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FARMING

October 4th, 1898.

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TELEGRAMS: DEAN, RIPPINGALE.

J. E. Casswell

Stock Book
No. 46

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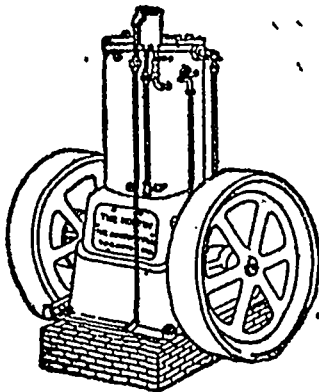
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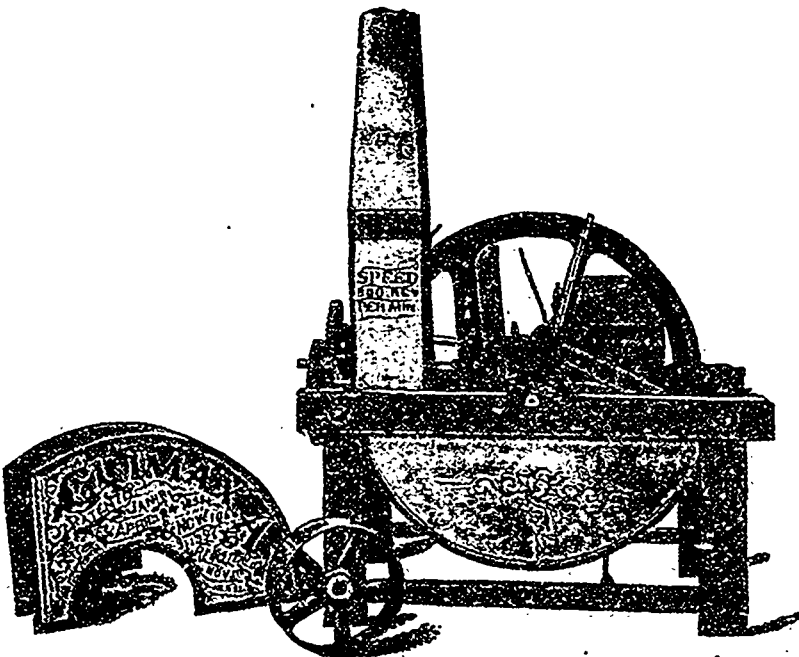
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They last longest, draw lightest, work easiest. Our name and address cast in all repairs protects the farmer from imposition.

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in three sizes, are the simplest the strongest, the fastest, and the lightest running in the market.

Threshers have threshed all morning, and cut and delivered the straw in the mow in the afternoon. Capacity is only limited by the quantity which you can get to the machine.

The WILKINSON PLOUGH CO., Limited, - TORONTO, Ont.

FARMING

VOL. XVI.

OCTOBER 4th, 1898.

No. 5.

A Ten-Days' Milking Competition.

For several years back, at the Provincial Fat Stock and Dairy Show and at the Industrial and other fairs, we have had a two-days' milking competition, in which only the milk product and the fat and the solids not fat have been taken into account. At none of these tests have the quality and quantity of the food consumed been considered when making the awards. All this has been satisfactory as far as it goes, but we do not think it goes far enough. We are of the opinion that the time has come for a milking competition extending over a longer period of time, and one in which the food consumed is taken into account as well as the milk produced. A milking test in which only the product is considered tells but half the story, and, though there are many reasons for believing that some of the cows which have come out on top under the present system would do so if the food consumed were taken into account, still we would like to see it conclusively proven.

We know that there are several obstacles in the way, such as the extra expense and the time and labor necessary to conduct the test properly; but we think these could be easily overcome by active co-operation on the part of the breeders, the breeders' and dairy associations, and the exhibition authorities. A ten-days' test would be sufficient, and this could be arranged for during the Industrial Fair. The Industrial is the first large fair held during the year, and breeders in fitting their cows for the dairy test could do so without its interfering with their attendance at the other fairs held later on. Such a test could begin, say on Tuesday of the first week of the fair, and continue till Thursday of the second week, thus covering a period of ten days and running concurrently with the exhibition. Arrangements could be made for those intending to compete to bring their cows in a week, if need be, before the test began, and, if one of the cattle-sheds were devoted exclusively to this purpose, there should be no great difficulty in having the test carried out satisfactorily.

A ten days' milking competition has or will take place in connection with the Omaha Exhibition, particulars of which were given in our issue of August 23rd last, and there does not appear to be any very valid reason why we could not have one in Canada in connection with the Industrial Fair. It would prove an interesting feature at the fair, and the results obtained would be more conclusive and more valuable than those obtained, as heretofore, from a test in which no food consumed was taken into account. We would like to hear from breeders and others in regard to the feasibility of this plan. We think it is possible to have such a test, and that arrangements should be made early for conducting it in connection with the Industrial Fair for 1899.

Do Packers Pay a Sufficient Premium For Bacon Hogs?

Those who have followed the weekly market reports in FARMING for the past month or two anyway closely will have noticed that the difference in the prices paid on the Toronto market for choice bacon hogs and for thick fat hogs has been from twenty-five to forty-five cents per hundred pounds. In last week's issue there was a difference of only twenty-five cents between the prices paid for these two qualities of hogs. This is really a remarkable state of affairs. For the past two or three

years nothing has been brought so prominently before our breeders and farmers than the necessity of having the right kind of hog for bacon-producing purposes, and yet we find that the packers and buyers throughout the country will at the most not pay more than fifty cents per cwt. for choice bacon hogs than for thick fat hogs. In fact, many drovers in the country make very little distinction between the two and will very often pay as much for one kind as the other.

With this condition of affairs existing is it any wonder that our farmers and breeders are not taking to the raising of choice bacon hogs as readily as was to be expected under the circumstances. So long as the farmer can get within a few cents, if not as much, per cwt. for his thick fat hogs as for the bacon type he will not be very eager to discard the former and adopt the latter. Breeders of what are termed the thick fat hog and farmers who raise this variety claim that they can produce pork cheaper with it than with the so-called bacon type. If this be true, then the packer or drover must be willing to pay him a sufficiently higher price per lb for the bacon hog to enable