister of Agriculture has decided to continue the payment of the bonus, and owners of creameries who put up cold storage rooms during the season of 1900, and keep them in use in accordance with the regulations of the Department will receive a bonus of \$100. This work is recognized as being very helpful in the improvement of the butter business. The Department will send an expert to many of the creameries during the winter to point out to those who have not yet put up cold storage rooms how best they may provide them at their creameries.

In consequence of complaints that butter is often spoiled at stations because there was no cold storage, Prof. Robertson announced that the Government would assist in establishing such chambers at six points upon the different railways to be selected by the Association. The members of the Association, after commending the work of the Government, requested that assistance be continued to a weekly refrigerator service to Liverpool, London, Bristol, Glasgow and Manchester, and a monthly service to Newcastle. It was thought advisable that the Government should continue to have some control over the steamships with refrigerator service to preserve it for Canadians, and to prevent big Chicago firms like Armour and Swift from absorbing it all.

Everyone interested in the development of our export butter trade will coincide with the views expressed above. It would be a risky proceeding to withdraw Government assistance from the cold storage movement at the present

time, and we are glad to know that it will be continued at least for another year. Even if it has to be continued for several years to come the money expended will be well spent in the development of the butter trade, and the improved condition of the product when it reaches the British consumer. The extension of the system in providing cold storage chambers at several railway centres seems to be along the right line, as is also the maintaining of the control of the ocean service, and keeping it for the use of Canadians only.

## Preparing Fowls for Exhibition

During the next few months the poultry shows in the various parts of the province take place. Among them as announced last week will be the Toronto Poultry show which takes place next month. In view of these shows coming so soon, the following article on preparing poultry for exhibition written by J. Fred Crangle for the *Reliable Poultry Journal* will be found of value to those intending to compete:

Few years ago it was not necessary to spend a great deal of time on birds before exhibiting them, but for the past ten years competition has been so great that a good many prizes have been won simply on condition. It is almost impossible to win in strong competition, no matter how good the bird, if it is not in condition. To an amateur it is hard work to put a bird in condition, and there are many people who are exhibiting birds in a small way who never had any experience in that line. Different varieties of fowl have to be treated differently. I will give my methods with several varieties.

In preparing turkeys for exhibition, to put them in the best possible shape, it is necessary to keep them thin in flesh. Have them perfectly free from all kinds of vermin, which they are always liable to have. About four weeks before these birds are to be exhibited, it is necessary to commence feeding them more fattening food, and it is necessary to start in a very moderate way, because if you try to force the turkeys too early you get them up in condition too quick. Corn and oats should be the principal foods. About two or three times a week they should have soft food with some sort of meat. Beef suet is very good. There are cases where turkeys will not touch beef suet, but by warming it on a stove, and then while warm putting in a little soft food, you can get them to eat it in that way. This puts a very fine luster on the feathers. They love stale bread and occasionally it is very nice for them for a change.

To make good show birds it is necessary to have the birds as gentle as possible. You will always find that the very best exhibition birds are easy to handle. I have seen birds defeated at the biggest shows in the country simply because they got nervous and would not act well in the exhibition coop. Take a bird that is scared, of course he does not show his shape. It is very essential to have birds tame. It is not necessary to wash turkeys. Those varieties whose plumage soils easily we usually put in a large room a few days before we expect to exhibit them, where there is plenty of straw. This could be applied to white turkeys and buff turkeys. If you do not take some course of this kind many times only a few hours before you coop these birds up for shipment to the exhibition hall it will start in and rain and the feathers of the turkeys will be soiled, and of course look very badly.

Many kinds of water fowl, such as geese, etc., can be shown at several exhibitions without hurting them if they are properly taken care of during the exhibitions. Many varieties of ducks cannot be shown at more than one exhibition and have them in first-class condition, because they become frightened and it starts them to molting, no matter what time of the year they are shown. This applies more particularly to Pekin ducks, as they seem to be very easily frightened. There are a few other varieties as well

as the Pekins which after a few days in the show room will start to molting. If a person expects to make several exhibits of ducks, as a rule it would be necessary for him to have a different lot for each exhibit, if he wishes to show them in the best of feather.

If white ducks are shown in the winter season, when there is no water for them to bathe in, it is best to wash them. In getting ready to make an exhibit get your birds up in coops about eight days before you wish to show them. It is always best to have extra birds in all classes because many times some of your best birds go back on you at the last moment. Get your birds in coops a few days before the show, putting them on clean straw, and feed four times each day a variety of food. As a rule any food is good that will put them in the best condition. Do not forget to give plenty of green food, also meat every day. The last feed should be given them about 9 o'clock in the evening, and consist of stale bread and milk. To a cup of this food add about a tablespoonful of sugar. Sometimes at first they will not take to this late feeding, but after two or three feeds will be always ready for it. We think the best way is to take the birds out of their coops and put them on a table and give them all they can eat of the bread and milk.

Every morning feel the crops and see that they are digesting their food properly. In preparing birds for shows I have seen many cases of indigestion. If you ever have a bad case of indigestion, take a cup of lukewarm water, put in enough castile soap to make thick suds, and with a spoon give them about three times full. As a rule that will cure them. No matter what color your birds are before you show them, look over carefully for any foreign feathers. About three days before the show, wash their feet and legs in soap and water. Use a tooth brush to get all of the dirt from under scales and around the toes.

All white birds should be washed about three days before the shows. Do this in a warm room, using two tubs, one with hot water as warm as you think they can stand, the other tub with cold water. Take the bird by the wings, stand him in the warm water, using castile soap. Wet the bird all over and soap him well. Rub the feathers hard enough to get out all the dirt, and do not be afraid to rub them. After you think the dirt is all off, take the bird out of the tub and with your hand brush off all the water you can, then put him in the tub of cold water and rub again to get out all soap. After you think he is washed well, put in clean coop or box with clean straw on the bottom and place the coop with the bird near the stove to dry. In about six or eight hours you can see how clean you have washed him. As I have said before in this article, wash three or four days before you wish to show them, as it takes several days for them to oil their feathers and smooth them out. Two important things to do in showing birds is, first, to keep them as clean as possible, second, look out for their food and give them only what they will eat up clean.

## Protecting Young Orchard Trees

To protect young trees during the winter from mice, etc., a good plan is to make a mound of earth around each tree. The mound should be about a foot high and eighteen or twenty inches wide at the base, and should contain no weeds, grass, etc.—nothing but earth—and the earth for the purpose should be taken from beyond the roots of the tree, so as not to reduce the covering over the roots. This protects the stem of the tree from mice, which often gnaw the bark in winter and kill the trees. If the trees were mulched in spring enough of the mulch is to be drawn to one side to make room for the mound.

A very good protection is a scroll of galvanized woven wire with small meshes a quarter of an inch or less in diameter. This should be two or two and a-half feet long, and wide enough to double over the edges three or four

inches when placed around the trunk; and the lower end should be a couple of inches in the ground. If enough of the material is used to allow for the increase in the diameter of the stem of the tree, these wires will last until the trees are large enough to need no protection, by removing them every spring and keeping them in safe place until fall.

In every case where the mound is used it should be leveled down in the spring.

## Experiments in Pork Production

Bulletin No. 33 issued by the Department of Agriculture at Ottawa and compiled by Mr J. H. Grisdale, Agriculturist, Central Experimental Farm, contains some data on pork production of value to farmers. In this bulletin all the experiments which have been conducted in the feeding and fattening of swine at the Central Experimental Farm for the past eight years have been tabulated and summarized so as to present in a condensed form the whole of the information which has been gained by the investigations made regarding pork production during that time. Useful conclusions are also drawn from the results of the work.

The following taken from the introduction is practical and to the point:

Pigs were introduced upon the Central Experimental Farm in 1890. The breeds invested in were Berkshires,



Farm Scene at Willow Bank, Chatham, Ont.

Improved Large Yorkshires and Essex. Since that time, Chester Whites, Poland Chinas and Tamworths have been secured, while the Essex is no longer bred here. Owing to limited accommodation not many animals of each breed are kept, usually two sows and a boar.

Experimental work in breeding for hogs of a certain type has been carried on. As the other part of this bulletin will deal with the characteristics of the breeds and their crosses, it might be well here to say a few words upon this work.

The Tamworth-Yorkshire cross has proven to be a most excellent one. It is eminently fitted to suit the market of the present day.

The Yorkshire-Berkshire cross has also proven to be a growthy pig and well-fitted for general use.

The Berkshire-Tamworth cross seems to be an excellent pig where quick growth and early maturity are especially desired.

Where these breeds have been crossed with the Chester White, the Poland China, or the Essex, the get, in most cases, has proven to be of a rather short, blocky type. They have, as a rule, exhibited a strong tendency to lay on fat rather than develop muscular tissue.

### CARE OF BREEDING STOCK.

A few general statements might be made in this connection which would prove of some use. To begin with, the boar should be kept in fairly good flesh, care being taken to avoid fatness and some plan adopted to insure considerable exercise.

Brood sows likewise should be kept in fairly good flesh. The best method of keeping these animals is upon pasture



in summer and in a large pen in winter, feeding them upon roots very largely, with bran, shorts or oats added. As farrowing time approaches, care should be taken by the attendant to get on friendly terms with them, so that there may be no undue excitement at that critical juncture. should any assistance be necessary.

To prevent the sow crushing her young, a board about eight inches wide placed flat horizontally about eight inches from the floor will prove of great value. A small enclosure in one corner of the pen, kept dry and well littered, will also prove of great service in protecting the little ones, as they will naturally go there to sleep.

The sow should be fed a plentiful ration of bran, shorts or oats, and milk while suckling her young.

The young pigs should be early taught to eat. This may be done by placing a small trough in the above mentioned enclosure. For a few days a small supply of warm new milk might be placed in it, and later skim-milk warmed to blood heat. In two or three weeks, or even less, some shorts or oatmeal might be added to the milk. Great care must be taken to keep the trough scrupulously clean. It should be washed thoroughly every day.

If the young are dropped in winter, it is well to give them a few sods to tear up in their pen. The roots and earth appear to serve the important ends of supplying vegetable and mineral matter, so necessary to the health and development of young animals.

By pursuing this or some similar method of feeding the young they will, at from seven to nine weeks, be weaned. Care should be taken at this time to reduce the sow's ration, especially the bran, shorts, oats or milk.

Much of the trouble experienced in raising pigs arises from the feed and care given the sow. If these are what they should be, no sickness is likely to occur in the young. Do not feed the same mixture for long to either sow or young. Variety in feed aids digestion.

## Crops in the Eastern Provinces

(Communicated.)

The labors of both farmers and fruit growers in the Eastern Provinces have been rewarded this year with abundant returns. In 1898 rust affected all the grain crops very seriously in the Maritime Provinces, and the yields were light. During 1899 the season was more favorable and the returns have been bountiful. Some particulars regarding the gratifying results of the year have been obtained from Dr. Wm. Saunders, Director of the Experimental Farm, who has recently returned from a visit to the East, made in connection with the exhibits of agricultural and horticultural products being prepared for the Paris Exposition.

### New Brunswick.

In the Province of New Brunswick the crops of 1899 have been very encouraging, and the yields, both of hay and grain, are very satisfactory. Dairying is also making considerable advancement throughout this province. Fruit growing is becoming more general, especially in many parts of the valley of the St. John River. Through the efforts of the Department of Agriculture an excellent representative collection of very fine apples of this province has been made and is being placed in cold storage, to be forwarded to Paris in the spring. A fine display of samples of grain in the straw and of cereals threshed and cleaned has also been secured from many different counties, such as will be a credit to the province.

### Nova Scotia.

In Nova Scotia similar work is in progress. The Secretary of agriculture is bringing together a very fine collection of Agricultural products to illustrate the results of farming in that province. A good collection of native

grasses is also been made. Through the energetic efforts of the fruit growers in the Annapolis Valley a large and representative display of excellent fruits has been obtained. A fine collection has been made of fruits in antiseptic fluids. The latter comprises about one hundred bottles, and includes many of the more perishable sorts which could not be shown in a fresh condition. A large collection has been brought together, including many choice varieties of fresh fruit, especially apples, for display at the opening of the exhibition.

EXPERIMENTAL FARM, NAPPAN, N.S.

The Experimental Farm at Nappan, is also doing good work in providing material to illustrate the products of Eastern Canada at Paris. A fine collection of fruits has been made, chiefly of the early varieties, and a good representative collection of the agricultural products of the farm has been got together.

As illustrating the favorable character of the season it is worthy of remark that, while the yields of wheat on the farm last year ranged from 25 bushels 20 lbs. down to 12 bushels 40 lbs. per acre, this year the crops of this grain ranged from 46 bushels 40 lbs. to 27 bushels 20 lbs.; thus the smallest yielding varieties in 1899 have given more than the most productive sorts in 1898. Oats, in like manner, have ranged this year from 104 bushels 24 lbs. per acre to 82 bushels 12 lbs.; while in 1898 the highest yield



Winter Scene, Willow Bank Farm.

was 50 bushels, and the lowest 22 bushels 12 lbs. The hay crop has also been a very good one, and turnips and mangels have given very good returns. The season has not been favorable for Indian corn; there has not been sufficient heat to bring this crop to a satisfactory condition of maturity.

The dairy industry is making good progress in many parts of this province.

### Prince Edward Island.

Under the direction of the Premier of Prince Edward Island a very fine collection of the cereals grown on the Island is being brought together for the Paris Exposition. A number of varieties of apples has also been collected, which will make a very satisfactory display. The fruit industry is making rapid growth on the Island, and many new orchards are being planted. The farm crops on the Island have been good this year, and agriculture, there, is in a prosperous condition.

Dairying is making a steady growth, and the output of the cheese and butter factories in Prince Edward Island is rapidly increasing. Since the farmers there have been thrown on their own resources they have shown how thoroughly competent they are to manage their own dairy business.



A visit was paid to one of the dairies, known as the Kensington Dairy Association. At the time it was visited, although it was near the close of the season, the daily receipts of milk were 13,000 lbs.; the cheese production being about twenty-one cheeses per day of 80 lbs. each. The total output for the season from this factory was 3,000 cheeses up to the date referred to, and it was expected that before the cheese season closed the output would reach 4,100. A good supply of milk is sent to this factory throughout the year, and as soon as the season for cheese-making closes, butter-making begins. Last year this factory turned out, during the winter, 20,000 lbs. of choice butter; and this season it is expected that the output will reach 25,000 lbs. These results are from but one of a large number of successful dairy companies run on the Island.

With the great increase in cattle and the consequent feeding at home of a large part of the coarse grains and fodder grown on the Island, the quantity of manure available for fertilizing the land has been immensely increased. Farm lands are improving in fertility every year and crops are much more satisfactory.

The large output of dairy products brings in considerable sums of ready money to be divided among the farmers of the community.

### Quebec.

Farm crops in Quebec have, on the whole, been very satisfactory. Dairying, for which this large province is so well adapted, is in a promising condition, and the industry steadily increasing. Some fine examples of the grain grown in the different parts of this province have been collected by the Provincial Department of Agriculture for the Paris Exposition, both in the straw and cleaned. A display of tobacco and flax is also being got together, and a collection of native grasses. The fruits of the province will be well represented by a large collection of the softer and more perishable varieties, which will be shown in bottles containing antiseptic fluids, and steps have been taken to make a very fine display of the longer-keeping sorts in a fresh condition.

Dr. Saunders says that the arrangements made to provide creditable exhibits of grain and fruits for Paris from all the eastern parts of Canada are well advanced and will, no doubt, reflect much credit on the several provinces engaged in this useful work, and, at the same time, do much to convey correct ideas regarding the immense agricultural resources of the eastern parts of the Dominion.

## Dairy Farmers' Records

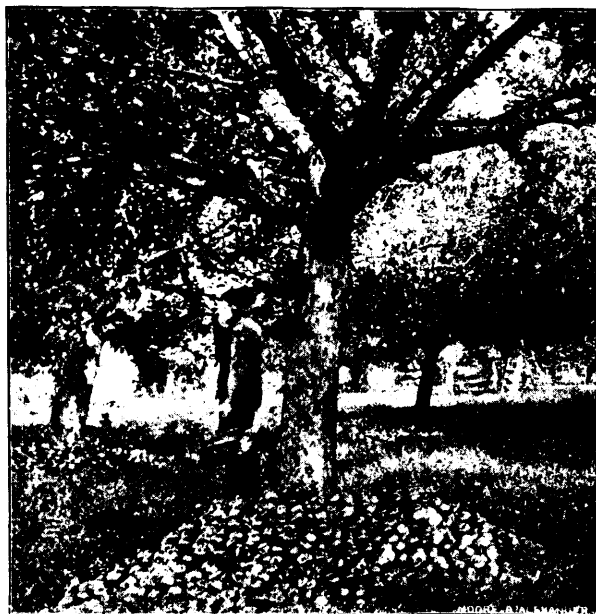
### Something for our Farmers' Institutes and Dairy Associations to Consider

There can be no greater education for the dairy farmer than to keep a record of his milking cows. If this were done by everyone who keeps cows for factory or other purposes we venture to say that in one year alone it would mean the greatest surprise that many of them have had for some time. There would immediately be an increased demand for better cows, and a surplus of poor, worthless, unprofitable cows for sale or to give away. If such a record were faithfully and carefully kept for a twelve-month it would mean such a revolution in the profits to be derived from the dairy business in this country as would be astounding. But very few of our dairymen keep such records, and the large majority of them continue to keep cows, supply the milk to the factory or make it up at home as the case may be, and from one year's end to the other never know what each individual cow is doing. Without some knowledge along this line it is impossible to make dairying in this or any other country as profitable as it should be.

While we in this country have reason to feel proud of our achievements in the production of good butter and good cheese, we are yet far behind some other countries in

testing each individual cow in our herds, and in finding out which is the most profitable cow to keep. Some years ago the British Dairy Farmers' Association offered prizes for the best kept records of milking herds. For a time this was a great incentive to English farmers to keep records, but of late such records have only been kept by some of the younger farmers. Some valuable data was secured from this work, showing the value of the milk of the best and of the worst cow in four herds, together with the annual value of the milk of the average cow in each herd. The value of the milk of the best cows varied from £10 13s. to £12 13s.; the value of the milk of the poorest cow on each farm varied from £5 15s. to £8 19s. 6d. The average cow on each farm gave milk in the year with variation in value from £7 5s. to £10. It might be stated that the milk on these farms had a low value, and when sent to the factory a very low price was paid for it. This will account for the low value, for an English farm, of even the best cow. The comparison, however, is valuable and the lesson to be learned obvious.

The details of the expenses and receipts of twelve cows kept upon a particular farm for a year, the cost of pur-



Apple-picking, Willow Bank Farm.

chased grains, hay, and other foods, some of which was grown on the farm, and estimated at market price, together with the pasturage on 25 acres, amounted to £71. The whole of the food was valued at a very low price, having a very trifling saleable value, and which explains (so an English exchange states) the low price of the milk. The calves raised realized 22s. 6d. each, but the sum realized for the milk was £126 8s., so that a considerable sum was realized in profit; assuming that nothing was expended for labor. These figures are low. In Great Britain it is estimated that a cow that brings in £20 a year hardly pays when the total cost of feed, care, etc., are accounted for.

We have given the figures above to show somewhat of the nature of the data that might be obtained by every farmer if he would keep a record of what each individual cow is doing. True, it would mean considerable time and attention, but they would be more than repaid in the valuable information obtained. As an incentive to obtaining accurate information along this line it might be money well spent if some of our Farmers' Institutes in the dairy districts would offer prizes for such records. Let arrangements be made so that a farmer could begin keeping this record on January 1st next and continue it during the year. At the end of the year we venture to state that such a fund of valuable information would be secured as would form a topic for discussion at Institute meetings for a long time to come. So important is this work that the Provincial

Dairy Associations could not spend money to better advantage than in giving prizes for the best set of herd records of milking cows in the Province.

## The Canadian Apple

We have been compelled to say some strong things during the past few weeks in regard to the packing and shipping of apples to the British market. However, what we said has been fully borne out by later reports from that market, showing that a large portion of our fruit arrives in poor condition. The compliment paid to Canada and the Canadian apple trade in the following paragraph taken from *British Refrigeration and Allied Interests* will, therefore, be somewhat refreshing to our readers:

"It is satisfactory, from the Imperial standpoint, to note that in the import fruit trade, and especially in the apple department, the British colonies have the greater share, as compared with the rest of the world, while outside the colonial division the other Anglo Saxon branch of the race sends over as much as all the combined foreign producers put together. In the colonial division Canada is the leader, sending over the Atlantic a quantity which is six times as great as the whole amount from the other colonies. Amongst the Australias, Tasmania send six times as much as Victoria, which again sends double the quantity that South Australia exports, while New South Wales is so far behind that it can only be said to be just in the trade. The Cape so far has not taken a representative position, but when political matters settle down in that part of the world fruit raising may have some chance of development. The total amount of apples imported during the last year was about three and a half million bushels, a total which was below the average for the previous five years; but the returns for the current year will, it is anticipated, compare very favorably with any in existence, the value of the trade now being definitely established in the minds of the colonial producer. So much is this the case in Victoria that local fruit growers are keenly on the alert for any movement which is calculated to benefit the trade, or widen its sphere of operation. A standard or uniform fruit case is at present a recognized want, and an active agitation is in progress to have a definite standard adopted and enforced. In this respect Canada again shows the way. Baskets are the favorite receptacles for use in the Dominion, and to insure that a standard size only shall be used, basket-makers are to be compelled by law to mark every basket which is below standard capacity with the word "short," a fine ranging from five to twenty-five dollars being the penalty for omission. This effort on the part of Canadians is indeed a step in advance, even of the much vaunted go-a-head propensities of the United States, for the St. Louis Fruit Exchange has been compelled to resort to a threat of boycott against all apples offered for sale which are packed in other than the orthodox manner."

## How Much Water Does a Cow Require?

The watering of live stock is an important part of the farm work. But, while all animals on the farm require more or less attention in this particular, none need it more than the cow giving milk. Many farmers fail to realize the importance of giving their milch cows all the pure water they require both winter and summer. The amount of water a cow will drink depends upon the kind of feed she is getting. Where roots or ensilage is fed the amount of water required is considerably lessened, because there is a considerable amount of water in these feeds. Cows, as a rule, require more water during the winter than during the summer when on fresh pasture, and a cow in a full flow of milk requires a great deal more than one not in milk. In

fact, a cow cannot give the very best returns in the milk-pail unless she is liberally supplied with drinking water.

Several experiment stations in the United States have tested this question with somewhat varying results. At the Copenhagen station it was found that 76 cows required an average of 97.9 pounds of water per day, or about 12 gallons each. At the Pennsylvania station it was found that cows averaging 773 pounds in weight confined in stalls in the summer and living on fresh grass drank 61 pounds each per day, while confined in stalls at a temperature of 73 degrees, and fed on dry grass they drank 107 pounds.

According to Prof. Henry, cows, generally speaking, require about four pounds, or a half a gallon of water, to each pound of dry matter in their food. A New York authority says that provision should be made for eight gallons a day per cow in order to be sure of a full supply. At the Geneva station it was found that cows in full milk required about four and three-fifths pounds of water for every pound of milk. It follows, therefore, that the heavier the milk the larger the amount of water is necessary.

Whether the water should be warmed or not during the winter is a somewhat disputed question. Many claim that if it can be supplied at the temperature of well-water in winter it does not need heating. Where the water is pumped into a tank in the stable, and is allowed to stand a while before being given to the cows, the chill will be taken off and the water made more palatable. At the Indiana station some experiments were carried on along this line, and it was found that there was a falling off of eight per cent. in the flow of milk when the temperature of the water fell from 79° to 38° Fahr. The question of water is, then, an important one for those engaged in winter dairying, and should be given more attention by our farmers generally.

## Russian Beef for England

According to the London *Daily Graphic* an expert British commission, consisting of two members of Parliament, a distinguished English veterinary surgeon, and one or two others accompanied by a number of the Moscow Agricultural Society, has lately made a tour of Southern Russia with a view to the formation of an English syndicate for importing on a large scale live stock and dead meat from that country into the British markets. The *Graphic* in commenting on the work of the Commission says:

"The result of the prospecting commission's researches in these provinces will not be made known for some weeks still. It may be taken for granted, however, that if the projected company be floated, and the British public find Russian beef as tough, filamentous, and juiceless as the growling garrison at Malta has found it for the last ten years, and as all British residents in South Russia know to their disgust, the new venture is not likely to flourish. Apart from this gastronomic prejudice no enterprise of this nature is likely to succeed in face of the immense and now perfectly organized competition of Australia, the United States and Canada."

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## CORRESPONDENCE

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### \$100 Per Annum

To the Editor of FARMING:

I have the honor of replying to your questions as follows,

(1) About fifty or sixty hens and one trio (male and two females) each of turkeys, geese, and ducks might be kept on the average farm. From fifty to sixty chickens could be raised each year, the pullets kept for laying and the cockerels killed and sold on the market. From each trio of turkeys, geese and ducks twenty to thirty young birds might be raised. That will be all that the average farmer can take care of properly.

(2) For egg production select Minorcas, Black Spanish Leghorns and Andalusians, or any of the Mediterranean class; and Plymouth Rocks, Wyandottes, Dorkings, Brahmas, and first crosses of these and other breeds which produce large chickens, for fattening purposes.

(3) Yes. So long as it is warm and comfortable in winter, and there is plenty of light and sunshine in it and plenty of room for the birds.

(4) Yes. A farmer should be able to grow all the feed for his poultry.

(5) About \$100 would be a fair annual income, and I am afraid, however, that I am rather underestimating it at that.

(6) Yes. There is no reason why he should not, if he tries, be able to fatten poultry for the British market.

J. S. HENDERSON.  
Rockton, Ont., Nov. 15, 1899.

## One Dollar Per Head a Fair Income

To the Editor of FARMING:

Replying to your questions I beg to submit the following answers:

(1) Depends largely on the accommodation provided for them. If proper buildings are erected, with wire runs attached, two to five hundred fowls may be easily handled.

(2) The most profitable fowls would be Plymouth Rocks, Wyandottes, Javas, because they stand the cold weather better than the Leghorns, Minorcas, etc., and are more profitable for marketing being easily fattened.

(3) No, not as a rule.

(4) Yes, but he would have to get his grain ground into meal, as cooked meal is a very important factor in the fattening of poultry.

(5) A fair average income would be a profit of at least one dollar per head, but to obtain this would necessitate lots of work. Fowls must be attended to carefully and regularly, and to get the best results a thorough knowledge of the business in every detail is absolutely necessary.

(6) I see no reason why the average farmer should not be able to successfully fatten poultry for the British market, just as well as he can fatten cattle for the same purpose.

CHARLES MASSIE.  
Port Hope, Ont., Nov. 14th, 1899.

## Soil Moisture and the Crop

To the Editor of FARMING:

To the practiced observer of the phenomena revealed in soils in a resting or fallow state, and during the growing of the crop, many principles may be thought out, which recent investigations of soil physicists go to prove as correct.

The amount of moisture that may be present in the soil at any period is determined in accordance with the quality of soil and the kind of crop that may be growing, or the method of cultivation that has been used.

The following data may serve as an illustration of the above statement, and which show the percentage of moisture present under different conditions:

Bare summer fallow	17.76	per cent.
Summer fallow growing green crop	17.00	"
Spring wheat	13.63	"
Fall wheat	13.76	"
Roots	14.27	"
Corn, unfertilized	15.31	"
Corn, fertilized	15.83	"
Clover, unfertilized	12.85	"
Clover, fertilized	13.05	"

Summer fallowing is shown to be advantageous in increasing the moisture content of the soil. The growing of grain crops is shown to be the most severe on the soil moisture. Roots come next to grain, which might be inferred as due to the mulching of the soil by more frequent cultivation. For both corn and clover, it is interesting to note that the fertilized soils apparently require less moisture than those unfertilized to grow the same weight of crop.

The above results are the averages of a number of determinations made during the growing period of the crop. Moisture, in whatever form in which it may be brought to the soil, is one of the most important fertilizers, though not exactly credited as such. The most important principle that may be drawn from the experiment herein given is to follow such a method of cultivation and cropping as to insure the maximum fertility in the soil—humus nitrates, potash, phosphates and moisture. The last named may somewhat be depended upon to follow the other four important aids in cropping, and in sufficient quantity to insure good crops in any season, where intelligent and rational methods of cultivation are followed.

W. J. THOMPSON.  
Bronte, Ont.

## A Farmer Should Keep 100 Hens

TO THE EDITOR OF FARMING:

I have pleasure in answering your questions as follows:

(1.) A farmer should be able to keep 100 hens, besides a small flock of turkeys and a few geese. Some will make more money out of one than the other.

(2.) Barred or White Plymouth Rocks, or a variety of Wyandotte, with preference for the first named.

(3.) The dairy cow has to be comfortably housed in order to be profitable. So must the hen receive consideration in the same manner. A suitable poultry house is indispensable. It need not be an expensive or elaborate affair.

(4.) The ordinary farmer should certainly be able to produce the feed necessary to fatten his poultry. Finely ground oatmeal is the principal agent in fattening and oats are largely grown on most farms.

(5.) A farmer should realize from one to two dollars per head per annum according to management and circumstances.

(6.) The average farmer is not likely to breed, fatten and ship his own birds, unless he makes the business a specialty. In the latter case he should have proper buildings, facilities, etc. In England it pays the farmer well to rear chicks to sell to the fatteners, who have establishments of their own wherein the birds are fattened. Our Canadian farmers will find it best to do the same. At present there is a demand in our home markets for the superior quality of poultry, which our farmers do not yet produce and which they cannot do until they keep the Plymouth Rocks, or other breeds which make early and superior chickens. It is only wasting time and opportunity trying to fill the home or foreign demand with "scrubs."

It might be added to the reply to No. 5 query, that experiment has proved that if hens are properly fed, managed and housed, so that they will lay well in the winter season of high prices, and their product is sold at winter figures in the cities, and a certain number of eggs in spring are converted into chickens, that the hens paid, over and above their feed, a profit of \$1.75 to \$2.00 per hen. Investigation has shown that when hens are running at large, or comparatively so, there is a large percentage of profit in eggs, even at the low summer prices. Careful enquiry into the whole subject will prove to the farmer that there is no better paying branch of farm industry than poultry. But, as with the dairy cow, it requires brains, adaptability, energy and perseverance in order to make your money.

A. G. GILBERT.  
Ottawa, 10th November, 1899.

# The Agricultural Gazette

The Official Bulletin of the Dominion Cattle, Sheep, and Swine Breeders' Associations, and of the Farmers' Institute System of the Province of Ontario.

## THE DOMINION CATTLE, SHEEP, AND SWINE BREEDERS' ASSOCIATIONS.

Annual Membership Fees:—Cattle Breeders' \$1; Sheep Breeders', \$1; Swine Breeders', \$2.

### BENEFITS OF MEMBERSHIP.

Each member receives a free copy of each publication issued by the Association to which he belongs, during the year in which he is a member. In the case of the Swine Breeders' Association this includes a copy of the Swine Record.

A member of the Swine Breeders' Association is allowed to register pigs at 50c. per head; non-members are charged \$1.00 per head.

A member of the Sheep Breeders' Association is allowed to register sheep at 50c. per head, while non-members are charged \$1.00.

The name and address of each member, and the stock he has for sale, are published once a month. Over 10,000 copies of this directory are mailed monthly. Copies are sent to each Agricultural College and each Experiment Station in Canada and the United States, also to prominent breeders and probable buyers resident in Canada, the United States and elsewhere.

A member of an Association will only be allowed to advertise stock corresponding to the Association to which he belongs; that is, to advertise cattle he must be a member of the Dominion Cattle Breeders' Association, to advertise sheep he must be a member of the Dominion Sheep Breeders' Association, and to advertise swine he must be a member of the Dominion Swine Breeders' Association.

The list of cattle, sheep, and swine for sale will be published in the third issue of each month. Members having stock for sale, in order that they may be included in the Gazette, are required to notify the undersigned by letter on or before the 9th of each month, of the number, breed, age, and sex of the animals. Should a member fail to do this his name will not appear in that issue. The data will be published in the most condensed form.

F. W. HODSON, Secretary.  
Parliament Buildings, Toronto, Ont.

## LIST OF STOCK FOR SALE.

### DOMINION CATTLE BREEDERS' ASSOCIATION.

#### Shorthorns.

Birrell, D.	Greenwood	12 bulls, various ages.
Birdsall, F. & Son	Birdsall	2 bull calves, 6 and 10 months.
Bright, J.	Myrtle	8 bulls, 7 to 12 months; heifers; young cows.
Brodie, G. A.	Bethesda	24 bulls, 6 to 18 months; 16 heifers, 8 to 20 months; aged cows.
Caldwell Bros.	Orchard	Bull, 14 months.
Davis, J. F.	Tempo	4 bulls, 10 months; 12 cows and heifers.
Douglas, Jas.	Caledonia	8 bulls, 6 to 13 months; young cows and heifers.
Gibson, R.	Delaware	4 bulls.
Graham, H. C.	Ailsa Craig	5 young bulls.
Harvie, J. R.	Orillia	3 bulls, 7, 18 and 23 months; females, various ages.
Holdsworth, R. L. & Sons	Port Hope	Yearling bull; bull calf, 4 months.
Howden, J. D.	Whitby	3 bulls, 7 to 14 months.
Jeffs, E. & Sons	Bond Head	4 young bulls; young cows; heifers and heifer calves.
Johnston, A.	Greenwood	5 imp. bulls, various ages; 10 bulls, various ages.
Milne, D.	Ethel	10 bulls, 10 to 15 months.
Russell, D. H.	Stouffville	3 young bulls; 3 cows; 5 yearling and two-year-old heifers.
Staples, L. F.	Ida	Yearling bull.

#### Herefords.

Smith, H. D.	Compton, Que.	Bull calves.
Stone, A.	Guelph	5 bulls, 16 to 23 months; cows, heifers and calves.

#### Polled Angus.

Bowman, Jas.	Guelph	Bull calf; yearling bull; females, all ages.
Varcoe, J.	Carlow	7 bull calves; 10 females, all ages.

#### Ayrshires.

Campbell, J. R. & Son	Vernon	2 bulls, 4 years; 6 bull calves, 6 months; 4 heifer calves, 6 months; 4 cows; 2 heifers.
Caldwell Bros.	Orchard	3 yearling bulls; 5 bull calves, 1 to 6 months; 10 heifers, 1 and 2 years; 15 cows.
Drummond, D.	Myrtle	25 cows and heifers; 4 bulls, 4 weeks to 2 years.
Hume, Alex.	Menie	Aged bull; bull calves, 6 weeks to 11 months; yearling heifers; heifer cows, 6 to 10 months.
Smith, W. M.	Fairfield Plains	Bull, 2 years; 2 cows; 4 heifers.
Staples, L. F.	Ida	Aged bull; 2 bulls, 1 and 11 months; heifer calves, 2 years; aged cows.
Willis, W.	Newmarket	2 bulls; cow, 5 years; heifers.
Yuill, J. & Sons	Carleton Place	8 bulls, 1 to 3 years; 10 bull calves, under 2 months; cows and heifers, all ages.

#### Jerseys.

Birdsall, F. & Son	Birdsall	Bull, 2 years; bull calf, 6 months.
Gibson, R.	Delaware	5 cows.
O'Brien, J.	London West	4 bulls, 10 months to 3 years.

#### Guernseys.

Caldwell Bros.	Orchard	Bull, 7 months
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## THE DOMINION SHEEP BREEDERS' ASSOCIATION.

#### Cotswolds.

Birrell, D.	Greenwood	12 lambs, ewes and rams.
Rawlings, J.	Ravenswood	60 ram lambs; 10 shearing rams; ewe lambs.
Thompson, Wm.	White Rose	Ewes.

#### Leicesters.

Armstrong, G. B.	Teeswater	Shearing ram.
Currelly, T. & Son	Fullarton	Ewes and rams.
Douglas, J.	Caledonia	13 ram lambs; 15 ewe lambs.
Jeffs, E. & Sons	Bond Head	2 ram lambs; aged and shearing ewes and ewe lambs.
Wood, C. & E.	Freeman	Rams, various ages.

#### Shropshires.

Gibson, R.	Delaware	30 ram lambs.
Yuill, J. & Sons	Carleton Place	10 ram lambs; ewes, all ages, and ewe lambs.

#### Southdowns.

Baker, Geo.	Simcoe	2 ram lambs; 3 shearing rams; ram, 3 years.
Jeffs, E. & Son	Bond Head	3 shearing rams; 3 ram lambs; aged and shearing ewes; ewe lambs; aged ram.
Smith, W. M.	Fairfield Plains	Ram; 4 ewes.

#### Dorset Horns.

Bowman, Jas.	Guelph	Rams and ewes, all ages.
Hunter, J.	Wyoming	Rams and ewes.

## THE DOMINION SWINE BREEDERS' ASSOCIATION.

#### Berkshires.

Caldwell Bros.	Orchard	3 boars and 4 sows, 5 months.
Cole, T. J.	Bowmanville	Sow, 1 year.
Decker, C. R.	Chesterfield	28 head, all ages, sows.

## Speakers' Subjects.

ANDERSON, D. C., Rugby—"Clover as a Fertilizer;" "Soil Cultivation;" "Care of Manure and How to Apply It;" "Care and Management of Farm Teams;" "Breeding and Feeding Hogs for Market;" "Fields, Fences and Buildings." Evening Subjects: "How to Pay Off a Mortgage;" "Advantages of Farm Life."

BATTLE, JAMES, Thorold—"Cement Concrete, Its Use on the Farm;" "The Advantages of Using Cement Concrete in Farm Structures." Evening Subjects: "The Historic Niagara District, its Past and Present;" "Canada, Ocean to Ocean."

BRODIE, G. A., Bethesda—"Weeds and Their Eradication;" "Clover Culture;" "How to Make Good Ensilage;" "Growing Roots;" "Hog Feeding;" "Tile Drainage;" "Agricultural Education;" "Successful Farming;" "Cultivation of the Soil and Rotation of Crops."

BURRELL, MARTIN, St. Catharines—"The San Jose Scale;" "Insects in their Relation to the Farmer and the Fruit Grower;" "The Farmer's Fruit Garden;" "Theory and Practice of Horticulture;" "Stone Fruits and Their Pests." Evening Subjects: "Superstitions on the Farm;" "Birds in Relation to Agriculture;" "Mental and Moral Influences of the Farm Home;" "Fruit Growers and Fruit Eaters."

CAMPBELL, A. M., Dominionville—"Care and Feed of the Dairy Cow;" "How to Breed and Care for Young Stock;" "Cultivation of Corn and the Silo." Evening Subject: "Farming as an Occupation."

CASTON, G. C., Craighurst—"Rotation of Crops in Relation to Soil Fertility;" "Surface Cultivation and Fall Fallowing;" "Corn and the Silo;" "The Export Bacon Trade, Its Importance to Canada;" "Poultry on the Farm;" "Orchard Fruits and How to Grow Them;" "Planting, Pruning, Grafting, Fertilizing, Cultivation, Spraying, etc." Evening Subjects: "Horticulture on the Farm;" "Farm Life;" "The Land we Live In."

DAVIDSON, J. G., Collingwood—(See AGRICULTURAL GAZETTE, October 24th.)

DRUMMOND, D., Myrtle—(See AGRICULTURAL GAZETTE, October 24th.)

ECHLIN, JOHN, Carleton Place—"Milk Testing, or the Paying for Milk According to the Amount of Butter Fat it Contains;" "The Process of Butter-Making in the Home Dairy;" "Co-operative Dairying;" "Creamery Work in Connection with Cheese Factory Work."

ELLIOTT, A., Galt—"Corn and the Silo in Connection with Dairying;" "Clover and Clover Hay;" "Catch Crops;" "Why We Should Keep More

Gibson, D. J.	Bowmanville	3 sows, 3 months.
Hastie, A. C.	Comber	6 aged sows; 5 young sows; 2 young boars (imp.)
Holdsworth, R. L. & Sons.	Port Hope	2 sows and two boars, 6 months.
Howden, J. D.	Whitby	15 head, both sexes, 10 weeks to 2 years.
Jeffs, E. & Son.	Bond Head	Aged hog; 5 young sows; fall pigs.
Patch, F. H.	Brome, Que.	9 boars and 10 sows, 6 weeks.
Russell, J. A.	Precious Corners	5 boars and three sows, 3 months; boar and 3 sows, 5 months; boar, 8 months.
Silver, J. R.	Danville, Que.	3 sows, 7 months.
Vance, R.	Ida.	Boar, 2 years; 2 boars, 7 months; 18 boars and sows, 2 months.
Yuill, J. & Sons.	Carleton Place	Boar, 1 year; 2 boars, 6 and 8 months.
<b>Yorkshires.</b>		
Caldwell Bros.	Orchard	Boar, 16 months.
Cole, T. J.	Bowmanville	14 head, both sexes, 2 weeks to 7 months.
Drummond, D.	Myrtle	25 pigs, both sexes, 8 weeks to 15 months.
Davis, J. F.	Tempo	Pigs, 6 weeks.
Gibson, R.	Delaware	Hogs, all ages.
Honey, R.	Brickley	12 boars and 15 sows, 2 to 6 months; sow, 18 months.
Hume, Alex.	Menie	Boar, 7 months; sow, 8 months; 25 pigs, 2 and 3 months.
Mayloney, F. A.	Chapeau, Que.	40 pigs, both sexes, 5 to 6 weeks; 12 sows; 1 boar, 11 months; boar, 3 years.
Rogers, L.	Cooksville	Boar, 2 years; 2 boars, 14 months; 17 pigs, 3 months; 8 pigs, 2 weeks; sows, all ages.
Russell, J. A.	Precious Corners	3 boars and 5 sows, 5 months; boar and sow, 6 months.
<b>Chester Whites.</b>		
Birdsall, F. & Son.	Birdsall	Pigs, both sexes, 8 weeks; aged sow.
Bowman, T. E.	Berlin	8 boars and 6 sows, 5 to 7 months.
Go ding, H.	Thamesford	Breeding sow; young pigs, both sexes.
Holdsworth, R. L. & Sons.	Port Hope	Aged boar; 4 sows, 4 months.
<b>Poland Chinas.</b>		
Smith, W. M.	Fairfield Plains	2 boars; 10 sows, all ages.
<b>Tamworths.</b>		
Boyd, A.	Kars	2 sows, 7 and 18 months; boars, 17 months; young stock, both sexes.
Caldwell Bros.	Orchard	6 boars, 4 and 5 months; 4 sows, 4 months; 15 pigs, 6 weeks.
Cole, T. J.	Bowmanville	2 boars and 2 sows, 5 months.
Gibson, D. J.	Bowmanville	25 boars and sows, 5 to 7 months.
Golding, H.	Thamesford	5 breeding sows; 3 sows, 7 months; young pigs, both sexes.
MacKenzie, J.	Bresque Isle	4 boars and 2 sows, 2 months; boar, 2 years.
Odell, W. H.	Belmont	Boar, 2 years; 12 sows and boars, 6 and 7 months; 20 pigs, 10 weeks.
Smith, H. D.	Compton, Que.	2 boars, 8 months; 2 sows, 3 months.
<b>Duroc Jerseys.</b>		
Smith, W. M.	Fairfield Plains	Boar and 4 sows.

## Regular and Supplementary Meetings for January and February, 1900, and Delegates Therefor

N.B.—The list of Meetings for December and the Speakers therefor was published in this Department in the issue of October 24th.

### Regular Meetings.

#### DIVISION 1.

Henry Glendinning, Manilla; Andrew Elliott, Galt.

1. Clifford, Town Hall	Union	Jan. 2nd
2. Lakelet, Temperance Hall	Union	" 3rd
3. Walkerton, Town Hall	S. Bruce	" 4th
4. Paisley, Town Hall	C. Bruce	" 5th
5. Port Elgin, Town Hall	W. Bruce	" 6th
6. Tara, Vandusen's Hall	W. Bruce	" 8th
7. Spry, Schoolhouse	N. Bruce	" 9th
8. Lion's Head, Town Hall	N. Bruce	" 10th
9. Chesley, Town Hall	C. Bruce	" 12th
10. Hanover, Telford's Hall	S. Grey	" 13th
11. Durham, Town Hall	S. Grey	" 15th
12. Gorrie, Town Hall	E. Huron	" 16th
13. Brussels, Town Hall	E. Huron	" 17th
14. Clinton, Town Hall	W. Huron	" 18th
15. Dungannon, Agricultural Hall	W. Huron	" 19th
16. Holyrood Township Hall	S. Bruce	" 20th

#### DIVISION 2.

J. S. Woodward, Lockport, New York.

1. Milverton, Grosch's Hall	N. Perth	Jan. 2nd
2. Shakespeare, Temperance Hall	N. Perth	" 3rd
3. Mitchell, Town Hall	S. Perth	" 4th
4. Brucefield, Dixon's Hall	S. Huron	" 5th
5. Exeter, Town Hall	S. Huron	" 6th
6. St. Mary's, Town Hall	S. Perth	" 8th
7. Thorndale, Harding's Hall	E. Middlesex	" 9th
8. Kintore, Foresters' Hall	N. Oxford	" 10th
9. Innerkip, Foresters' Hall	N. Oxford	" 11th
10. Harrietsville, Oddfellows' Hall	E. Middlesex	" 12th
11. Coldstream, Town Hall	N. Middlesex	" 13th
12. Ailsa Craig, Town Hall	N. Middlesex	" 15th
13. Parkhill, Town Hall	N. Middlesex	" 16th
14. Forest, Town Hall	E. Lambton	" 17th
15. Petrolea, Council Chamber	W. Lambton	" 18th
16. Brigden, Hayne's Hall	W. Lambton	" 19th
17. Alvinston, Pavey Hall	E. Lambton	" 20th

#### DIVISION 3.

John McMillan, M.P., Seaforth; F. M. Lewis, Burford.

1. Norwich, Town Hall	S. Oxford	Jan. 2nd
2. Mount Elgin, Foresters' Hall	S. Oxford	" 3rd
3. Aylmer, Town Hall	E. Elgin	" 4th and 5th

Sheep;" "Lamb Feeding;" "The Bacon Hog and How to Feed Him." Evening subjects: "Earth Worms and Their Relation to the Farm;" "The Changed Condition of Agriculture."

FICHT, V., Oriel—"Cattle-Breeding for Beef and the English Market;" "Sheep Breeding and Management of Sheep for Profit;" "Breeding of Heavy Horses and Care of Brood Mares and their Foals;" "Cultivation of Soil for Grain and Roots;" "General Farming versus Special Farming;" "Planting and Care of an Apple Orchard;" "Advice to Young Men."

FRASER, W. S., Bradford—"Raising Hogs for Market;" "Corn Growing and the Silo;" "Clover Growing and Curing;" "Underdraining;" "Raising Sheep for Profit;" "Beef Rings Among Farmers;" "Tree Planting for Shade and Windbreak." Evening subjects: "Butter-Making on the Farm;" "We and Our Relations."

GLENDINNING, HENRY, Manilla—(See GAZETTE, October 24th.)

HALLMAN, A. C., New Dundee—"Corn Cultivation and the Importance of a Silo;" "Practical Hints on Swine Industry" (the bacon hog illustrated); "The Rearing, Breeding and Care of Dairy Cattle" (the dairy cow illustrated); "Winter Care of Idle Horses;" "The Water Supply on a Farm and the Importance of an Indoor System of Watering;" "The Business Farmer."

HILBORN, W. W., Leamington—"The Planting, Cultivation and Care of the Orchard;" "Planting Trees for Shade and Windbreaks;" "Shrubs and Flowers for the Lawn;" "Cultivation of Small Fruits for Home Use and Market;" "Spraying Injurious Insects and Fungus Diseases;" "Propagating and Management of House Plants."

HOBSON, J. I., Guelph—"The Advantages of a Partial System of Soil-ing;" "Management and Application of Farm Yard Manure;" "How to Build Up and Maintain a Herd;" "Corn Growing and the Silo;" "The Bacon Hog." Evening Subjects: "The Importance of Developing a Healthy Growth of the Social and Intellectual Life in the Farm Home;" "What Leads to Success or Failure in Farming."

HOLLINGWORTH, MISS A., Beatrice—"Butter Making;" "The Use of Native Trees and Plants for Beautifying the Farmer's Home;" "Plant Fertilization."

HUTT, W. N., Southend—"Pruning and Spraying the Orchard;" "The Farmer's Garden;" "Insects, Injurious and Beneficial;" "Spraying Mixtures and their Application;" "Management of the Farmer's Woodlot." Evening Subjects: "Birds in Relation to Agriculture and Horticulture;" "Beautifying the Farm;" "The Ontario Agricultural College."

HONEY, R., Brickley—"Selection and Care of a Stock Ram;" "Marketing Lambs;" "Selection and Care of a Brood Sow and Young Pigs;" "Selection and Care of a Brood Mare and

Young Colt." Evening Subjects: "Why Farmers Complain of Hard Times;" "Economical Feeding of Dairy Cows."

KINNY, MRS. A., Grand View—"The Home Dairy and How to Manufacture a Superior Quality of Butter with the Everyday Appliances of a Well Appointed Farmer's Home. Evening Subject: "The Modern Farm Home, including a Talk on Domestic Science."

KITCHEN, A. P., Brucefield—"Some of the Conditions Necessary to Success with Beefing Cattle;" "Keeping Hogs for Profit;" "Silos and Corn;" "Cultivation of the Silo." Evening Subject: "Climbing Life's Ladder."

LEWIS, F. M., Burford—"The Use of Moisture in the Soil and How to Retain It;" "The Cultivation of an Orchard for Profit;" "Essentials of Successful Corn Growing;" "Fruit and Vegetables for the Farmer's Table;" "Farming as a Profession;" "Ornamenting the Home."

LOTT, B. O., Anson—"Practical Suggestions for New Beginners in Bee Keeping;" "The Advantages of Bee Keeping as an Adjunct to Farming;" "How to Winter Bees Successfully;" "Prevention of Over Swarming;" "Bees in Relation to Plant Life."

MCCRAE, D., Guelph—"Horse Breeding;" "Cattle Feeding;" "Rotation of Crops;" "Sheep Breeding and the Wool Trade;" "Clover Culture;" "Our Best Grasses;" "Rye and Rape." Evening Subjects: "Country Homes;" "Our Farm Life."

MCCULLOCH, R., Snelgrove—"How to Increase Fertility with Little Outlay;" "A Good Dairy Cow, Her Care and Management," illustrated; "Judging Dairy Cattle;" "Cow Foods and their Effect on the Butter Flavor;" "The Value of Ensilage as Food for Farm Stock;" "Care of Milk for Cheese Factory, Creamery and Private Dairy;" "Use of the Babcock Tester;" "Butter-making on the Farm;" "Hog Raising as an Adjunct to the Dairy;" "Elements of Success in Farming;" "The Farmer's Wife;" "How the Membership of a Farmer's Institute was Raised from 56 to 420 in Three Years."

MC EWING, J., Drayton—"Farm Fertilizers;" "Features in Farming that Farmers Should Know;" "The Animal as a Machine;" "The Necessity of Systematic and Thorough Work;" "Rotation and Cropping;" "Why we Should Underdrain." Evening Subjects: "Common Sense Education;" "The Gospel of Home Influence;" "Some Things Boys Should be Taught."

MCLEAN, A., Carleton Place—"Poultry on the Farm;" "Our Method of Dairying;" "Feed and Management of a Dairy Herd;" "Selection and Care of a Stock Bull;" "How to Obtain a Profitable Herd of Dairy Cows;" "Care and Management of a Flock of Sheep;" "Growing Corn;" "Storing and Feeding

4. Shedden, Morrison's Hall.....	W. Elgin.....	Jan. 6th
5. Dutton, Town Hall.....	W. Elgin.....	" 8th
6. Rodney, Township Hall.....	W. Elgin.....	" 9th
7. Highgate, Township Hall.....	E. Kent.....	" 10th
8. Kingsville, Town Hall.....	S. Essex.....	11th and 12th
9. Eberts, Township Hall.....	W. Kent.....	Jan. 13th
10. Dover, Township Hall.....	W. Kent.....	" 15th
11. Thamesville, Town Hall.....	E. Kent.....	" 16th
12. Appin Township Hall.....	W. Middlesex.....	" 17th
13. Mt. Brydges, Township Hall.....	W. Middlesex.....	" 18th

DIVISION 4.

Duncan Anderson, Rugby; A. W. Peart, B. A., Burlington.

1. Mount Pleasant, Marquis Hall.....	S. Brant.....	Jan. 2nd
2. Ohsweken, Council House.....	S. Brant.....	" 3rd
3. Ancaster, Town Hall.....	S. Wentworth.....	" 4th
4. Stoney Creek, Squire Hall.....	S. Wentworth.....	" 5th
5. Campden, Fry's Hall.....	Lincoln.....	" 6th
6. Orange Hall, Grantham Tp.....	Lincoln.....	" 8th
7. Niagara Falls South, Town Hall.....	Welland.....	" 9th
8. Willoughby, Town Hall.....	Welland.....	" 10th
9. Marshville, Town Hall.....	Monck.....	" 11th
10. Attercliffe Station, Eagle's Hall.....	Monck.....	" 12th
11. South Cayuga, Town Hall.....	Haldimand.....	" 13th
12. Fisherville, Town Hall.....	Haldimand.....	" 15th
13. Waterford, Town Hall.....	N. Norfolk.....	" 16th
14. Courtland, Town Hall.....	N. Norfolk.....	" 17th
15. Delhi, Morgan's Hall.....	N. Norfolk.....	" 18th
16. Langton, Town Hall.....	S. Norfolk.....	" 19th
17. Port Rowan, Council Chamber.....	S. Norfolk.....	" 20th
18. Vittoria, Lecture Room.....	S. Norfolk.....	" 22nd

DIVISION 5.

A. McNeill, Walkerville; Mrs. Andrew Kinny, Grand View.

1. St. George, Public Library.....	N. Brant.....	Jan. 2nd and 3rd
2. Rockton, Township Hall.....	N. Wentworth.....	Jan. 4th
3. Freelon, Town Hall.....	N. Wentworth.....	" 5th
4. Milton, Town Hall.....	Halton.....	" 6th
5. Acton, Town Hall.....	Halton.....	" 8th
6. Ospringle, Town Hall.....	C. Wellington.....	" 9th
7. Guelph, City Hall.....	S. Wellington.....	Jan. 10th and 11th
8. Galt, Fraser's Hall.....	S. Waterloo.....	Jan. 12th
9. Haysville, Haysville Hall.....	S. Waterloo.....	" 13th
10. Wellesley, Village Hall.....	N. Waterloo.....	" 15th
11. St. Jacobs, Council Chamber.....	N. Waterloo.....	" 16th
12. Glenallen, Coot's Hall.....	W. Wellington.....	" 17th
13. Drayton, Whyte's Hall.....	W. Wellington.....	" 18th
14. Alma, Town Hall.....	C. Wellington.....	" 19th
15. Farewell, Orange Hall.....	E. Wellington.....	" 20th
16. Cedarville, Orange Hall.....	E. Wellington.....	" 22nd

DIVISION 6.

Major James Sheppard, Queenston; John Echlin, Carleton Place.

1. Owen Sound, Y. M. C. A. Hall.....	N. Grey (afternoon).....	Jan. 2nd
2. Kilsyth.....	N. Grey (evening).....	" 2nd
3. Flesherton, Township Hall.....	C. Grey.....	" 3rd
4. Shelburne, Town Hall.....	Dufferin.....	" 4th
5. Orangeville, Town Hall.....	Dufferin.....	" 5th
6. Beeton, Town Hall.....	S. Simcoe.....	" 6th
7. Creemore, Leonard's Hall.....	W. Simcoe.....	" 8th
8. Duntroon, Sons of Scotland Hall.....	W. Simcoe.....	" 9th
9. Meaford, Town Hall.....	N. Grey.....	" 10th
10. Thornbury, Town Hall.....	C. Grey.....	" 11th
11. Barrie, Town Hall.....	C. Simcoe.....	" 12th
12. Midland, Town Hall.....	C. Simcoe.....	" 13th
13. Coldwater, St. Mathias Hall.....	E. Simcoe.....	" 15th
14. Orillia, Opera House.....	E. Simcoe.....	" 16th
15. Sparrow Lake, Schoolhouse.....	E. Simcoe (afternoon).....	" 17th
16. Severn Bridge, Clealand's Hall.....	E. Simcoe (evening).....	" 17th
17. Hawkstone, Moore and Connell Hall.....	E. Simcoe (afternoon).....	" 18th
18. Rugby, Temperance Hall.....	E. Simcoe (evening).....	" 18th
19. Tompkins School.....	E. Simcoe (afternoon).....	" 19th
20. Creighton.....	E. Simcoe (evening).....	" 19th
21. Moonstone.....	E. Simcoe (afternoon).....	" 20th
22. Hillsdale, Temperance Hall.....	E. Simcoe (afternoon).....	" 22nd
23. Edgar, Temperance Hall.....	E. Simcoe (evening).....	" 22nd
24. Shanty Bay, Temperance Hall.....	E. Simcoe (afternoon).....	" 23rd
25. Crown Hill, Temperance Hall.....	E. Simcoe (evening).....	" 23rd
26. Stroud, Temperance Hall.....	S. Simcoe.....	" 24th
27. Aurora, Town Hall.....	N. York.....	" 25th
28. Mount Albert, Army Hall.....	N. York.....	" 26th

DIVISION 11.

Robert Thompson, St. Catharines; W. S. Fraser, Bradford.

1. Powassan, McArthur's Hall.....	E. Parry Sound.....	Jan. 2nd
2. South River, Connolly's Hall.....	E. Parry Sound.....	" 3rd
3. Sundridge, Orange Hall.....	E. Parry Sound.....	" 4th
4. Burk's Falls, Court House.....	E. Parry Sound.....	" 5th
5. Kearney.....	E. Parry Sound.....	" 6th
6. Sprucedale.....	E. Parry Sound.....	" 8th
7. Parry Sound, Town Hall.....	W. Parry Sound.....	" 9th
8. Carling, No. 2 Schoolhouse.....	W. Parry Sound.....	" 10th
9. Dunchurch, Keley Hall.....	W. Parry Sound (afternoon).....	" 12th
10. McKellar, Armstrong Hall.....	W. Parry Sound (evening).....	" 12th
11. Broadbent, Hemlock Hall.....	W. Parry Sound (afternoon).....	" 13th
12. Hurdville, Orange Hall.....	W. Parry Sound (evening).....	" 13th
13. Foley, No. 2 Schoolhouse.....	W. Parry Sound (afternoon).....	" 15th



14. Falding, Rankin's Hall	W. Parry Sound (evening)	Jan. 15th
15. Novar, Alkin's Hall	N. Muskoka	" 16th
16. Huntsville, Court House	N. Muskoka	" 17th
17. Hillside, Schoolhouse	N. Muskoka	" 18th
18. Brunel, Township Hall	N. Muskoka	" 19th
19. Ravenscliffe, Patrons' Hall	N. Muskoka	" 20th
20. Stisted, Township Hall	N. Muskoka	" 22nd
21. Utterson, Town Hall	C. Muskoka	" 23rd
22. Port Sydney, Music Hall	C. Muskoka (afternoon)	" 24th
23. Beatrice, G. Templars' Hall	C. Muskoka (evening)	" 24th
24. Baysville, Orange Hall	S. Muskoka	" 25th
25. Bracebridge, Town Hall	S. Muskoka	" 26th
26. Uffington, Fielding's Hall	S. Muskoka	" 27th
27. Gravenhurst, Orange Hall	S. Muskoka	" 29th
28. Bala, Burgess Hall	Port Carling and Bala	" 30th
29. Port Carling, Victoria Hall	Port Carling and Bala	" 31st

DIVISION 12.

G. C. Caston, Craighurst ; A. C. Hallman, New Durdee.

1. Sault Ste. Marie, Council chamber	C. Algoma	Jan. 2nd
2. Goulais River Mountain, Schoolhouse	C. Algoma	" 3rd
3. Tarentarus, Schoolhouse	C. Algoma	" 4th
4. East Korah, Schoolhouse	C. Algoma	" 5th
5. Base Line, Schoolhouse	C. Algoma	" 6th
6. McLennan, Temperance Hall	St. Joseph Island	" 8th
7. Richard's Landing, Johnson's Hall	St. Joseph Island	" 9th
8. Jocelyn, Kent's Hall	St. Joseph Island	" 10th
9. Mountain, Schoolhouse	St. Joseph Island	" 11th
10. Tenby Bay, Schoolhouse	St. Joseph Island	" 12th
11. Marksville, Town Hall	St. Joseph Island	" 13th
12. Walford	E. Algoma	" 15th
13. Thessalon, Kuche's Hall	E. Algoma	" 16th
14. Sowerby, Maccabee's Hall	E. Algoma	" 17th
15. Wharncliffe, Schoolhouse	E. Algoma	" 18th
16. Bellingham	E. Algoma	" 19th
17. Iron Bridge, Orange Hall	E. Algoma (afternoon)	" 20th
18. Blind River, Schoolhouse	E. Algoma (evening)	Jan. 20th
19. Mindemoya, Tahkummah, Manitowaning, Green Bay, Sheguiandah, Little Current	E. Manitoulin	Jan. 23rd to 27th

Supplementary Meetings.

DIVISION 1.

T. G. Raynor, B.S.A., Rose Hall ; A. W. Peart, B.A., Burlington.

1. Harriston	Union	Jan. 30th
2. Drew, Temperance Hall	Union	" 31st
3. Holstein, Agricultural Hall	S. Grey	Feb. 1st
4. Ayton, Doersam's Hall	S. Grey	" 2nd
5. Hepworth, Schoolhouse	N. Bruce	" 3rd
6. Mar, Schoolhouse	N. Bruce	" 5th
7. Warton, Robinson Hall	N. Bruce	" 6th
8. Allenford, Orange Hall	W. Bruce	" 7th
9. Burgovne, Hartley's Hall	W. Bruce	" 8th
10. Ribey's Schoolhouse	W. Bruce	" 9th
11. Tiverton, Town Hall	W. Bruce	" 10th
12. Kincardine, Town Hall	C. Bruce	" 12th
13. Ripley, Agricultural Hall	C. Bruce	" 13th
14. Bervie, Orange Hall	C. Bruce	" 14th
15. Glamis, Methodist Hall	C. Bruce	" 15th
16. Cargill, Forester's Hall	S. Bruce	" 16th
17. Teeswater, Township Hall	S. Bruce	" 17th
18. Belmore, Forester's Hall	S. Bruce	" 19th
19. Mildmay, Township Hall	S. Bruce	" 20th
20. Fordwich, Donaghey's Hall	E. Huron	" 21st
21. St. Helen's, Village Hall	W. Huron	" 22nd
22. Auburn, Village Hall	W. Huron	" 23rd
23. Leeburn, Village Hall	W. Huron	" 24th
24. Kintail, Village Hall	W. Huron	" 26th

DIVISION 2A,

Major Jas. Sheppard, Queenston ; G. A. Brodie, B.S.A., Bethesda, Jan. 30th to Feb. 3rd, inclusive ; A. P. Ketchen, Feb. 5th to 23rd, inclusive.

1. Varna, Town Hall	S. Huron	Jan. 30th
2. Zurich, Town Hall	S. Huron	" 31st
3. Hensall, Town Hall	S. Huron	Feb. 1st
4. Lobo, Foresters' Hall	N. Middlesex	" 2nd
5. Adelaide, Town Hall	N. Middlesex	" 3rd
6. Beechwood, Grange Hall	N. Middlesex	" 5th
7. Sylvan, Maccabees' Hall	N. Middlesex	" 6th
8. Greenway, Wilson's Hall	N. Middlesex	" 7th
9. West MacGillivray, Town Hall	N. Middlesex	" 8th
10. Clandeboyo, Temperance Hall	N. Middlesex	" 9th
11. Granton, Coxen's Hall	N. Middlesex	" 10th
12. Arkona, Schowler Hall	E. Lambton	" 12th
13. Watford, Music Hall	E. Lambton	" 13th
14. Wyoming, Temperance Hall	E. Lambton	" 14th
15. Camlachie, Masonic Hall	E. Lambton	" 15th
16. Sarnia, Council Chamber	W. Lambton (afternoon)	" 16th
17. Sarnia Township, Moore Line School House	W. Lambton (evening)	" 16th
18. Courtright, Stewart Hall	W. Lambton	" 17th
19. Wilkesport, Richmond Hall	W. Lambton	" 19th
20. Oil City, Duncan Hall	W. Lambton	" 20th
21. Rutherford, Township Hall	E. Lambton	" 21st
22. Inwood, Orange Hall	W. Lambton	" 22nd
23. Cairo, Town Hall	E. Lambton	" 23rd

Ensilage ; " Poultry for Pleasure and Profit."

McMILLAN, JOHN, M.P., Seaforth, (See GAZETTE, Oct. 24th.)

McNABB, MUNGO, Cowal—" Beef Production ; " " Sheep Breeding and Management ; " " Underdraining ; " " Corn Growing ; " " Country Roads." Evening Subjects : " Fertility ; " " Boys on the Farm."

McNEILL, A., Walkerville — " Spraying for Insect and Fungous Diseases ; " " Apple Culture ; " " Every Farmer his own Mason, or Concrete in Farm Structures" (with charts) ; " Co-Operation Among Farmers ; " " Small Fruit Culture ; " " Clover and Corn, Their Value as Feed" (with charts) ; " The Farm Water Supply" (with plans). Evening Subjects : " The Education of the Farmer ; " " The Social Side of Farm Life ; " " Some Insect Friends and Foes ; " " Flowers and Fruit for Country Homes ; " " How to Plan the Farm Home so as to Lighten the House Work" (with plans).

MADDOCK, MISS B., Guelph— (See Gazette, Oct. 24th.)

MASON, T. H., Straffordville — " Butter-Making in the Home Dairy ; " " Food and Care of Dairy Cattle ; " " Corn Growing and the Silo ; " " Root Crops and Potatoes ; " " Hog Raising ; " " Poultry Keeping from a Farmer's Standpoint." Evening Subjects : " Outlook of Ontario Farmer ; " " Some National Problems."

MEYER, J. E., Kossuth—" The Different Breeds of Poultry ; their Uses, Characteristics and Adaptability to the Farm ; " " The Care and Management of Chickens, Young Turkeys, Ducklings and Goslings ; " " How to Build a Poultry House and How to Keep your Poultry Healthy and Free from Vermin ; " " How to Make the Most Money out of the Poultry on the Farm, Including Preparation for the British Market."

MONTEITH, NELSON, B.S.A., M.P.P., Stratford—" Underdraining ; " " Growing and Saving Corn ; " " Cultivation of the Soil ; " " Feeding Cattle for Export." Evening subjects : " The Ontario Agricultural College ; " " Farming as a Profession ; " " Country Roads."

NASH, C. W., Toronto—" Common Sense Spraying ; " " What our Hawks and Owls do ; " " The Value of our Small Birds ; " " How to Make a Fishery ; " " The Best Fish for Ponds ; " " Nature about the Farm."

ORR, J. E., Fruitland—" The Common Insects Attacking Fruit and Foliage, and How to Destroy Them ; " " Fungi Which Attack Fruit and Fruit Trees ; " " Spraying an Apple Orchard ; " " The San Jose Scale ; " " Care of Fruit Trees ; " " Plum Growing for Profit."

PAGET, J. N., Canboro — (See Gazette, Oct. 24th.)

PEART, A. W., B.A. Burlington — " Apples, Pears, Plums, Grapes, Blackberries, Raspberries, Currants ; Their



Varieties, Cultivation, Management, Marketing, etc.;" "Insects and Fungi Injurious to our Orchards and How to Combat Them;" "The San Jose Scale;" "Wheat Growing;" "Cultivation of the Soil;" "Spraying;" "Underdraining;" "The Production of Pork." Evening subjects: "Leaks on the Farm;" "Agricultural Education."

RAYNOR, T. G., B.S.A., Rosehall—(See GAZETTE, Oct. 24th.)

RENNIE, SIMPSON, Milliken—"Underdraining;" "Cultivation Required for Corn, Field Roots and Potatoes;" "The Destruction of Weeds;" "Rotation of Crops;" "The Importance of Fall Cultivation;" "Buying and Feeding Cattle for the British Market;" "Feeding and Marketing Hogs." Evening subjects: "Our Country, Past and Present."

RENNIE, WILLIAM, SR., Toronto—(See GAZETTE, Oct. 24th.)

REYNOLDS, A. J., Danforth—"Silo and Ensilage;" "Cultivation of the Soil;" "Weeds;" "Growing Clover;" "Summer and Winter Dairying;" "Farm Implements;" "Farming, Past and Present;" "Selection of a Home."

ROGERS, MRS. M. J. Kinsale—"Home Influence Upon Our Young People;" "Farm Life, Why Successful or Otherwise;" "The Road to Success, or How to Make a Real Success of Life;" "The Signs of the Times;" "How the Usefulness of the Farmers' Institutes May be Increased;" "The Ideal Home."

ROSE, MISS L., O.A.C., Guelph—(See GAZETTE, Oct. 24th.)

ROSS, H. R., Gilead—"The Relative Value of Rolling Land, not Rolling and Harrowing after Rolling;" "Soil Moisture;" "Influence of Breed Types;" "Balanced Rations;" "The Value of the Babcock Milk Test to the Farmer." Evening subject: "Insect Foes and Their Remedies."

SHEARER, W. C., Bright—"Growing Corn in Drills and Hills for the Silo;" "Growing Mangels;" "Growing Turnips;" "Cost of Cementing Stable Floors;" "Building up and Maintaining a Dairy Herd;" "Breeding and Feeding Hogs for Profit." Evening Subjects: "Making Prize Butter;" "Raising Pure-bred Poultry on the Farm."

SHEPPARD, MAJOR JAS., Queenston—(See Gazette, Oct. 24th.)

SMITH, MRS. J. L., Whitby—"A Common Sense Talk to Young Farmers and Their Wives;" "Young Men on the Farm, Their Chances of Success;" "A Talk on Domestic Economy;" "How Shall We Educate and Influence Our Boys so as to Keep Them on the Farm?" "Farmers' Wives and Daughters, Their Duties, Delights, and Discouragements;" "Women's Institutes, Their Object and Aim."

SMITH, WM., Columbus—"Breeding and Care of Heavy Horses;" "Cultivation of the Soil in Spring and Fall;" "Elements of Success in Farming;" "Breeding and Care of Sheep."

DIVISION 2B.

A. McNeil, Walkerville; T. H. Mason, Strathfordville.

1. Ethel, Town Hall	E. Huron	Jan. 30th
2. Constance, Town Hall	E. Huron	" 31st
3. Murdie's Schoolhouse	E. Huron	Feb. 1st
4. Staffa, Public Hall	S. Perth	" 2nd
5. Russeldale, Chosen Friends' Hall	S. Perth	" 3rd
6. Bornholm, Public Hall	S. Perth	" 5th
7. Monkton, Town Hall	N. Perth	" 6th
8. Atwood, Agricultural Hall	N. Perth	" 7th
9. Listowel, Town Hall	N. Perth	" 8th
10. Millbank, Rutherford's Hall	N. Perth	" 9th
11. Wartburg	N. Perth	" 10th
12. Sebringville, Forester's Hall	S. Perth	" 12th
13. Tavistock, Public Hall	S. Perth	" 13th
14. Plattsville, Town Hall	N. Oxford	" 14th
15. Woodstock, Town Hall	N. Oxford	" 15th
16. Embro, Town Hall	N. Oxford	" 16th
17. Thamesford, Town Hall	N. Oxford	" 17th
18. Putnam	E. Middlesex	" 19th
19. Derwent	E. Middlesex	" 20th
20. White Oak	E. Middlesex	" 21st
21. Ilderton	E. Middlesex	" 22nd
22. Bryanston, Temperance Hall	E. Middlesex	" 23rd
23. Wellburn, German Hall	E. Middlesex	" 24th

DIVISION 3.

Henry Glendinning, Manilla; W. N. Hutt, Southend.

1. Melbourne, Masonic Hall	W. Middlesex	Jan. 30th
2. Napier, Township Hall	W. Middlesex	" 31st
3. Glencoe, Thomson's Hall	W. Middlesex	Feb. 1st
4. Bothwell, Town Hall	E. Kent	" 2nd
5. Croton, Croton Hall	E. Kent	" 3rd
6. Chatham, old Town Hall	W. Kent	" 5th
7. Tilbury	W. Kent	" 6th
8. Merlin, Mason's Hall	W. Kent	" 7th
9. Romney, Township Hall	W. Kent	Feb. 8th
10. Wheatley, Gibson's Hall	S. Essex	" 9th
11. Leamington, Town Hall	S. Essex	" 10th
12. Cottam, Town Hall	S. Essex	" 12th
13. Harrow, Town Hall	S. Essex	" 13th
14. Essex, I. O. O.	S. Essex	" 14th
15. Amherstburg, Town Hall	S. Essex	" 15th
16. Blenheim, Township Hall	E. Kent	" 16th
17. Ridgetown, Township Hall	E. Kent	" 17th
18. West Lorne, Township Hall	W. Elgin	" 19th
19. Wallacetown, Township Hall	W. Elgin	" 20th
20. Middlemarch, Grange Hall	W. Elgin	" 21st
21. Yarmouth Centre, Township Hall	E. Elgin (afternoon)	" 22nd
22. Sparta, Village Hall	E. Elgin (evening)	" 22nd
23. Springfield, Village Hall	E. Elgin (afternoon)	" 23rd
24. Strathfordville, Bayham Hall	E. Elgin (evening)	" 23rd

DIVISION 4 A.

J. S. Woodward, Lockport, N.Y.; Miss Alice Hollingworth, Beatrice, Muskoka.

1. Springfield, Town Hall	S. Oxford	Jan. 30th
2. Burgesville, Oddfellows' Hall	S. Oxford	" 31st
3. Beachville, Town Hall	S. Oxford	Feb. 1st
4. Vandecar, Schoolhouse	S. Oxford	" 2nd
5. Harley, Township Hall	S. Brant	" 3rd
6. Burford, Barnes Hall	S. Brant	" 5th
7. Scotland, Foster's Hall	S. Brant	" 6th
8. Caledonia, Association Hall	Haldimand	" 7th
9. Canfield, Grange Hall	Haldimand	" 8th
10. Cheapside, Town Hall	Haldimand	" 9th
11. Walpole Centre, Township Hall	Haldimand	" 10th
12. Port Dover, Town Hall	S. Norfolk	" 12th
13. Walsingham Centre, Town Hall	S. Norfolk	" 13th
14. Clear Creek, Town Hall	S. Norfolk	" 14th
15. Fair Ground, Town Hall	S. Norfolk	" 15th
16. Lynedooh, Foresters' Hall	S. Norfolk	" 16th
17. Windham Centre, Town Hall	N. Norfolk	" 17th
18. Bealton, Bealton Hall	N. Norfolk	" 19th

DIVISION 4B.

Andrew Elliott, Galt; C. W. Nash, 105 Waverley Road, Toronto.

1. Brookville, Township Hall	Halton	Jan. 30th
2. Kilbride, Town Hall	Halton	" 31st
3. Postville, Township Hall	Halton	Feb. 1st
4. Burlington, Town Hall	Halton	" 2nd
5. Watford, Township Hall	N. Wentworth	" 3rd
6. Millgrove, Town Hall	N. Wentworth	" 5th
7. Kirkwall, Schoolhouse	N. Wentworth	" 6th
8. Jerseyville, Palmer Hall	S. Wentworth	" 7th
9. Eustice's Hall, Barton Township	S. Wentworth	" 8th
10. Carluke, Schoolhouse	S. Wentworth	" 9th
11. Glanford, Town Hall	S. Wentworth	" 10th
12. Binbrook, Town Hall	S. Wentworth	" 12th
13. Tapleystown, Buck Hall	S. Wentworth	" 13th
14. Smithville, Agricultural Hall	Monck	" 14th
15. Pelham Centre, Town Hall	Monck	" 15th
16. Beamsville	Lincoln	" 16th
17. Jordan, Zimmerman's Hall	Lincoln	" 17th
18. Queenston	Lincoln	" 19th
19. Allanburg, Town Hall	Welland	" 20th
20. Crowland, Town Hall	Welland	" 21st
21. Stevensville, Johnston's Hall	Welland	" 22nd

22. Sherkeston, Schoolhouse.....	Welland.....	Feb. 23rd
23. Dunnville, Town Hall.....	Monck.....	" 24th

DIVISION 5.

Duncan Anderson, Rugby ; W. C. Shearer, Bright.		
1. Onondaga, Township Hall.....	N. Brant.....	Jan. 30th
2. Moyle's Schoolhouse.....	N. Brant.....	" 31st
3. Glenmerris, Township Hall.....	N. Brant.....	Feb. 1st
4. Branchton, Branchton Hall.....	S. Waterloo.....	" 2nd
5. Preston, Town Hall.....	S. Waterloo.....	" 3rd
6. New Dundee, Mayer's Hall.....	S. Waterloo.....	" 5th
7. New Hamburg, William Tell Hall.....	S. Waterloo.....	" 6th
8. St. Clements, Greyerbiehl's Hall.....	N. Waterloo.....	" 7th
9. Winterbourne, Lecture Room.....	N. Waterloo.....	" 8th
10. Berlin, Y.M.C.A. Hall.....	N. Waterloo (Aft.).....	" 9th
11. Centreville, Township Hall.....	N. Waterloo (Evg.).....	" 9th
12. Hillsburg, Town Hall.....	C. Wellington.....	" 10th
13. Belwood, Town Hall.....	C. Wellington.....	" 12th
14. Metz, Orange Hall.....	C. Wellington.....	" 13th
15. Grand Valley, Tough's Hall.....	E. Wellington.....	" 14th
16. Arthur, Town Hall.....	E. Wellington.....	" 15th
17. Kenilworth, Township Hall.....	E. Wellington.....	" 16th
18. Mount Forest, Town Hall.....	E. Wellington.....	" 17th
19. Palmerston, Town Hall.....	W. Wellington.....	" 19th
20. Moorefield, Township Hall.....	W. Wellington.....	" 20th
21. Rothsay, Temperance Hall.....	W. Wellington.....	" 21st

DIVISION 6.

Simpson Rennie, Milliken ; C. A. Zavitz, O. A. C., Guelph, Jan. 30th to Feb. 3rd, inclusive. J. G. Davidson, Collingwood, Feb. 5th to 27th, inclusive.

1. Desboro', Township Hall.....	N. Grey.....	Jan. 30th
2. Kemble, Schoolhouse.....	N. Grey.....	" 31st
3. Annan, Grange Hall.....	N. Grey (afternoon).....	Feb. 1st
4. Leith.....	N. Grey (evening).....	" 1st
5. Bognor.....	N. Grey.....	" 2nd
6. Kimberley, Union Hall.....	C. Grey.....	" 3rd
7. Maxwell, Orange Hall.....	C. Grey.....	" 5th
8. Priceville, Watson's Hall.....	C. Grey.....	" 6th
9. Dundalk.....	C. Grey.....	" 7th
10. Horning's Mills, Workman's Hall.....	Dufferin.....	" 8th
11. Laurel, Temperance Hall.....	Dufferin.....	" 9th
12. Relessey, Orange Hall.....	Dufferin.....	" 10th
13. Mansfield, Orange Hall.....	Dufferin.....	" 12th
14. Lisle.....	W. Simcoe.....	" 13th
15. Collingwood, Court Room.....	W. Simcoe.....	" 14th
16. Stayner, Stewart's Hall.....	W. Simcoe.....	" 15th
17. Ebenezer, Methodist Hall.....	C. Simcoe.....	" 16th
18. Lafontaine, Piquac's Hall.....	C. Simcoe.....	" 17th
19. Crossland, Knox Hall.....	C. Simcoe.....	" 19th
20. Minesing, Workman's Hall.....	C. Simcoe.....	" 20th
21. Thornton, Orange Hall.....	S. Simcoe.....	" 21st
22. Bond Head, Orange Hall.....	S. Simcoe.....	" 22nd
23. Newmarket, Temperance Hall.....	N. York.....	" 23rd
24. Sutton West, Sheppard's Hall.....	N. York.....	" 24th
25. Stouffville.....	N. York.....	" 26th
26. Laskey.....	N. York.....	" 27th

DIVISION 7A.

John I. Hobson, Guelph ; W. C. Shearer, Bright.		
1. Bolton, Town Hall.....	Peel.....	Jan. 2nd
2. Palgrave.....	Peel.....	" 3rd
3. Caledon East, Hanton's Hall.....	Peel.....	" 4th
4. Cheltenham, Beaver Hall.....	Peel.....	" 5th
5. Belfontain.....	Peel.....	" 6th
6. Streetsville, Graydon's Hall.....	Peel.....	" 8th
7. Cooksville, Township Hall.....	Peel.....	" 9th
8. Elmbank.....	Peel.....	" 10th
9. Islington, Township Hall.....	W. York.....	" 11th
10. Thistletown, Rountree's Hall.....	W. York.....	" 12th
11. Kleinburg, Orange Hall.....	W. York.....	" 13th
12. Maple, Masonic Hall.....	W. York.....	" 15th
13. Wexford, Methodist Hall.....	E. York.....	" 16th
14. Unionville, Victoria Hall.....	E. York.....	" 17th
15. Goodwood, Town Hall.....	N. Ontario.....	" 18th
16. Zephyr, Public Hall.....	N. Ontario.....	" 19th
17. Udora, Orange Hall.....	N. Ontario.....	" 20th
18. Cannington, Town Hall.....	N. Ontario.....	" 22nd
19. Brechin, McGrath's Hall.....	N. Ontario.....	" 23rd
20. Uptergrove, Public Hall.....	N. Ontario.....	" 24th
21. Rama, Town Hall.....	N. Ontario.....	" 25th
22. Woodville, Village Hall.....	W. Victoria.....	" 26th

DIVISION 7B.

T. G. Raynor, B.S.A., Rosehall ; H. R. Ross, B.S.A., Gilead.		
1. Pickering, Dale's Hall.....	S. Ontario.....	Jan. 2nd
2. Oshawa, Town Hall.....	S. Ontario.....	" 3rd
3. Whitby, Council Chamber.....	S. Ontario.....	" 4th
4. Greenbank, Town Hall.....	S. Ontario.....	" 5th
5. Port Perry, Town Hall.....	S. Ontario.....	" 6th
6. Myrtle, Temperance Hall.....	S. Ontario.....	" 8th
7. Blackstock, Town Hall.....	W. Durham.....	" 9th
8. Solina, Sons' Hall.....	W. Durham (aft.).....	" 10th
9. Tyrone, Sons' Hall.....	W. Durham (evening).....	" 10th
10. Orono, Town Hall.....	W. Durham (afternoon).....	" 11th
11. Kendal, Orange Hall.....	W. Durham (evening).....	" 11th
12. Welcome, Temperance Hall.....	E. Durham.....	" 12th
13. Garden Hill, Orange Hall.....	E. Durham.....	" 13th

SOMERVILLE, NELSON G., Lanark—  
 "What the Farmer of To-day Must Do to Secure More Profit in Dairying;"  
 "The Milk Producer's Responsibility;"  
 "Proper Care of Milk for Cheese Factories and Creameries;" "Paying for Milk According to Quality." Evening Subject: "The Influences of the Farm Home."

STEVENSON, R. S., Ancaster—  
 "Breeding and Rearing Dairy Cattle;"  
 "Feeding Dairy Cows;" "Selecting Dairy Cows;" "How to Choose a Bull for Service in the Dairy Herd."

THOMPSON, R., St. Catharines—  
 "Cultivation of the Soil;" "Care of Small Fruit and Fruit Trees;" "Corn Growing for Grain and the Silo;"  
 "Swine Breeding and Feeding;" "The Export Bacon Trade;" "Ice Houses and Cold Storage for the Farm;"  
 "Underdraining;" "City versus Country Life;" "The San José Scale in Our Orchards."

TOLTON, JAS., Walkerton—  
 "Mistakes in Sheep Breeding;" "Management of the Breeding Flock;" "Breeding and Feeding Hogs for Market;"  
 "Selecting and Feeding Cattle for the British Market;" "Cultivation of Roots;" "The Farmer's Orchard;"  
 "Making a Country Home Attractive."

USHER, HUDSON, Queenston—  
 "Cement and Concrete: Their Use on the Farm."

USHER, I., Queenston—  
 "Cement and Concrete: Their Use on the Farm."

WHEATLEY, T. C., Blackwell—  
 "Our Weed Enemies," with 50 mounted specimens of the newer ones now threatening us;" "Native and Introduced Grasses," illustrated with numerous specimens;" "How We May Add to the Interest and Beauty of the Farm and its Surroundings;" "The Importance of Farm Accounts, and How Most Conveniently to Keep Them;"  
 "How Education May Aid in Making Farming a Success."

WOODWARD, J. S., Lockport, N. Y.—  
 (See GAZETTE, Oct. 24th.)

ZAVITZ, C. A., B.S.A., Guelph—  
 "Results of Experiments in the Selection of Seed;" "The Best Varieties of Farm Crops for Ontario;" "Some Special Farm Crops, Rape, Hairy Vetch, Cow Peas, Soy Beans, Crimson Clover, Lucerne, etc.;" "Results of Experiments in Growing Potatoes;" "The Fertility of the Soil." Evening Subject: "Past, Present and Future Work of the Ontario Agricultural College."

List of Reserve Speakers.

The following is a list of reserved delegates whose services may be obtained by local institutes at the time indicated after each name, and on the following terms: The legitimate expenses of the delegate must be borne by the Institute employing him or her from the time he or she leaves home until he or she returns thereto, to-

gether with a per diem of \$2.50 for the time the person is absent from home, Sunday excepted:  
 Battle, James, Thorold—Any time.  
 Brodie, G. A., Bethesda—January 1st to 29th, and after February 3rd.  
 Burrell, Martin, St. Catharines—An occasional meeting during December, January, and February.  
 Campbell, A. M., Dominionville—February.  
 Caston, G. C., Craighurst—December and February.  
 Echlin, John, Carleton Place—December and January.  
 Elliott, A., Galt—December.  
 Ficht, V., Oriel—December, January, and February.  
 Fraser, W. S., Bradford—December and January.  
 Hallman, A. C., New Dundee—February.  
 Hilborn, W. W., Leamington—December, January, and February.  
 Hutt, W. N., Southend—December and January.  
 Honey, R., Brickley—December, January, and February.  
 Ketchen, A. P., Brucefield—December.  
 Lewis, F. M., Burford—December, and after January 18th.  
 Lott, B. O., Anson—December, January, and February.  
 McCrae, D., Guelph—December, January, and February.  
 McCulloch, R., Snelgrove—December, January, and February.  
 McEwing, J., Drayton—December, January, and February.  
 McLean, A., Carleton Place—December, January, and February.  
 McMillan, John, M.P., Seaforth—After January 18th.  
 McNabb, Mungo, Cowal—December, January, and February.  
 Mason, T. H., Straffordville—January.  
 Meyer, J. E., Kossuth—January 15th to February 3rd.  
 Monteith, Nelson, M.P.P., Stratford—December, January, and February.  
 Nash, C. W., Toronto—December and January.  
 Orr, J. E., Fruitland—December and February.  
 Rennie, Simpson, Milliken—January.  
 Reynolds, A. J., Danforth—December, January, and February.  
 Ross, H. R., Gilead—December, and after January 22nd.  
 Smith, Wm., Columbus—December, January, and February.  
 Somerville, Nelson G., Lanark—December and February.  
 Stevenson, R. S., Ancaster—December, January, and February.  
 Thompson, R., St. Catharines—December and February.  
 Tolton, Jas., Walkerton.—January and February.  
 Usher, Hudson, Queenston—Occasionally during January and February.  
 Usher, I., Queenston—Occasionally during January and February.

(Continued on page 329.)

14.	South Monaghan, Town Hall.....	E. Durham.....	Jan.	15th
15.	Lifford, Temperance Hall.....	E. Durham.....	"	16th
16.	Omeme, Bradburn's Hall.....	E. Victoria.....	"	17th
17.	Downeyville, Library Hall.....	E. Victoria.....	"	18th
18.	Dunsford, Old English Church.....	E. Victoria.....	"	19th
19.	Cameron, Orange Hall.....	E. Victoria.....	"	20th
20.	Burnt River, Orange Hall.....	E. Victoria (afternoon).....	"	22nd
21.	Kinmount, Scott's Hall.....	E. Victoria (evening).....	"	22nd

N.B.—Supplementary meetings in North Hastings will be arranged at a later date.

DIVISION 8.

J. E. Orr, Fruitland; N. G. Somerville, Lanark.				
1.	Cold Springs, Township Hall.....	W. Northumberland.....	Jan.	2nd
2.	Harwood, Boyle Hall.....	W. Northumberland.....	"	3rd
3.	Castleton, Town Hall.....	E. Northumberland.....	"	4th
4.	Wooley, Town Hall.....	E. Northumberland.....	"	5th
5.	Cressy, (A.O.U.W. Hall).....	Prince Edward (afternoon).....	"	6th
6.	Waupoos, Town Hall.....	Prince Edward (evening).....	"	6th
7.	Milford, Town Hall.....	Prince Edward.....	"	8th
8.	Cherry Valley, Town Hall.....	Prince Edward.....	"	9th
9.	Wellington, Music Hall.....	Prince Edward.....	"	10th
10.	Ameliasburg, Town Hall.....	Prince Edward.....	"	11th
11.	Consecon, Killip's Hall.....	Prince Edward.....	"	12th
12.	Harder's School House.....	W. Hastings.....	"	13th
13.	Gilbert's School House.....	W. Hastings.....	"	15th
14.	Turner's School House.....	W. Hastings.....	"	16th
15.	Foxboro.....	E. Hastings.....	"	17th
16.	Melrose, Town Hall.....	E. Hastings.....	"	18th
17.	Thomasburg.....	E. Hastings.....	"	19th
18.	Tweed, Town Hall.....	E. Hastings.....	"	20th
19.	Menie, Lamb's Hall.....	E. Northumberland.....	"	22nd
20.	Norwood, Town Hall.....	E. Peterboro'.....	"	23rd
21.	Havelock, School House.....	E. Peterboro'.....	"	24th
22.	Keene, Town Hall.....	E. Peterboro'.....	"	25th
23.	Hall's Bridge, Orange Hall.....	W. Peterboro'.....	"	26th
24.	Ennismore, Town Hall.....	W. Peterboro' (afternoon).....	"	27th
25.	Bridgenorth, Town Hall.....	W. Peterboro' (evening).....	"	27th

DIVISION 9.

A. P. Ketchen, Brucefield; A. M. Campbell, Dominionville.				
1.	Tamworth, Town Hall.....	Addington.....	Jan.	2nd
2.	Enterprise, R. Cox's Hall.....	Addington.....	"	3rd
3.	Roblin, Town Hall.....	Lennox.....	"	4th
4.	Selby, Town Hall.....	Lennox.....	"	5th
5.	North Fredericksburg, Town Hall.....	Lennox.....	"	6th
6.	Switzerville, School House.....	Lennox.....	"	8th
7.	Odessa, Town Hall.....	Lennox.....	"	9th
8.	Adolphstown, Town Hall.....	Lennox.....	"	10th
9.	Sillsville, Town Hall.....	Lennox.....	"	11th
10.	Emerald, Cheese Factory.....	Amherst Island.....	"	12th
11.	Stella, Town Hall.....	Amherst Island.....	"	13th
12.	Catarqui, Town Hall.....	Frontenac.....	"	15th
13.	Sunbury, Town Hall.....	Frontenac.....	"	16th
14.	Seeley's Bay, Select Knight's Hall.....	S. Leeds.....	"	17th
15.	Newboro', Victoria Hall.....	S. Leeds.....	"	18th
16.	Delta, Town Hall.....	S. Leeds.....	"	19th
17.	Athens, High School Hall.....	Brockville.....	"	20th
18.	Caintown.....	Brockville.....	"	22nd
19.	Lyn, School House.....	Brockville.....	"	23rd
20.	Fairfield East, Forester's Hall.....	Brockville.....	"	24th
21.	Algorquin, Temperance Hall.....	S. Grenville.....	"	25th
22.	Cardinal, Town Hall.....	S. Grenville.....	"	26th
23.	Harrison's Corners, School House.....	Cornwall.....	"	27th
24.	South Branch, Patron's Hall.....	Cornwall.....	"	29th
25.	North Branch, School House.....	Cornwall.....	"	30th
26.	Martintown, Mrs. McIntosh's Hall.....	Glengarry.....	"	31st
27.	North Lancaster, Mrs. McDonald's Hall.....	Glengarry.....	Feb.	1st

DIVISION 10.

J. G. Davidson, Collingwood; D. Drummond, Myrtle (late of Petite Cote, Montreal, Que.).				
1.	Alfred, Town Hall.....	Prescott.....	Jan.	2nd
2.	St. Eugene, Town Hall.....	Prescott.....	"	3rd
3.	Dalkeith, Public School.....	Glengarry.....	"	4th
4.	Dunvegan, McKenzie's Hall.....	Glengarry.....	"	5th
5.	Maxville, Public Hall.....	Glengarry.....	"	6th
6.	Moose Creek, Ghenon's Hall.....	Stormont.....	"	8th
7.	Avonmore, Beaver Hall.....	Stormont.....	"	9th
8.	South Finch, Gormley's Hall.....	Stormont.....	"	10th
9.	St. Albert, Town Hall.....	Russell.....	"	11th
10.	Embrun, Town Hall.....	Russell.....	"	12th
11.	Morewood, Forester's Hall.....	Dundas.....	"	13th
12.	South Mountain, Montgomery Hall.....	Dundas.....	"	15th
13.	Merivale, School House.....	Carleton.....	"	16th
14.	Galetta, White's Hall.....	Carleton.....	"	17th
15.	Stewartville, Town Hall.....	S. Renfrew.....	"	18th
16.	Northcote, Temperance Hall.....	S. Renfrew.....	"	19th
17.	Micksburg, Public Hall.....	N. Renfrew.....	"	20th
18.	Alice, No. 1 School House.....	N. Renfrew.....	"	22nd
19.	Pakenham, Agricultural Hall.....	N. Lanark.....	"	23rd
20.	Clayton, School House.....	N. Lanark (afternoon).....	"	24th
21.	Middleville, Town Hall.....	N. Lanark (evening).....	"	24th
22.	Lanark, Town Hall.....	N. Lanark.....	"	25th
23.	Watson's Corners.....	N. Lanark (afternoon).....	"	26th
24.	McDonald's Corners.....	N. Lanark (evening).....	"	26th
25.	Balderson, School House.....	S. Lanark.....	"	27th
26.	Drummond, Town Hall.....	S. Lanark.....	"	29th
27.	Franktown, School House.....	S. Lanark.....	"	30th

# Farm Implement News

## Introductory.

In introducing this new department to our readers it is hardly necessary for us to lay much stress upon the importance of the farm implement department on any farm. Every farmer who is at all abreast of the times must realize that this branch of his work has grown greatly in interest and importance during the past few years. The number of machines and implements used on the farm is getting larger every year. And, not only this, but they are getting more complicated and require more skill and care in order to operate them successfully. This latter, however, is not a fault but a necessity that must follow where machines and implements are required to do better and more varied work. But along with this comes the necessity of the farmer having a more intimate and definite knowledge of the machines he uses in order that he may

readers will largely avail themselves of this opportunity for acquiring valuable information.

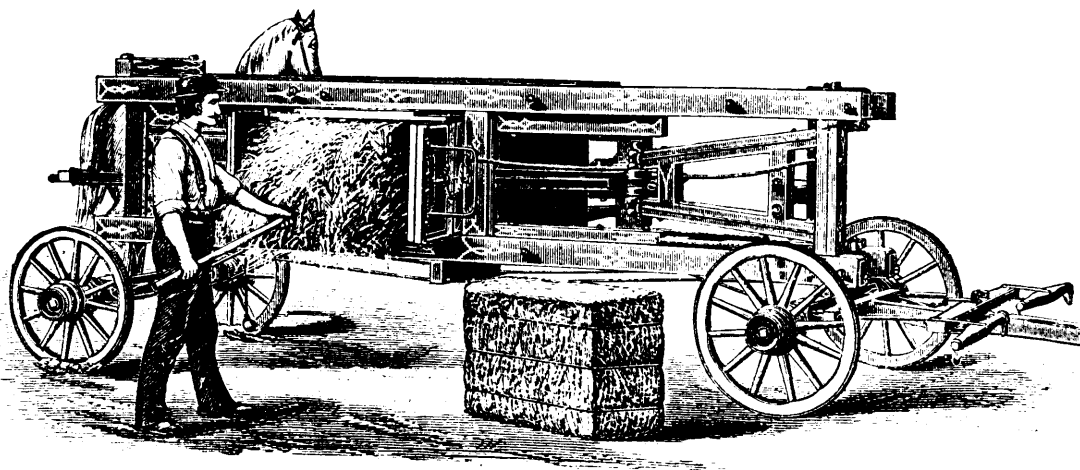
Until further notice this new department will appear in FARMING on the third issue of every month, and consequently the next date of insertion following this will be December 19th. Anyone desiring questions answered in that issue will kindly forward them at least two weeks before that date.

## Hay Presses.

The number of orders placed in Canada by the British Government for hay for the war forces in South Africa is creating a fresh demand, that is enhancing values for hay all over the country. As all hay shipped to the Transvaal must be got into as small a compass as possible, the question of hay presses becomes a very important one. Should the war con-

The machine in its work is double-acting, or, in other words, a charge of hay or straw is fed into it at each turn of the horse or team, which travels back and forth operating the press by a horse, lever or sweep power 14 feet in length, upon less than half a circle. It is continually discharging its bales as soon as they are made and tied through its open bale chamber; all of which is done without stopping. The machine is fed with a fork from the top with perfect ease, all loose ends of hay or straw being turned down by the folder (automatically), making the bales equally firm and smooth on top as on the sides or bottom, and by the aid of the open slot in the bottom of the feed chamber box, automatically discharging the seed, dirt and gravel while baling, freeing the bottom side of the bales from chaff and dirt, are points of importance in a baling press.

By the use of the anti-friction rollers under the plunger a full rebound of



be able to operate them in the best and most economical way.

Realizing this and being fully convinced that practical and definite information regarding all kinds of machines used on the farm would be helpful, we have been induced to make this new departure and to start what will be known as the farm implement branch of our paper. As we pointed out in our announcement last week, we desire the active co-operation of farmers and manufacturers alike in making it a success. With this co-operation this department can be made the medium for conveying definite information regarding all the new and improved farm machinery put up on the market from time to time, and at the same time can be made the medium through which the farmer can have any questions or intricate points about his implements answered and explained. We especially wish to give prominence to the question and answer phase of it, and we trust that our

continue for some time, as it is likely to do, more orders will follow those already placed, and our farmers will have a splendid market for their surplus hay during the winter. Even if there was no war it would pay farmers who grow any large quantities of hay for sale to have it pressed. By this process it can be compressed into very small space and put into shape for marketing conveniently. Unless this is done the farmer is debarred from every market but his local one, to which he must necessarily go with his loose hay.

A hay press is not a complicated affair that requires any special genius to operate it. The modern hay press is almost the perfection of simplicity in its operation. The following description of one of the most up-to-date presses made will give some idea of what one of these modern machines can accomplish in the way of compressing hay into the smallest possible compass:

plunger is always assured, whereby no time nor feeding space is lost in operating the machine. The machine, being 16 feet long and operated by a lever 14 feet long attached to the front end of the press, the working space necessary to operate can therefore be easily obtained.

Four men with one horse or a light team, under ordinary circumstances, can bale from 10 to 14 tons of hay per day, and the same amount can be loaded in a railway car; and can bale 8 to 10 tons of straw per day, depending on the size of press used—the 14 + 18, 16 + 18, 16 + 20, or the 17 + 22 size.

## The History of the Root Cutter

And the Advantages of the Present Up-to-date Machines.

BY DAVID TOLTON, GUELPH, ONT.

This being an agricultural country it is of the utmost importance to make use of every legitimate and available

means at our disposal to further the interests of all concerned, hence we presume to give a brief outline of the history and advancement of this branch of agriculture. The old adage, that "necessity is the mother of invention" is equally true in this department as in any other industry. We have arrived

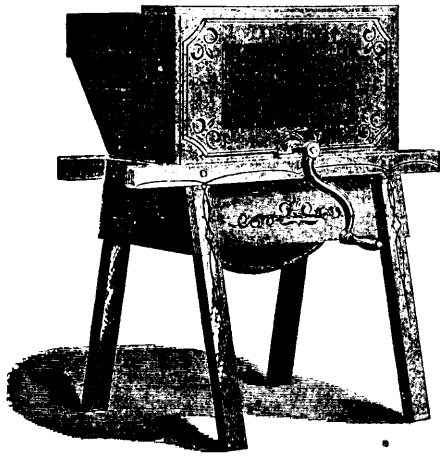


Fig. 1.

style of side wheel slicer, having two knives in wheel, these extending from the centre to the circumference of the wheel on opposite sides and set to cut a slice three eighths of an inch thick. This wheel was set in a wooden frame with a large wooden hopper on the face side of wheel which was operated by a crank as per the accompanying sketch. (Fig. 1.)

Some of these slicers were made at first with wooden wheels with an iron tire to keep it snugly together. Then came the iron wheel with the next improvement of having a number of small stripper knives set in the wheel so as to cut the slices into strips about three quarters of an inch wide. This was especially called for in the feeding of sheep. These machines although heavy to turn from their construction were a great improvement in the quality and especially the quantity of the work done which was very important where a farmer had considerable feeding to do. They served their term for several years when more modern machines came into use, such as the

when the hopper was full. However, these machines having served their time, we now come to the first introduction of the pulper which for hand use was of the side-wheel type with four knives placed in the wheel and later six knives in wheel to do the work. A fair representation of this is seen in Fig. 3.

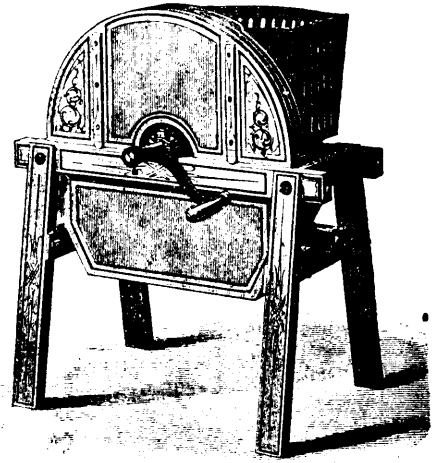


Fig. 3.

at a period of the world's history in which labor-saving machinery is the order of the day, and has done more to lessen the cost of production in all branches of industry than any other thing, in fact it has been the chief factor in the case, and, with that of systemizing, has placed its most vigilant and devoted patrons to the front in all the manufacturing world. The same thing will equally apply to the agriculturists who are in the front rank at this date.

In going back to the pioneer days of this country when the farmer was battling with the huge forests and agriculture was struggling for an existence, such an implement as we are writing about had not then been thought of, but as we advanced along, and when large clearings were taking the place of the forest, it became necessary to raise roots for the successful feeding of stock, and in many cases it became imperative to cut the turnips for young animals, and some old ones which had lost their teeth. This being the case the only available means at hand to do this work was an axe or a spade, which did the work very imperfectly, and, as "necessity is the parent of invention," the inventors were not long in producing something better as far as the quality of the work was concerned, in the form of a bench with four legs, of homespun manufacture, with a knife hinged at one end of the bench and a handle at the other which the operator took in the right hand and held the turnip in the other hand, slicing away until it was cut.

This process proving rather slow and tedious and also the danger of losing a finger or a portion of one occasionally was very objectionable, which called or gave rise to something more safe and speedy and also much more expensive, consisting of the first

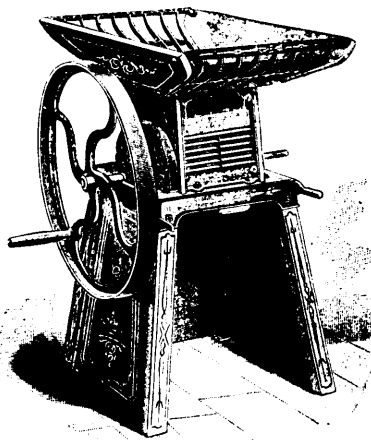


Fig. 2.

one shown in Fig. 2, known as the Double Action Gardner Root Cutter. This as you will observe is a combined double action machine of the cylinder type used by turning crank one way for slicing and the other way for stripping. This machine, from the construction of the cylinder, was rather expensive, although it performed its functions admirably and was an up-to-date machine at that time, well suited for the large stockmen; and while the stripping of the roots suited well for feeding sheep, something finer was required in the mixing of food for cattle. This called for the introduction of pulpers, but before dealing with them it is worthy of mention that other forms of combined or double action strippers and slicers were used of a cheaper style, viz., the side wheel and also one having the face of wheel placed horizontally with the hopper the full size of wheel. The roots were dumped in on the top of the wheel, stripping or slicing them according to which way it was turned, but the full weight of roots resting on the wheel made it hard for the operator to turn

This pulper being very simple and reasonable in price, placed it within the reach of every farmer, and was the prevailing one for years, with the exceptions of where a power one with greater capacity was required, in which case a cylinder pulper, with teeth in cylinder and heavy fly-wheel on shaft, was used.

Then came the hand cylinder pulper, having knives instead of teeth placed in cylinder or drum, for doing the work. A fair representation of this machine is seen in Fig. 4. This machine was first made with a view of both pulping and slicing, but, unlike the cylinder slicer, as such it did not prove a success. The pulping knives projecting beyond slicer knives kept

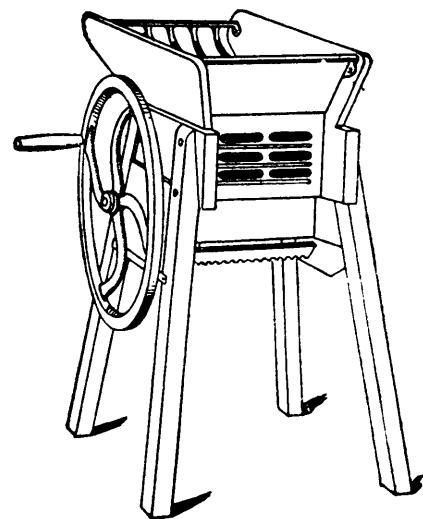


Fig. 4.

the roots continually on the jostle, and thus prevented it from doing the work in either capacity as fast as it should. This being a very serious fault, this style of pulper was, like the side-wheel pulper, practically confined to the single function of pulping, although

the knives are made to be reversed for slicing whenever required.

We also show a cut of the combined side wheel (Fig. 5). This machine, like the combined cylinder, and for the same reasons as before mentioned, comes far short of what is required in either capacity; hence, the necessity of having separate wheels for the satisfactory performance of either pulping or slicing. Hence, the demand for a double machine which would surpass any single machine in either capacity brought forth this latest production, as herein set forth, in which three very essential and important features are not lost sight of in its construction, viz., that of being a safe, rapid and easy root cutter. A sketch of this double machine is seen in Fig. 6

In this double machine many objections to its predecessors are successfully overcome. First of all the wheels are both internally shielded which not only is necessary for safety to the operator but relieves him wonderfully in not allowing the roots to come in contact with wheel until they get to the right place for cutting. This prevents them from acting as a brake on the



Fig. 5.

wheel and also from turning or jostling the turnips about (the latter being very disastrous to rapid cutting), makes a grand feature in this machine. The increased size of hopper which is placed between the wheels with large lower pockets prevents choking, and the partition grate can be turned either way in a moment at will so that at the one feeding either fine pulp or sliced product can be had without any delay or inconvenience to the operator, or where coarse pulp is preferred to sliced roots it can be so constructed, there being two separate wheels especially adapted for the work it has to do, with the knives placed in their respective wheels in a manner to obtain the very best results (three for slicing and six for pulping), and the united force of both wheels is always used in doing the work in either capacity, and being equipped with roller bearings accounts for it being a steady, easy running, and rapid root cutter.

With such a machine as this the operator is master of the situation, being in a position at all times and

with no inconvenience or loss of time to cater to the wants of his stock. The best of stockmen will concede the point that the more cleanly and tastily the provender is dished up to them the better they will eat and consequently thrive and grow, and beside this the mixing of pulped roots with other chaff or cut feed is not only a

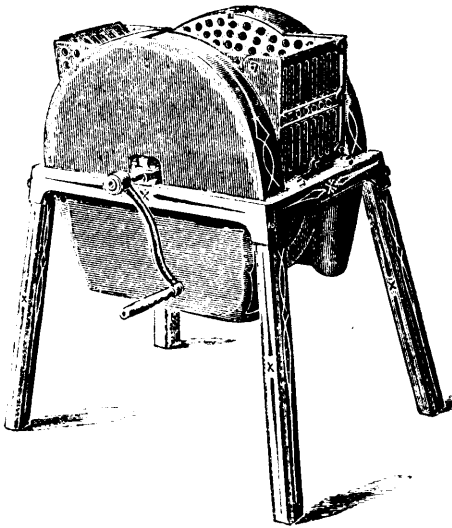


Fig. 6.

saving on the roots but makes coarser feed much more palatable for the beast. This pulp can also be used successfully in feeding fowl, young pigs, calves, etc., which when all told is one of the most profitable implements the farmer uses. The thorough mastication of the roots for the stock enables them to get the full benefit of their growing and fattening properties while passing through them.

### The Gasoline Engine as a Farm Machine.

By H. S. Pell, Toronto, Ont.

The modern farmer finds in machinery one of his most powerful allies, and almost every day sees the production of some new labor-saving implement or machine, intended especially for farm work. In the class of

understood and partially utilized over a century ago (1791), it is only within the last ten years that radical improvements have so far simplified the engine that it can be readily and successfully handled by the public at large.

To-day the gasoline engine is operated by household domestics, farm and market-garden hands, dairymen and many others who are not usually supposed to be competent to handle machinery, and it follows that the simplicity of management which has been attained has resulted in a widespread and increasing demand for this class of engine. To the farmer particularly this feature is invaluable, as simplicity and ease of management are usually associated with freedom from constant repairs or breakdowns.

We will suppose that our reader is looking for a power which will enable him to run a grain crusher or grinder, cut ensilage, pulp roots, pump water, operate a cream separator and churn, saw wood or perform other like offices. He will naturally look out for a machine which most nearly fills his conditions of service, and these conditions are about as follows: 1. Simplicity and ease of management. 2. Comparative lightness and portability. 3. Low first cost and running expenses. 4. Freedom from danger of fire or explosion. 5. Prompt service at all times. 6. Automatic working, so as to avoid the necessity of standing by to fire up, etc. 7. Convenient and easily handled fuel. 8. Small water supply and no danger of freezing up in cold weather.

This appears to be a very exacting set of requirements, but the builders of gasoline engines claim that they are all met by their machine satisfactorily.

As to the first requirement, the statements on the subject made in the first part of this article, are, we suppose, capable of proof, and if so should be satisfactory. That these machines are comparatively light and portable is undoubted. Most of the sizes can be readily moved about on a stone-boat, a two-horse power engine

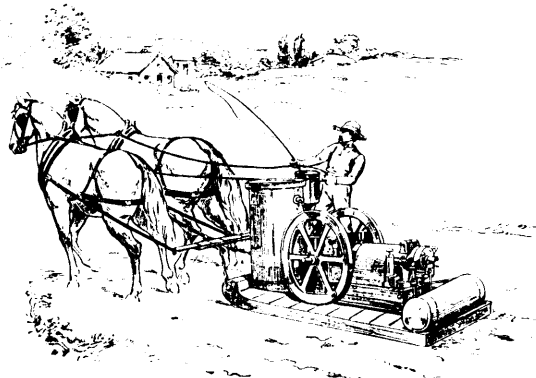


Fig. 1.

newer machines may be included the subject of our sketch, for, though the working principle of the gasoline engine (or as it is scientifically termed, the internal combustion motor) was

being arranged on a wooden base to be carried by four men. (See fig. 1.)

As regards first cost, two hundred and fifty dollars is about the price of a four or five horse engine complete,



an engine sufficiently powerful to do any farm work except threshing.

Such an engine costs, to run, all told, not more than two cents per horse power per hour, and this figure holds good whether one or five horse power is employed.

As regards safety it may be said that with about one thousand gasoline engines working in Canada for several years past, there have been no authenticated cases of fire or personal injury resulting from their use, and in the United States, where many thousands are in daily operation, their history is equally favorable, so that the maker's claim in this particular appears to be well founded.

The writer has seen a gasoline engine started in ten seconds without previous preparation, except filling oil cups and opening the valves, which sufficiently proves that these machines are promptly available when needed, and that they take care of themselves when once started is obvious from the description of their working given in fig. 2.

Gasoline as a fuel is extremely convenient, as a barrel of it put into the tank supplied with engine is sufficient to run a one-horse power engine ten hours a day for forty-five days without any handling whatever.

The gasoline engine gets along, so far as water supply is concerned, with a bucket full or so a day, as water is only used for cooling purposes, and only what is lost by evaporation needs replacing.

To avoid danger from frost it is only necessary to drain the water jacket of engine by cocks provided for the purpose, when the engine has to stand idle in a freezing temperature. When working the water used is kept hot by the action of the engine.

We will now describe the working of a gasoline engine and for that purpose illustrate a standard engine of about 12-horse power in working order. Smaller engines do not need a heavy founda-

tion but all are arranged in other details, as shown in fig. 3.

It will be observed that the engine looks a great deal like a steam engine, and as a matter of fact they have several points in common. Both have cylinders, valves, connecting rods, cranks and fly wheels, but there the resemblance ceases practically, for the two machines work on totally different principles. In the steam engine, power is produced by the generation of steam in a separate boiler, and this, of course, requires a constantly replenished fire.

In the gas engine no boiler, no furnace and no storage of pressure is used, as the engine gets its power from the expansion of air in the cylinder of the engine itself.

The heat necessary to produce this expansion of the air is obtained by burning gas within the cylinder of engine, this gas having been drawn into the cylinder and mixed with the air during the operation of the engine, and as this occurs at every alternate out-stroke of engine, only enough gas is drawn into the engine at each stroke to serve the purpose, and there is no occasion to store up pressure of any kind.

Another point of difference between the steam engine and the gasoline engine is that while the steam engine must use from one to one and a-half gallons of water per horse power each minute, the gasoline engine uses practically none. As above stated water is only used in connection with the gasoline engine for cooling purposes and evaporates slowly.

The gasoline engine is also automatic, taking in only sufficient fuel at each stroke for the work to be done and adjusting itself automatically to the amount of work, from nothing to

full power, and thus requires no attention, while the steam engine must have a constantly fired boiler and a carefully watched water supply.

To proceed with our description of the working of the machine, it will be noticed that a tank "H" is placed just at surface of ground outside the building. This tank contains about a barrel of gasoline, when full, and forms the fuel supply of the engine. Leading from the gasoline tank is the suction pipe "O" connected to the suction valve of pump "E," and when the engine is in operation the pump draws the gasoline up suction pipe and forces it along pipe "N" to the small reservoir "P" at back of engine. Should

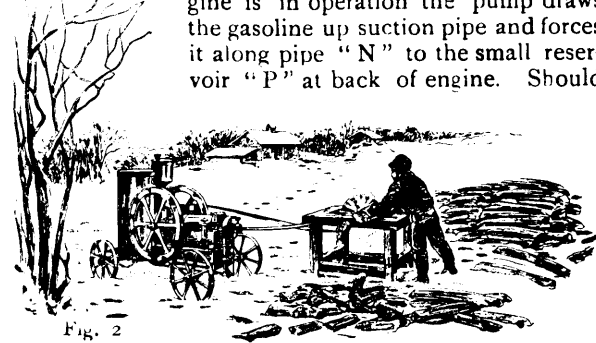


Fig. 2

the pump throw too much gasoline into the reservoir, it overflows through pipe "H" back to the gasoline tank. This arrangement forms the fuel supply system of the engine and needs no further comment. Immediately back of reservoir "P" is a small valve "K" which controls the amount of gasoline allowed to enter the cylinder by simply turning it to the right or left.

When the engine is to be started the pump "E" is worked by hand a few times to fill the reservoir "P," after which the pump automatically maintains the proper supply. Now on turning the fly wheel of engine (which is done by hand in all the smaller sizes), it naturally follows that the piston on its outward stroke acts as a pump and draws air through the air-supply pipe "I." This air rushes up into the cylinder of engine and on its way catches up a few drops of gasoline

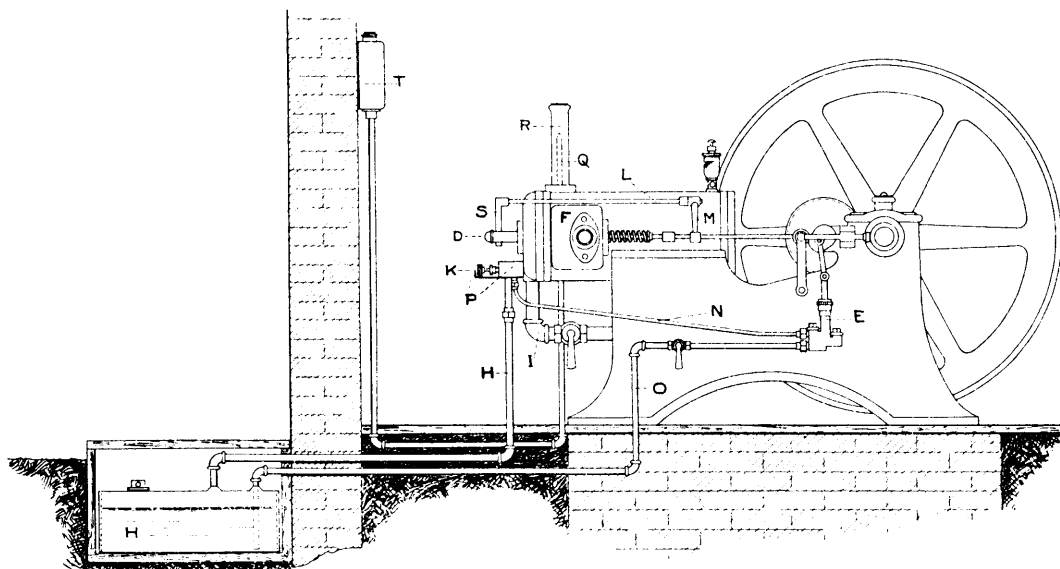


Fig. 3.



from an opening in inner end of reservoir "K." These few drops of gasoline are immediately vaporized or made into gas by the quickly moving air current, and both air and gas are brought into the cylinder and well mixed together. This mixed gas and air forms a combustible mixture and will burn if a light is applied to it. The gas and air have entered the cylinder through a check valve "D," and immediately the piston begins to come back on the return stroke, this valve closes and the mixture of gas and air being imprisoned is compressed by the momentum of the fly wheel into the space between piston and cylinder head.

In the compressed condition this mixture is lighted by an electric spark or hot tube and as before stated the air is expanded and produces a pressure sufficient to force the piston out strongly, and causes the fly wheel to revolve and do work. As soon as the piston has reached its extreme outward stroke, the exhaust valve "F" is opened and the burnt charge in cylinder is allowed to escape into the open air.

From the above it will be noticed that two revolutions of the engine are described, the first outward stroke which draws in the air and gas. The first inward stroke which compresses the charge, the second outward stroke produced by the expansion of the air as above described, and the inward stroke which drives out the burnt products through the exhaust. These four strokes, or two revolutions form the working cycle, or round of operations, by which the engine operates.

These may again be repeated for clearness' sake :

1st. The charging stroke. 2nd. The compression stroke. 3rd. The power stroke. 4th. The exhaust stroke.

These operations repeated continuously produce an even, steady motion, which is regulated by the automatic governor, so perfectly that a dynamo may be driven directly from the engine, giving perfectly steady electric lighting. This is the supreme test of the steady running of any motor. Incidentally this opens up the subject of the ease with which country residences, farm houses may be illuminated by electricity, but the limits of this article will not admit of its discussion.

In conclusion it may be said that the gasoline engine would appear to be an excellent motor for the farmer, as it possesses many desirable qualities, which it is hoped may be clearly understood from the explanations given.

### Feed Cutters and Blowers.

By C. E. Folkes, Toronto

For probably two centuries the value of cutting hay and straw for feeding purposes has been known by the farmers in England and part of Europe, but within the last century

rapid strides have been made in this direction. Dry fodder, cut, possesses many advantages over the uncut, principally the following :

1. Cut feed requires only about half the time for mastication in comparison with the uncut, consequently the animals have more time for rest, chewing their cud, etc.

2. As fodder is principally required by animals for its bulk or filling qualities as the best fat or milk producing foods consist of grain or its products, by mixing the two, which can readily be done when the fodder is cut, a much coarser or inferior fodder can be utilized, as the animals will eat it with relish when mixed with grain. Pulped turnips added to the mixture add greatly to its feeding value.

3. The operation of cutting removes a great portion of dust and other foul matters from the feed, which renders it more wholesome.

4. Saving in space for storage and time in feeding. As cut fodder oc-

will absorb three or four times the moisture long straw will, which is the principal object in using bedding, consequently a less quantity will be required for that purpose.

There is another class of cut feed which is far superior to dry feed, and is rapidly coming into general use among farmers within the last twenty-five years. That is ensilage, which usually consists of corn cut and put into the silo in its green condition, when it undergoes a process of fermentation. The air being excluded, the fermentation after reaching a certain stage remains stationary, and the feed will keep for a considerable length of time. Silos should be built high, as the weight of the ensilage assists greatly in packing the mass together and excluding the air.

A great many devices for cutting feed have been made use of since the system first came into use. Probably it was first done by placing the feed into a large box, and cutting it by re-



copies only about one-third the space required for long feed, the saving in space for storage, and time in feeding is apparent.

5. Saving in feed. In feeding uncut feed, the animals eat only the finer portions, leaving the balance which is thrown out as worthless before feeding again. In cut feed this is saved, as the feed being all in a fine condition all is eaten.

It will be easily understood from the above, and many other reasons not mentioned, why the cutting of fodder has become a necessity with farmers. In a great many instances straw is cut for bedding, which has many advantages over the uncut, principally the following: Cut straw will remain where placed, and as the animals cannot move readily it is always under them when lying down. Cut straw

peated blows from a sharp spade. Later we have a rude machine consisting of a large knife or scythe, fastened on a pivot at one end and a handle at the other, and adapted to slide in front of a trough, into which the material to be cut was placed and pushed forward after each cut by hand, the length of the cut being guess-work. Various devices for gauging the length of cut and advancing the fodder were afterwards added and we have yet in use machines of this type.

The first step in improvement was the machine with the knife attached to a gate or frame which slid up and down on slides attached to the frame of the machine and actuated by a small crank and connecting rod. Rollers were placed in the feed trough of this machine to feed the material to the knife and were connected to the

crank shaft by levers and ratchets so that the rollers worked intermittently to advance the feed when the knife was at its highest point. These machines were small and were mostly driven by hand, a crank being provided for that purpose.

In 1862 we find a machine was patented in England of the rotary pattern, that is the knife or knives were attached to a wheel and cut the fodder as they were passing the feed trough. It also had rollers to feed the fodder to the knives, the top one being adapted to rise and fall so that large or small quantities could be fed into the machine, which greatly increased its capacity. These two principles are still used in almost all the machines in use at the present time.

Feed cutters at that time were principally driven by hand, but with the advent of horse-power, steam, etc., power was substituted and the capacity of the machines greatly increased. The cut feed was taken away from the machines and stored by hand, which as the amount to be cut became greater was laborious work.

We later find that carriers were built to obviate this difficulty. These were what is sometimes called Jacob's Ladder carriers and consist of a trough placed on an incline and long enough to elevate to the height required. A series of slats or scrapers were attached to belts of leather or other material, which were endless; wheels were placed at each end of the trough for the belts, thus the slats or scrapers slid the cut feed up the trough and returned underneath, the feed dropping off the top end into the place to be stored.

To enable carriers to elevate wet and heavy material, such as ensilage, chains running on toothed wheels were substituted for the leather belts, which is the common carrier in use to-day. While possessing some advantages the carrier has many disadvantages, a few of which we will enumerate:

1. *Cost.*—As carriers for high silos are of great length, as the machines had to be set about the same distance from the silo as its height, to enable the carrier to elevate, it will be easily seen that for high silos the elevator was more costly than the cutter.

2. *Loss and waste.*—As ensilage is principally cut outside, in windy weather a great portion of the cut ensilage was blown off the carriers and wasted, this being an entire loss.

3. *Time required to put up and take down.*—This in long carriers is quite an item, each operation often requiring half a day or more.

To obviate these difficulties ensilage cutters are now made with blower attachments by which the use of the carrier is done away with.

The cut ensilage is driven up a pipe and into the silo by pneumatic force. Everything fed into the machine is delivered at once into the silo without waste, regardless of windy weather.

The time consumed in putting up the pipe only amounts to about ten minutes, which is a mere bagatelle. The pipes will wear as long as the machine and there is no lost time in choking or breakdowns. We show here one of these machines known as the Climax, in operation at the Ontario Agricultural College, Guelph, filling their two hundred and fifty-ton silo. The machine is elevating thirty-four feet high. This picture was taken of the machine in operation at the farm on September 20th, 1899. This machine has been in use for a year at the college at the present time, and has done all their

cutting. The college people say it is just what they have been looking for, as it fills a long felt want. This is the fourth year of the manufacture of these cutters, and the public can rest assured that they are not buying an experiment, and that the machine will do their cutting much faster and easier than they ever had it done before. The Climax cutters are fitted with a feeder in the feed-trough bottom, which practically renders them "self-feeders," as all the operator has to do is even the feed in the box and it runs through the machine without any difficulty.



There is one point that is forcing itself upon the attention of municipal councils more than another, it is that of **GOOD ROADS**. The days of the old mud thoroughfare, without even the expense of grading, have long since past, and municipalities have grasped the fact that progress must necessarily be accompanied by road construction and maintenance. With the passage of ill-kept roads, have gone the old-time methods of improving them, and now modern machinery steps in and takes the place of the more expensive hand labor.

The advent of the Sawyer & Massey Co., Limited, into the manufacture of machinery for **GOOD ROADS** was received with satisfaction because of that Company's enormous success in other lines of business, and the large trade that they have already gained shows them to be at the front in their new venture. The municipal rock-crushing plant made by this Company has many points of superior construction over other makes, a strong feature being its **solid cast iron frame**, this particular preventing any trouble from built-up parts becoming loose during operation. This Crusher is attracting special attention throughout the Dominion, supplemented by their reversible road roller and reversible road machine.

During less than three years in this business these machines have been placed in over 300 municipalities in the provinces of Ontario and Quebec, and in 1899, **twenty** of their rock crushers were sold in Ontario alone to **one of any other make**.

St. Catharines, Niagara Falls, Chatham, Bowmanville, Parry Sound, Renfrew, Nottawasaga, Ameliasburgh and Smith townships, and numerous municipal contractors are using this crusher with marked success and give testimonials to its merit. These machines are built from start to finish at Sawyer & Massey works at Hamilton, Ontario, and, while a Canadian product entirely, are the equal in all respects, and the superior in some, of any similar machines in the world.

# The Farm Home

## Collectors and Students.\*

By Alice Hollingworth, Beatrice, Ont.

(Continued from last issue.)

I have given a brief history of two common objects to illustrate my statement that we live in a world of wonders, and it is the same with everything we touch. It always seems such a pity to me to see how little pleasure and satisfaction the majority of people take out of Nature's gifts. It is not merely enjoying the beauty and admiring the perfection of her methods; there is the material gain in knowing how to make use of the natural elements that surround us. It is the knowledge to do this that we call science, and all the comforts, all the advantages of civilized life are due to science. It has given us our artificial light and heat, our means of rapid communication and rapid travelling to distant places, it has given us the delights of art and music and our wealth of literature, its benefits are beyond numbering, it has raised us from savagery to a state of civilization. This is what comes of people collecting to study instead of collecting on the jackdaw plan. I think we may safely say that to collect is human, and therefore, it would be well for those who have the training of children to teach them to be students as well as collectors, to help them by all possible means to step into that world of knowledge and beauty that the unobservant pass by and never see or dream of, and most surely they will make better men and women and future generations will be benefited by the care that is bestowed upon the children to-day. They may never progress so far as to startle the world with new discoveries, but if they only travel along the road that is already made and learn no more than others can teach them, it will be immeasurably better than to remain forever stuck in the mud of ignorance. Why are not school lessons made attractive instead of repugnant to children? Many like to go for the sake of the companionship of their playmates, but few are drawn there by the love of their books. I remember when I went to school the prevailing sentiment among the children was to resent compulsory education as a bitter injustice in which parents and teachers figured as conspirators. Yet it would not be so hard to make it otherwise. I know one teacher who used large sheets of bark as trays, which he covered with sand, and in this he marked out the divisions of land and water and marked where great battles have taken place with bits of paper, thus

\*A synopsis of an address prepared for Farmer's Institute meetings in Ontario, condensed for publication by the Superintendent.

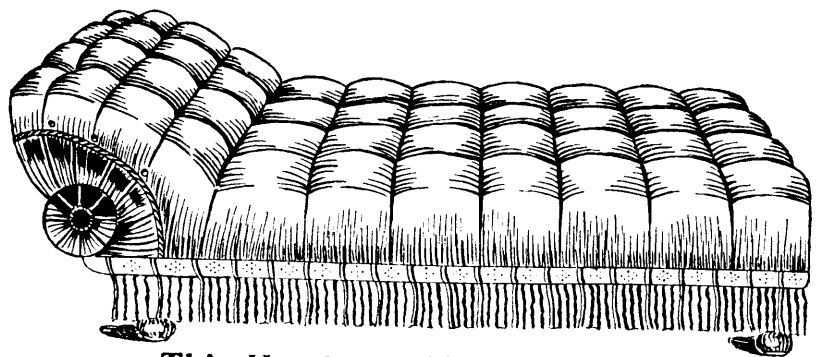
blending geography and history and illustrating it in a simple way that pleased and interested the children and made them always eager for the next lesson. Now, what would be easier in a country school than to teach botany and geology on the same plan? I know of one school where the study of these two branches of science is compulsory, and prizes are awarded for the best collections of botanical and geological specimens. The result is highly satisfactory. One of the pupils who graduated last year and took the prize for her geological collection writes to me most enthusiastic letters concerning her studies at school, her collections, her long rambles and her interest in tracing out the geological formations of the country. She is a thorough child of nature and free from the sickly sentimentality and the desire to ape the manners and conditions of older people, that we witness so often in young people whose mental training has been neglected and who have never been taught to appreciate the boundless wealth of beauty and the field of knowledge that leads us into a veritable fairyland of wonders which Nature has spread before us.

## What Women May do in Agriculture.

The following is a summary of the address delivered by Prof. Robertson at the meeting of the National Council of Women upon the above subject.

At the outset he pointed out that half the world's population earned their living from agriculture, and everything that would affect beneficially the daily labor of half the world would exert a wonderful influence for the upbuilding of humanity. Canada's yearly agricultural wealth was \$600,000,000 as against \$37,000,000 produced from mines. It was especially women's province to develop intellect in their husbands or fathers or brothers. An intelligent people could make a good living off poor land, while the people who farmed the richest land of the world, the delta of the Nile, had been poor for thirty centuries, because they lack intelligence and their womankind were a dead issue when it came to any assisting of their male relations. Women should endeavor to develop skill in the men; cultivate the personal market for everything raised on the farm, which was worth 30 per cent. more than any other. Women could impart knowledge to men, not the letter of knowledge, but that better part, the spirit of it. The value of praise of any little advance in farming methods, especially from women, had had more to do often with the progress of an entire farming community than anything else. Already the co-operation of women with men in the essence of farming, the acquiring and using of knowledge advantageously in the selection of seeds, the preparation of dairy products and even the care of cattle, had had a very marked effect on the agriculture of Canada. Encouragement from the fair sex was

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one of the greatest incentives mankind could have in this life, and this was specially the case in the farming world. What is wanted is fewer informational subjects and more educational processes. The speaker then spoke at length on the advantages of domestic science to girls, and of manual training to boys. These taught boys and girls observation, persistency of effort, and the love of work for work's sake. Prof. Robertson was confident that boys would not be rushing from the country for soft situations in the city if they loved the work of the farm for work's sake and then get the largest returns out of it. The speaker was convinced that there were fewer people abundantly happy in Canada, especially among the boys and girls on the farm, than in any country of Europe. They appeared robbed of their share of happiness largely because they did not understand the dignity nor the immense possibilities of their labor. The speaker stated that one wealthy man of his acquaintance had guaranteed the money necessary to establish manual training in every province in Canada in the hope that it would eventually be incorporated into the Public School system of the country. "Out of the labors of agriculture," he concluded, "came flowers and ideals, and these make a people strong."

**The Home of the Boer Farmer.**

The Boer has three fundamental principles for which he will fight with all the stubbornness of a Dutchman, concentrated by a frontier life of several hundred years. He wants a great farm of from 10,000 to 40,000 acres; he is determined never to pay taxes at any time for any purpose, and he will have slaves.

If his ambition as to a great piece of land is satisfied, he will cultivate about ten acres of it, and use the rest for grazing purposes. His farmhouse will be built of stone and will usually contain one room, though now and then a particularly wealthy farmer will indulge in two rooms. In this limited domicile the simple Boer farmer will raise his family of ten or twelve children, the two rooms being considered amply sufficient for eating, sleeping, sitting, cooking and the other indoor functions of family and individual life. The walls of this dwelling will be plastered and the floor paved with cattle manure, which, after it dries out, answers very well for the purpose. The barn will be of stone, and with a capacity for three or four horses. The wagon and the two or three plows required for the simple tillage the Boer undertakes will be left out of doors, so that no sheds are required. The house doors are always open, and the pigs and chickens run at will through the screenless entrances.

When the women of the family are not busy looking after the numerous

children and their ordinary household duties, they are likely to be spinning, the Boer not having risen to the dignity of store clothes.

**Soups.**

**MILK SOUP.**—Ingredients: 4 potatoes, 2 leeks or onions, 2 oz. of butter, pepper, ¼ oz. of salt, 1 pint of milk, 3 tablespoonfuls of tapioca.

Put two quarts of water into a saucepan, then take four potatoes, peel and cut in quarters, take also two leeks, wash well in cold water and cut them up; when the water boils put in potatoes and leeks, then add the butter, salt and pepper to taste. Allow it to boil to a mash, then strain the soup through a cullender, working the vegetables through also; return the pulp and the soup to the stewpan, add one pint of milk to it and boil; when boiling, sprinkle in by degrees tapioca, stirring all the time; then let it boil for fifteen minutes gently.

**SCOTCH MUTTON BROTH.**—Ingredients: 2 qts. of water, neck of mutton, 4 or 5 carrots, 4 or 5 turnips, 3 onions, 4 large spoonfuls of Scotch barley, salt to taste, some chopped parsley.

Soak a neck of mutton in water for an hour: cut off the scrag, and put it into a stew-pot with two quarts of water. As soon as it boils skim it well

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and then simmer it an hour and a half; then take the best end of the mutton, cut it into pieces (two bones in each), take some of the fat off, and put as many as many as you think proper; skim the moment the fresh meat boils up, and every quarter of an hour afterwards. Have ready four or five carrots, the same number of turnips, and three onions, all cut, but not small, and put them in soon enough to get quite tender; add four large spoonfuls of Scotch barley, first wetted with cold water. The meat should stew three hours. Salt to taste, and serve altogether. Twenty minutes before serving put in some chopped parsley. It is an excellent winter dish.

**CHICKEN SOUP (Brown).**—Ingredients: 1 or 2 fowls, a bunch of herbs, 1 carrot, 1 onion, 2 oz. of lean ham, 2 oz. of butter, pepper and salt, 2 qts. of good stock, and a little roux, a few allspice, a little grated nutmeg and mace.

Cut up the carrot and onion, and fry in two ounces of good butter a nice light brown, add the ham and fowl cut up small, taking care to break up the bones with a chopper, add the stock and boil until the fowl is cooked to rags; thicken with a little roux, add the allspice and mace and a little grated nutmeg, color with a little soy, add seasoning to taste. Serve with the soup some plain boiled rice.—*Ideal Cook Book*

### Editor's Appeal.

A mountain editor thus happily and alphabetically tells what will purchase the privilege of reading his bright paper:

For subscriptions bring to us  
Apples and asparagus,  
Baled hay, butter, bottled beer,  
Cabbage, chicks, green corn in ear,  
Ducks and doughnuts (former dressed),  
Eggs plucked freshly from the nest,  
Fish to stimulate our brain,  
Geese of age not on the wane,  
Hams and honey (golden flakes),  
Injun meal for grid-<sup>le</sup> cakes,  
Jellies, jars of juicy jam,  
Kraut to boil with bone of ham,  
L<sup>in</sup>iment—with gout we've vexed—  
(To be continued in our next).

### Comin' Thro' the Corn.

She passed between the rows of corn,  
Their tasseled heads above her;  
They slyly shook and whispered low,  
"Now who could help but love her!"

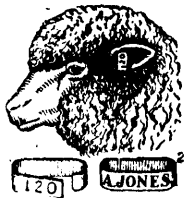
She smiled up at the stately stalks,  
And they, with soft caresses,  
Bent down to twine their slender leaves  
Around her sunlit tresses.

She carolled forth a merry tune;  
The leaves for very pleasure  
Kept time, as did her dancing feet,  
Unto the dancing measure.

While rustling gently in the breeze,  
The tasseled heads above her  
Shook slyly as they whispered low,  
"Ah, none could help but love her!"  
—Selected.

### GALLOWAYS.

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### AMERICAN

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A. J. TEMPLE, Secretary.

CAMERON, Ill., U.S.A.

THE NEXT ANNUAL MEETING will be held in the Parlors of "The Tecumseh" Hotel, London, Ont., on **Tuesday, Dec. 12th, 1899, at 2 o'clock, p.m.**

(The Secretary's headquarters will be at The Tecumseh during the Fat Stock Show).

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**GAZETTE—Continued.**

**LIST OF RESERVE SPEAKERS—Continued**  
Wheatley, T. C., Blackwell—December.

**COLLEGE STAFF.**

The members of the staff of the Ontario Agricultural College can attend meetings as follows:

Dean, Prof.	} In June.
Reed, Prof.	
Reynolds, Prof.	
Shuttleworth, Dr.	

**LADY DELEGATES.**

Hollingworth, Miss A., Beatrice—December and January.  
Kinny, Mrs. A., Grand View—December, and after January 22nd.  
Maddock, Miss B., Guelph—Any time after December 9th.  
Rogers, Mrs. M. J., Kinsale—December, January, and February.  
Rose, Miss L., O.A.C., Guelph—Occasionally in January and February, and when needed in any other month.  
Smith, Mrs. J. L., Whitby—December, January, and February.

**A Good Programme.**

Of all the institutes which hold their meetings in December, West Huron has been the first to send in a programme of their meetings, which is a model that may well be followed by other institutes in the province. The talent is entirely local, with the exception of Miss Rose, whose services have been engaged for the meetings by the officers themselves. This institute evidently does not desire to be spoon-fed. We will publish in our next issue their programme in full, and have but one criticism to make, namely, that the secretary should have inserted the time of day each address was to be delivered.

**FARM HELP EXCHANGE**

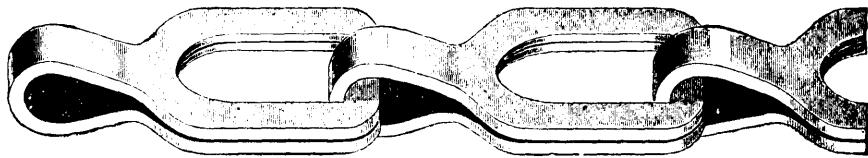
The Farm Help Exchange has been started with the object of bringing together employers of farm and domestic labor and the employees. Any person wishing to obtain a position on a farm or dairy, or any person wishing to employ help for farm or dairy, is requested to forward his or her name and full particulars to F. W. Hodson, Secretary Live Stock Association. In the case of persons wishing to employ help, the following should be given: particulars as to the kind of work to be done, probable length of engagement, wages, etc. In the case of persons wishing employment, the following should be given: experience and references, age, particular department of farm work in which a position is desired, wages expected, and where last employed.

These names when received together with particulars will be published FREE in the two following issues of the "Agricultural Gazette" and will afterwards be kept on file. Upon a request being received the particulars only will be published, the names being kept on file.

Every effort will be made to give all possible assistance to the end that suitable workers, male or female, may be obtained. Every unemployed person wishing to engage in farm or dairy work is invited to take advantage of this opportunity.

Owing to the space occupied this week by the list of Farmers' Institute Meetings, "Help Wanted" and "Situations Wanted" are crowded out of this issue. They will be published next week.

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This is because the form of the link, the exact size and shape of which are shown above, is such that the wear is distributed evenly over its entire end. The tearing surface is thus very large, and the chain will wear for years without becoming worn appreciably.

With other styles of chain the tearing surface is only a very small portion of the extreme end of the link. Grooves are soon formed, and in a comparatively short time the links are worn—or, properly speaking, cut—through.

These facts are well shown on a cow tie recently brought us for repairs. It was an ordinary No. 00 three-chain tie. One chain was wire, the other two American. One of the wire links was worn entirely through. The others were nearly as bad—a strong pull would have broken almost any of them. With the American chains, on the other hand, the wear was very slight, and hardly noticeable—three times this amount would not have weakened the chains seriously.

American Cow Ties are made in all the standard patterns and sizes. If your hardware dealer does not handle them, kindly let us know, and we will see that you are supplied.

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SEPARATORS**

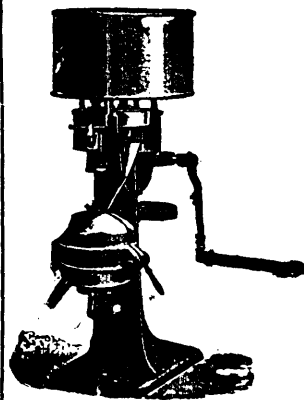
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# Farming.

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Managing Director, . . . . . D. T. McAINSH  
Editor, . . . . . J. W. WHEATON

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**Receipts** are only sent upon request. The date opposite the name on the address label indicates the time up to which the subscription is paid, and the change of date is sufficient acknowledgment of payment. When this change is not made promptly notify us.

**Discontinuances.**—Following the general desire of our readers, no subscriber's copy of **FARMING** is discontinued until notice to that effect is given. All arrears must be paid.

**How to Remit.**—Remittances should be sent by cheque, draft, express order, postal note, or money order, payable to order of **FARMING**. Cash should be sent in registered letter.

**Advertising Rates** on application.

**Letters** should be addressed:

FARMING,  
CONFEDERATION LIFE BUILDING,  
TORONTO.

## QUESTIONS AND ANSWERS

### SICK LAMBS.

A farmer's son at Carleton Place, Ont., writes:

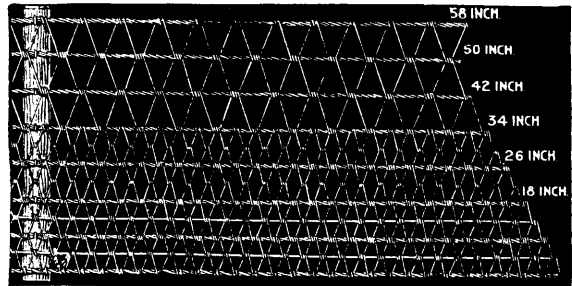
"We lost a number of our lambs in the summer and one about a week ago, I think all from the same cause. They would walk round in a circle, with their heads thrown back. Before long they would be unable to stand, but would linger on for a day or two and then die. I would be glad if you could tell me the cause, and also a remedy."

Though it would be impossible to say definitely, from the description given, what the trouble really is, yet it is one of the indications of the disease known as "sturdy," or "gid." This disease is produced by a small animal parasite in the brain. Numerous deaths among lambs are not unfrequently caused or produced by tapeworm in the intestines. It would be merely guesswork to diagnose the disease from the few symptoms given, and without recognizing the disease it would be worthless to prescribe treatment. We would advise calling in the nearest competent veterinary surgeon, to make a *post mortem* of some of the dead lambs. The symptoms, so far as given, seem to indicate a parasite on the brain, but without more information it is impossible to say definitely.

### Grain for Paris Exposition.

The Dominion and Ontario Departments of Agriculture are desirous of securing a good representation of grain, threshed and in the straw, for the Paris Exposition. The Provincial Department is now in communication with a number of representative farmers and

An  
"Every  
Purpose"  
Fence



for Farm, Field, Orchard, Ranch—for Horses, Cattle, Hogs, Pigs, Sheep, Dogs, Poultry and Rabbits. A fence absolutely efficient, and economical and practically everlasting.

## ELLWOOD FENCES

made of best spring steel wires, heavily galvanized. Sold by our agents everywhere. If no agent in your town write to

**AMERICAN STEEL & WIRE CO., Chicago or New York.**

This Cut will illustrate a truism regarding our now famous



# Blower Propellor Elevator Feed Cutter

NOW A WORLD-BEATER

At first despised, now everywhere a recognized **SUCCESS**. But see those hands! We are the originators and patentees and have invested our thousand in bringing this machine to the front. **WE SAY, HANDS OFF!** They had no faith in Blower Machines. Now our success has turned the tables and chain carrier machines are **BACK NUMBERS**. We can get them by the dozens in exchange for our machines at almost any price. Agents write us: "We can sell any number of your machines if we can take other machines in exchange. Talk about

## Slow Speed and Big Results and Power Required

Our machines are suitable for any kind of farm power. Capacity 4 to 20 tons per hour. It is not only a Silo filler but the commonsense barn machine. Feed delivered 5 or 50 feet from machine as desired.

### SEND FOR CIRCULAR AND TESTIMONIALS

We are also sole manufacturers of the famous **RIPPER FEED CUTTERS**. Tears cornstocks into a pulp. We certainly **lead** in all that is latest and best in Feed Cutters.

▲ ▲ ▲ ▲

Machines Patented in Canada and United States  
also Tread Powers and Corn Shellers

▼ ▼ ▼ ▼

## Thom's Implement Works

WATFORD, CANADA

Established 1875



grain growers of Ontario with this object in view. The exhibits of grain will shortly be sent from Ottawa, along with the fruit and other agricultural exhibits, and any farmers having grain suitable to exhibit are asked to communicate at once with the agricultural departments at Ottawa or Toronto.

**Prizes for Dairy Essays.**

A meeting of the executive of the Cheese and Butter Association of western Ontario was held at Stratford on Nov. 15th. There were present Harold Eagle, president; Aaron Menger, Ayton; J. A. James, Nilestown, and R. M. Ballantyne, Stratford. Further details were completed in connection with the next annual convention to be held at Stratford on January 16th, 17th and 18th next. Among the speakers from the United States will be Prof. E. H. Farrington, of Wisconsin, a leading investigator on all matters pertaining to practical dairying. The committee decided to offer \$50 as prizes for essays on butter-making and \$50 for prizes for essays on cheese making, to be divided in both cases into prizes of \$25, \$15 and \$10 each. Competition will be open to cheese and butter-makers who have worked during the year 1899 as makers or assistants in factories or creameries situated in western Ontario, professors and instructors being debarred. The awards will be made at the convention and the first-prize essays are to be there read and discussed. The granting of \$100 towards the cheese and butter exhibition at Ingersoll was deferred for further consideration.

**Butter Instructor at Guelph.**

Last week we announced the appointment of Mr. Archibald Smith as superintendent of the Strathroy Dairy School. His resignation from the staff of the Guelph Dairy School made it necessary to appoint a new butter instructor. The position has been filled by the appointment of Mr. Jas. Stonehouse, Port Perry. Mr. Stonehouse was formerly instructor in the Home Dairy Department, which position he resigned to accept the management of the St. Mary's Creamery. He also had charge of the arrangements for the butter-making competitions at the Industrial Fair, Toronto, last September, the success of which was in no small measure due to Mr. Stonehouse's care and foresight. He is favorably known throughout Ontario as a first-class buttermaker and creamery manager. The Guelph School is to be congratulated upon securing the services of so able a man for the position of instructor in buttermaking at the coming session.

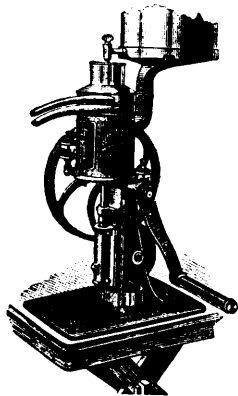
**San Jose Scale Again.**

At a recent meeting of prominent fruit-growers of the Niagara district held recently in Grimsby the cessation of the enforcement of the San Jose

# "ALPHA" DE LAVAL CREAM SEPARATORS

One Hundred and Sixty Thousand in Use.

**First, Best, Cheapest.**



- Excel all others for close skimming and ease of running
- Saves a great deal of labor.
- Saves one-half the time in butter-making.
- Saves the cost of utensils.
- Saves the cost and handling of ice.
- Produces more and better cream.
- Separator cream commands a better price and is more valuable for ice-cream; gives from 10 to 25% greater yield of butter, and is more churnable.
- It doubles the value of skimmed milk for feeding stock, it being warm and fresh from the cow.

A Farmer cannot afford to be without a Cream Separator.

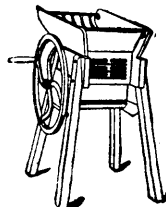
SEND FOR CATALOGUE.

**The Canadian Dairy Supply Co.**

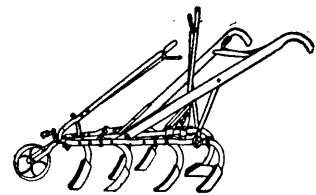
327 COMMISSIONERS STREET  
MONTREAL, QUE.



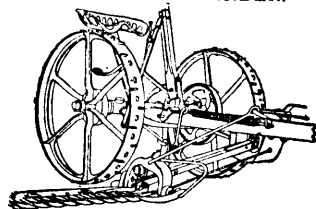
THE MAXWELL BINDER.



ROOT CUTTER.



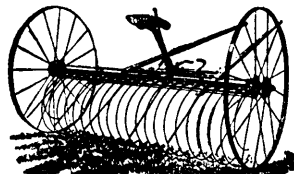
SCUFFLER.



THE MAXWELL MOWER.



TEDDER.



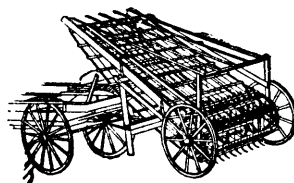
STEEL HORSE RAKE.

**David Maxwell & Sons**

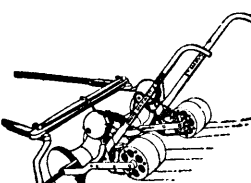
ST. MARYS, ONTARIO, CANADA

MANUFACTURERS OF BINDERS, MOWERS,  
REAPERS, HAY RAKES, HAY TEDDERS,  
HAY LOADERS, SCUFFLERS,  
DISK HARROWS, TURNIP SOWERS, ROOT  
CUTTERS, WHEELBARROWS, ETC.

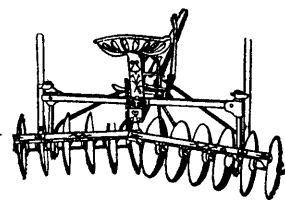
RESPONSIBLE AGENTS WANTED IN ALL  
UNOCCUPIED TERRITORY.



LOADER.



TURNIP SOWER.



DISK HARROW.

Scale Act was discussed and the following resolution was unanimously adopted :

"The fruit-growers of Ontario desire to express their great satisfaction with the efforts made by the Ontario Department of Agriculture to destroy that most serious enemy of the fruit grower, the San Jose scale. They regret exceedingly that any suspension of the working of the Act should have taken place, thus allowing the pest to spread with great rapidity. In view of the uncertain results of the work of the experiment stations in the United States in the treatment of orchard trees with whale oil soap for the destruction of the scale we recommend that there be no relaxation of the inspection of orchards or of the destruction of infested trees, but that the work proceed with all vigor while it is possible to prevent the spread of the pest ; that in case of valuable orchard trees only exposed to infection, the owner have the choice of having his trees destroyed with compensation or of having them treated for a certain length of time for the destruction of the insect, and in case of failure of having them destroyed without compensation ; that the owner of an infested orchard who wishes to have exposed trees treated instead of destroyed be required to thoroughly prune the orchard trees exposed in such a manner as may be required by the inspector as a preparation for the spraying ; that all nursery stock be thoroughly fumigated with cyanide of potassium gas, under the eye of an inspector, before it is allowed to be sent out."

The whole question will come up for discussion at the annual meeting of the Ontario Fruit Growers' Association to be held at Whitby on December 5 and 6 next.

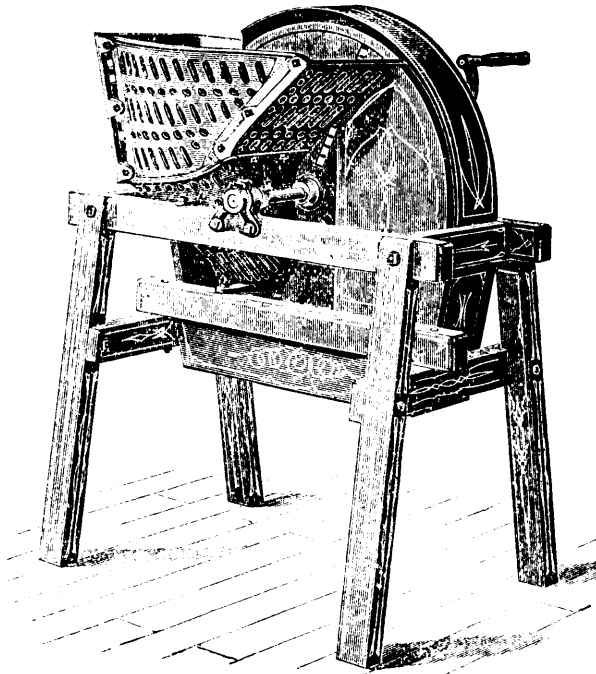
**Stock Notes.**

The following is report of live stock shipments for week ending Wednesday, November 15th, as prepared by R. Bickerdike, of the Live Stock Exchange, Montreal :

		Cattle		Sheep
Nov. 9,	Lake Superior	Liverpool,	340	
" 12,	Numidian	Liverpool,	224	
" 10,	Kastalia	Glasgow,	300	
" 14,	Grecian	Glasgow,	173	
" 11,	Man. Importer	Manchester,	400	275
" 12,	Bellona	Newcastle,	266	
		Total,	1703	275

WINNING YORKSHIRES.—Mr. S. Rogers, Cookesville, Ont., one of our energetic and painstaking breeders of Yorkshire swine, has been very successful at the 1899 fall fairs. In sending in a change of advertisement last week he writes: "I notice in FARMING the winning of some herds so I send mine. I made eighteen entries only and won eleven firsts, three seconds, two thirds and was unplaced twice."

LEICESTERS IN DEMAND.—Mr. Geo. B. Armstrong, Bowhill Farm, Teeswater, Ont.,

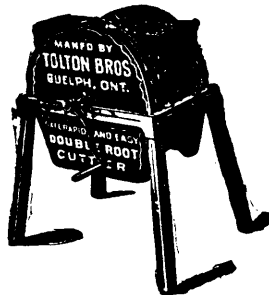


New Root Cutter (Pulper and Slicer combined)

**THE NOXON CO. (LIMITED)**  
Ingersoll, Ont.  
MANUFACTURERS OF  
**HIGH - CLASS FARM IMPLEMENTS**

Please write for Price List and Descriptive Catalogue

**TOLTON'S NO. 1 DOUBLE ROOT CUTTER,**



*Points of Merit :*

1. To change from pulping to slicing is but the work of a moment.
2. There are two separate wheels, one for pulping and the other for slicing.
3. The united force of both wheels is always used in doing the work in either capacity.
4. The hopper is between the wheels, and does not choke.

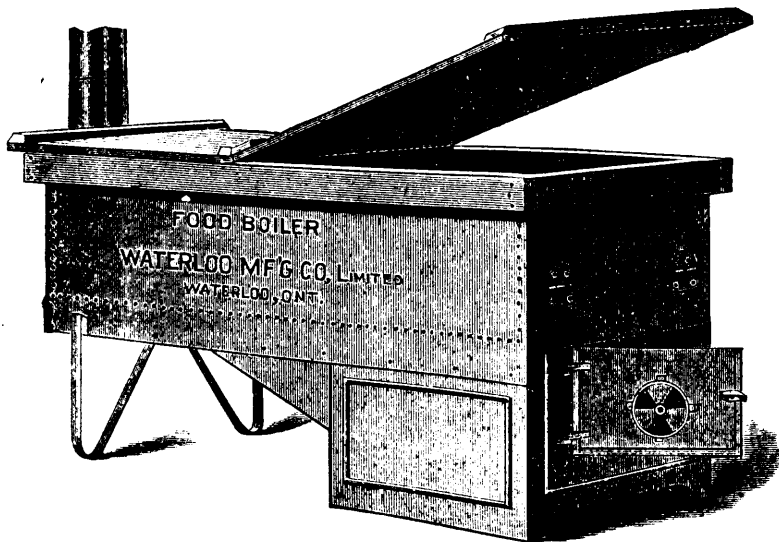
**THE ONLY DOUBLE ROOT CUTTER MANUFACTURED,**

Fitted with Roller Bearings, Steel Shafting and all that is latest and best in principle, material and construction.

**TOLTON BROS., - - GUELPH.**

**The "Waterloo" Food Boiler**

Used chiefly by Stock Feeders, Butchers, and for General Farm Use.



For Simplicity, Durability, Economy, and Saving of Time and Labor, it has no equal. Write for circulars.

**WATERLOO MANUFACTURING CO., Limited.**  
WATERLOO, ONT.

writes: "There has been a strong demand for Leicesters this fall. Up to the present time I have made the following sales: A two year-old ram went to Samuel Furbush, Hartland, Maine. A shearling ram and six ewe lambs to John Armstrong, Glenfarrow, Ont. A shearling ram to each of the following: J. Lehman, Formosa; W. Wallace, Lakelet; A. Adamson, Teeswater; Jas. Patterson, Ripley; Wm. Marshall, Hampden. A ram lamb and eight ewes to Schiestel Bros., Amble-side, and a ram lamb to each of the following: Wm. Pierce, Holyrood; Moffatt Bros., Teeswater; D. Campbell, Arnow; J. Morrison, Mildmay. I have a well covered shearling ram for sale yet and have reserved seven ram lambs from "Baron Solway" for next season's trade. I have been very successful at the local shows, winning the pen prize at three fairs this fall."

**IMPORTANT SHIPMENT OF SCOTCH SHORTHORNS FOR CANADA.**—Messrs. Alfred Mansell & Co., Live Stock Exporters, Shrewsbury, shipped by the S.S. *Kastalia* from Glasgow on Saturday, October 21st, '22 highly bred Scotch Shorthorns consisting of 3 young bulls and 19 young cows and heifers. Sixteen of these were shipped to Mr. W. C. Edwards, M.P., and the remaining 6 which comprised some very beautiful Shorthorn heifers from Mr. Marr, were to strengthen the herd of Mr. John Miller, of Broughain, Ont. Full particulars of this important shipment will appear in our next issue.

**SHROPSHIRE SHEEP FOR CANADA.**—On Monday last, Messrs. Alfred Mansell & Co., shipped per the S.S. *Monteagle* from Avonmouth on account of Mr. W. S. Hawkshaw, 40 Shropshire ewes in lamb, and 2 Shropshire shearling rams selected from the flocks of Mr. Alfred Tanner, Mr. Wm. Thomas, Mr. Corden, and others. The ewes were all in lamb to sires of the highest breeding, including amongst others sheep which had taken high honors at some of the leading English shows.

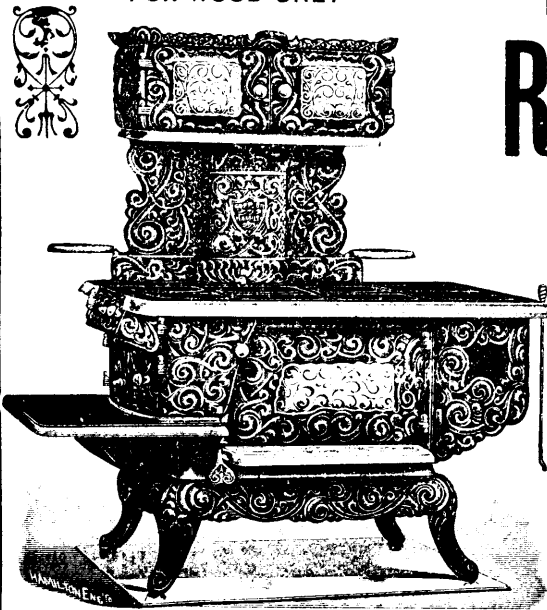
**SHROPSHIRE SHEEP FOR THE UNITED STATES.**—From Bristol, Messrs. Alfred Mansell & Co., Shrewsbury, shipped per the *Elder*, Dempster Line, 10 high class shearling ewes in lamb from Mr. A. E. Mansell's noted flock on behalf of Mr. Geo. Allen, of Allerton, sired by such successful sires as Ulster Rose 9734, two of whose sons realized 150 and 100 gns. at the recent Harrington sale; others were sired by Fortification, winner 1st S. & W. M. 1897 and 1898, and the sire of the ram with which Mr. Geo. A. Allen has been winning throughout America this season. These ewes are all served by sires of the highest standing, including Strongbone, Mr. Fenn's 100 guinea ram of this season, Ulster Rose, Rosebush and Fortification. It may be stated that these ewes were specially selected by Mr. Allen's representative in the early part of the present season.

**Of Value to Horsemen.**

Do you turn your horses out for the winter? If so we want to call your attention to a very important matter. Horses which have been used steadily at work, either on the farm or road, have quite likely had some strains whereby lameness or enlargements have been caused. Or perhaps new life is needed to be infused into their legs. Gombault's Caustic Balsam applied as per directions, just as you are turning the horse out, will be of great benefit; and this is the time when it can be used very successfully. One great advantage in using this remedy is that after it is applied it needs no care or attention, but does its work well and at a time when the horse is having a rest. Of course it can be used with equal success while horses are in the stable, but many people in turning their horses out would use Caustic Balsam if they were reminded of it, and this article is given as a reminder.

**It is to your advantage to mention FARMING when writing to advertisers.**

**The Aberdeen**  
FOR COAL AND WOOD  
**The Victorian**  
FOR WOOD ONLY



**Copps' Ranges**

**ARE GOOD RANGES**

They bear the "est marks" that constitute perfection in construction at every point—wonderful draught—fuel economy—faultless ventilation—sure cookers—rapid bakers—and they're right handsome in appearance, heavily and artistically mounted.

Write for Descriptive Booklet

**The Copp Brothers Co., Hamilton**  
BRANCHES—TORONTO AND WINNIPEG

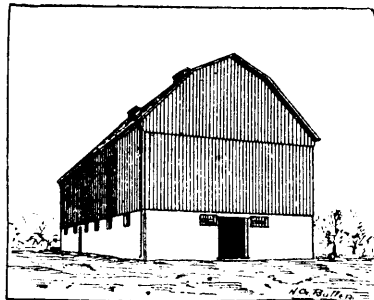


**40 for 10 Cents**

This book contains one hundred and ten of the best humorous recitations, embracing the Negro, Yankee, Irish and Dutch dialects, both in prose and verse, as well as humorous compositions of every kind and character. Sent, post-paid, with our illustrated catalogue of books and novelties for only ten cents.

**Johnston & McFarlane**  
71 Yonge St., Toronto, Can.

**Thorold Cement...**



Do you intend building Barn Basements, or Stable Walls, or Walls of any kind? if so, use "Battle's Thorold Cement," which can truly be called the

**Farmer's Favorite Cement**

Mr. J. V. Cooper, of Cedarville Stock Farm, Picton, Ont., the well-known breeder of Shorthorn Durhams and Oxford Down Sheep, who used a large carload, says: "Your cement is a credit to you, and I am more than pleased with my concrete walls."

Write us for Free Pamphlet and Prices

**STATE OF JOHN BATTLE**  
THOROLD, ONT.

**The Razor Steel**

SECRET TEMPER, CROSS-CUT SAW



WE take pleasure in offering to the public a Saw manufactured of the finest quality of steel and a temper which toughens and refines the steel, gives a keener cutting edge and holds it longer than by any process known. A Saw, to cut fast, "must hold a keen cutting edge."

This secret process of temper is known and used only by ourselves.

These saws are elliptic ground thin back, requiring less set than any saws now made, perfect taper from tooth to back.

Now, we ask you, when you go to buy a saw, to ask for the Maple Leaf, Razor Steel, Secret Temper Saw, and if you are told that some other Saw is as good ask your merchant to let you take them both home and try them, and keep the one you like best.

Silver steel is no longer a guarantee of quality, as some of the poorest steel made is now branded silver steel. We have the sole right for the "Razor Steel" brand.

It does not pay to buy a Saw for one dollar less and lose 25 cents per day in labor. Your Saw must hold a keen edge to do a large day's work.

Thousands of these Saws are shipped to the United States and sold at a higher price than the best American Saws.

MANUFACTURED ONLY BY

**SHURLY & DIETRICH**  
GALT, ONT.

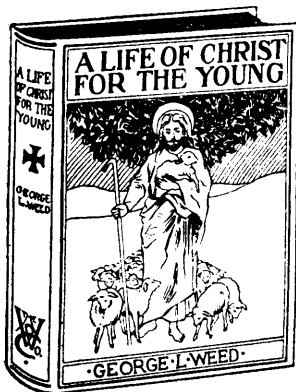
FARMING from now until end of year free.—Your subscription of \$1.00 will carry paper to you until Jan., 1901.

# Farming

**Offers Useful Premiums  
To Every Reader**

**K**NOWING what others are doing in earning good premiums at the cost of just a little exertion, we are anxious that you should share in these good things too. Many a young man on the farm will possess himself of a watch this Christmas as a result of securing a few subscriptions to FARMING. You may want a Bible, or a reading glass, or a good cook book, or our new work, "Life of Christ for the Young"—any or all of these may be had by simply making up a club for FARMING.

## DOLLAR BOOK FREE



It is bound in handsome cloth, with embossed front cover. Publishers' price \$1.00

—This book will be mailed post-paid to any present subscriber sending one new yearly subscription.

Present subscribers to FARMING (not in arrears) may receive a copy post-paid on receipt of 50c., half publisher's price.

## GENTLEMAN'S WATCH FREE

in solid silver case, open face, stem wind, fitted with Waltham movement, which is a guarantee that the watch is a good time-keeper, and will give satisfactory wear.

—This watch will be given free to any subscriber sending us fifteen new yearly subscriptions to FARMING, sent post-paid at our expense. Regular price of the watch is \$8.50.

Any subscriber to FARMING (not in arrears) can have this watch on payment of \$5.75, sent postpaid to his address.

## READING GLASS FREE

Any subscriber renewing his own subscription and sending \$1.00 extra will receive, carefully packed for mail, a good 4-in. reading glass that is sold regularly at \$2.50. This glass is especially valuable for examining seeds, insect pests, etc. Any subscriber sending us one new subscription may receive the glass for 75c.; and by sending three new subscriptions will receive the glass free.

## ANOTHER WATCH FREE

Nickel finished case, open face, stem wind and set. We do not say this is a full nickel watch, but it will hold its color for a year or more, whilst we can thoroughly recommend it as an accurate time-keeper. It is the watch in use among a large number of the conductors of the Toronto Street Railway, where an accurate time-keeper is a necessity.

—This watch sent postpaid to any subscriber sending four new yearly subscriptions to FARMING.

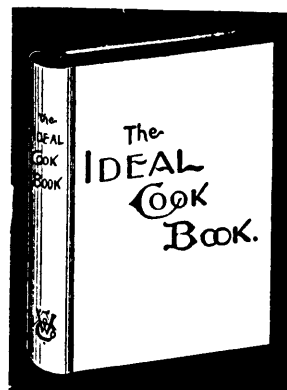
It will be sent to any present subscriber (not in arrears) on receipt of \$1.50.

## BIBLE FREE

Any subscriber adding only 75c. to his subscription may have a copy of the Oxford Workers' Bible that is sold regularly at \$2.50 sent postpaid to his address. This volume is printed in very large, clear, new Minion, size 5 in. x 7½ in., and bound in Levant Morocco, linen-lined, with round corner and red undergold letters.

## COOK BOOK FREE

Only three new subscriptions are needed to secure a copy of the Ideal Cook Book, a most valuable book for every house keeper. The section entitled the "Doctor" is itself worth the price of the book. Size of page 5 in. x 8 in. Bound in handsome oilcloth cover. The Ideal Cook Book cannot be had in the book stores. Published price \$1.00. Copy of the Ideal Cook Book will be sent to present subscribers (not in arrears) on receipt of 50c.



Between now and the end of the year is the time that everyone is making up their list of magazines or papers for the new year, and you will not find it difficult, knowing FARMING as you do, to influence your friends to also become subscribers.

Address all letters and make cheques, money orders or drafts payable to

**FARMING, CONFEDERATION LIFE BUILDING TORONTO**

# Market Review and Forecast

Office of FARMING,  
Confed. Life Building,  
Toronto, Nov. 20, 1899.

Towards the close of navigation business slackens in many wholesale lines. The volume of trade continues good and merchants are generally satisfied with it. Money continues firm, owing to the large requirement due to the expansion of trade.

## Wheat.

The wheat situation shows little, if any, change in the general tone. If there is any change, it seems to be in favor of the consumer, though towards the end of the week western wheat was firmer. It is now pretty well conceded that there are ample supplies for all requirements, and some to spare on the present crop. Reserves at European points have risen to an unusual height for this season of the year. Full returns of the Australian 1898-99 crop show an increase of over twenty million bushels as compared with the previous one. The world's supply in sight is now 78,162,000 bushels, as against 42,274,000 bushels a year ago at this time. There are reports that Manitoba crop will fall considerably below estimates.

The English market continues weak, and owing to increased supplies there has been another decline of a 6d., but at the decline a steadier feeling is reported. At Chicago prices dropped 1½c. early in the week, making a decline of 7c. within two months. Wheat movement in the west is light. Things are quiet at Montreal and business in wheat of late has been unsatisfactory. Here the market is dull and weak at 65 to 66c. for red and white west and north, and 69c. for goose. On the Toronto farmers' market red and white bring 68 to 70½c, spring five 68c. and goose 68c. per bushel.

## Oats and Barley.

There is a better demand reported for Canadian oats in the English market. The Montreal market is quiet and easy, and prices are ½c. lower than a week ago. The market here is easier at 25½ to 26c. for white west. On the farmers' market oats fetch 31 to 32c. per bushel.

Some large sales of Canadian barley have recently been put through at Montreal on export account. Barley is quoted here at 40c. for No. 2 west, and 35 to 36c. for feed barley. On the farmers' market it brings 42 to 44c. per bushel.

## Peas and Corn.

Peas are quiet, with not much business doing, there being very little export demand. The market here is reported steady at 56½c. east, 56c. middle freights, and 55 to 55½c. west. On the Toronto farmers' market they bring 60½c. per bushel.

There are continued reports of disappointment in the western corn yield. American corn is quoted at 40c. on track, Toronto.

## Bran and Shorts.

Ontario bran, for which there is a good demand, is quoted at Montreal at \$15 to \$15.25, in car lots; Manitoba bran at \$14.50 to \$15, and shorts at \$16 to \$17.50 per ton. City mills here sell bran at \$14 and shorts at \$16 in car lots f.o.b. Toronto.

## Eggs and Poultry.

There is a continued active export demand in Great Britain for fresh and pickled eggs. It looks now as if there was hardly going to be enough good stock of eggs on this side to do till spring. Choice fresh candled eggs are quoted at Montreal at 18 to 19c., and strictly new laid at 20 to 21c. in large lots. Fresh eggs are quoted here at 17 to 18c. in large lots. On the Toronto farmers' market new-laid fetch 25 to 30c. per dozen.

Large quantities of turkeys have been contracted for for the British market. Many of them will go forward soon. Sales have been made of dressed turkeys delivered at Ontario points at 8½c. per lb. There has been a good demand at Montreal for dressed poultry, though the warmer weather of the past few days has hurt it some. Choice turkeys, dry-picked, are quoted at 9 to 9½c., and scalded at 8 to 8½c. per lb. Choice dry-picked chickens bring 7 to 7½c., geese 6 to 7c., and and ducks 8 to 9c. per lb., in large lots. Scalded do not sell so well. Receipts continue large here, with a fair demand at 25 to 50c. for chickens and 30 to 60c. per pair for ducks, and 5½ to 6c. per lb. for geese and 8 to 9c. for turkeys, in large lots. On the Toronto farmers' market prices are about 20 per cent. higher than these figures.

## Potatoes.

These are steadier at Montreal with quotations at 40 to 42c. per bag in car lots. It is expected that when cold weather comes prices will be better. Potatoes in car lots are quoted here at 37 to 40c. per bag. On the Toronto farmers' market they bring 40 to 50c. per bag.

## Apples.

The export market seems to have recovered somewhat from last week's depression, though things are not as satisfactory as they might be yet. A very large share of the winter fruit is arriving in bad condition. In many cases the packing has been done as well as it could be done, and yet there are complaints, showing that this year's fruit has not good keeping qualities. Mr. R. H. Ashton, of this city, received the following cable from Manchester on Nov. 17th: "Apples per steamer Manchester Corporation, opening slack packed. Quotations: Baldwins, 12s.; Greenings, 11s.; Spies, 11s. 6d.; Kings, 16s." This is an improvement on last week's quotations. At Montreal things are quiet with little life in the market. Prices are generally in favor of buyers with No. 1 quality quoted at \$2.75 to \$3.50, and No. 2 at \$1.60 to \$2 per barrel. At the Toronto farmers' market apples bring \$1.50 to \$2.50 per barrel.

## Hay and Straw.

It is reported that the successful tenderers for supplying hay for South Africa get from \$9 to \$11.50 per ton. The Montreal market is firm and active for baled hay, there being a good demand for both the local and foreign market. Quotations there are \$9.50 to \$10 for No. 1; \$8.50 to \$9 for No. 2, and \$7.50 to \$8 per ton for clover. No. 1 timothy is in good demand here at \$9 to \$9.50 for No. 1 quality on track Toronto. On the farmers' market hay brings \$11 to \$13; sheaf straw, \$8 to \$9, and loose straw \$4 to \$5 per ton.

## Seeds.

There is not much change in seeds. Red clover is quoted at Montreal at 8 to 9c. per pound as to quality; flax seed \$1.15 to \$1.40 per bushel, and American timothy at \$1.25 to \$1.50 per bushel. On the Toronto farmers' market red clover brings \$4.25 to \$5; alsike, \$5 to \$7.30; white clover, \$7 to \$8; and timothy, \$1 to \$1.65 per bushel as to quality.

## Cheese.

The cheese market has ruled quiet during the week, though buyers have been getting a few lots at current values. A good deal of late make Eastern cheese has been bought up at 10½ to 10¾c., while Septembers have sold at 10¾ to 11c. at Montreal. Late-made Westerns have changed hands at 11 to 11½c., but finest Septembers are held firmly at 11½c. Holders are not anxious to sell these goods, as they will be wanted later on. As regards

stocks held in Canada it is admitted that they are very much smaller than those of last year at this time, some maintaining that they are not more than half those of last year, while others claim that they are not as large by 250,000 boxes. For some time back weekly receipts at Montreal have been falling off very much, showing a total decrease of 152,097 boxes. Most of the local markets have closed for the season. At Brockville on Thursday colored sold at 10¾c., and white at 10½ to 10¾c. All the November cheese in the Belleville district is reported sold at 9½c., which is considered pretty good for that quality of goods. On Saturday, at London, Ont., cheese sold at 11c. to 11½c.

## Butter.

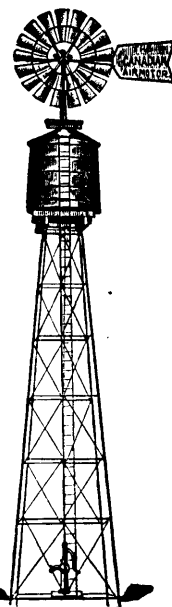
The export butter market has taken another drop, as the *Trade Bulletin's* London cable of November 16th shows. It reads thus: "Since my last cable the market has become demoralized under heavy arrivals of Australian, and prices have further declined 5s. per cwt. Finest Canadian creamery has sold on the market at 96 to 98s., and good to fine at 90 to 94s."

The demand for butter has fallen off considerably at Montreal, and values have declined another cent on the week, with just sufficient sales at 19 to 19½c. to establish that range as a basis for finest creamery. These figures show a drop of 4½ to 5c. per lb. from top prices not long ago. While this is the condition on this side, almost the reverse is the case in New York and the American markets. There is a very strong feeling in New York, where prices have advanced to 25 and 25½c. for finest creamery. Dairy butter is reported to be scarce at Montreal, one dealer there purchasing a lot at 16c. f.o.b. in the country. Receipts are increasing somewhat here, and a slightly easier feeling prevails. Choice creamery is quoted at 21 to 22c. for boxes and 22 to 23c. for prints. Choice dairy tubs bring 18 to 19c., and rolls 19 to 20c. per lb. On the Toronto farmers' market pound rolls bring 20 to 24c. each.

## Wool.

There is a firmer feeling at Montreal in Canadian wools, although they have not advanced in prices to anything like foreign wools. Dealers in the country are paying 15½ to 16c. for Canadian fleece. Montreal quota-

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tions are 10½ to 17½c. for fleece and 19 to 21c. for pulled. Toronto prices show no change.

#### Cattle.

There is no material change in the cattle situation. At all leading markets the demand is strong for all good grades. At Toronto market on Friday receipts were fairly large. Fully one-half the cattle offered were stockers and feeders, which were, generally speaking, of the rough class, few choice, well-bred steers for feeding purposes being offered. With very few exceptions fat cattle were of inferior quality, in fact, they were, on the whole, the worst lot that were ever seen on this market. It is, indeed, little wonder that Canadian cattle bring such low prices on the English markets when the quality is so inferior. Trade on Friday was very slow and the market very dull, except for a few of the best cattle, which were quickly picked up. Prices were easy at quotations.

**Export Cattle.**—Choice lots of export cattle sold at \$4.50 to \$4.75 and light ones at \$4 to \$4.25 per cwt., the bulk selling at \$4 to \$4.50 per cwt. Heavy export bulls sold at \$3.80 to \$4 and light ones at \$3.25 to \$3.50 per cwt.

**Butchers' Cattle.**—Choice picked lots of these equal in quality to best exporters, but not so heavy sold at \$4.12½ to \$4.25; good cattle at \$3.60 to \$3.70; medium at \$3.30 to \$3.40; common at \$2.85 to \$3.12½, and inferior at \$2.30 to \$2.80 per cwt.

**Feeders.**—Choice, well-bred steers, 1050 to 1200 lbs. each, were scarce, with prices firm at \$3.75 to \$3.85. Rough steers of same weight sold at \$3.40 to \$3.60 per cwt. Light steers, weighing 800 to 900 each, sold at \$3 to \$3.25 per cwt., and feeding bulls at \$2.50 to \$2.75 per cwt.

**Buffalo Stockers.**—Yearling steers, 500 to 600 lbs. in weight, are easy at \$2.60 to \$2.75. Other grades fetch \$2 to \$2.50 per cwt.

**Milch Cows.**—The cows offered were of medium class. Prices were firm, ranging all the way from \$30 to \$55 each.

**Calves.**—These sold at \$4 to \$12 each. Choice calves are easier at Buffalo, the best selling at \$7.50 to \$8 per cwt.

#### Sheep and Lambs.

Sheep were firm on Friday at \$3.25 to \$3.50 for ewes, and \$2.50 per cwt. for bucks. Lambs were also firmer at \$3.25 to \$3.65 per cwt. with a few choice lots of ewes and wethers for export at \$3.75 to \$4 per cwt. Erick Bros. Live Stock Commission, Buffalo, write of Canadian lambs on Nov. 16th, as follows:

"There has been but very little change in the trade from last week; the strictly good to choice ewe and wether lambs have sold around \$5 to \$5.10, with occasional fancy loads up to \$5.15, and the buck grades around \$4.90 to \$5. There is nothing to warrant any change in the situation, and continue to buy them in the country to sell at \$5 and be on the safe side."

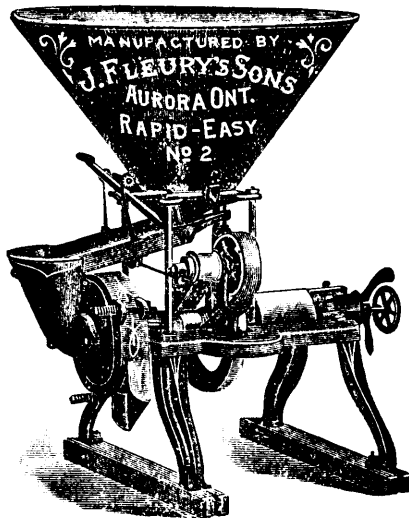
#### Hogs

Deliveries were large on Friday with prices unchanged at \$4 per cwt. for select bacon hogs weighing 160 to 200 lbs. each, and \$3.75 per cwt. for light ones under 160. The bulk of uncultured car lots sold at \$3.90 per cwt. There is a good demand reported at Montreal from packers at \$4.25 for select bacon hogs and \$4 to \$4.10 per cwt. for other grades. There is reported to be a good supply of hogs in the country. The *Trade Bulletin's* cable re Canadian bacon reads thus:

"London, November 16th, 1899—The market has steadied up since the recent decline, under an improved demand, and prices have advanced 2s. from the lowest point."

A man said to a pettifogging lawyer, "Is there a cause so bad or an individual so infamous that your services cannot be obtained?" "I cannot say," said the barrister; "what have you been doing?"

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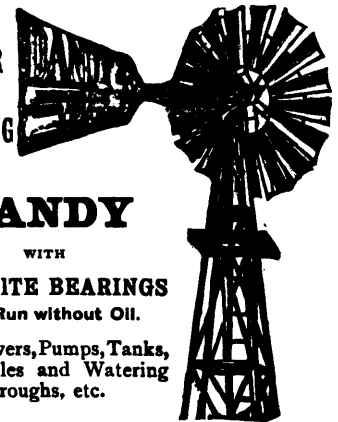
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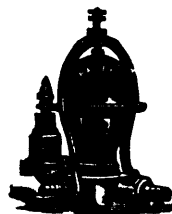
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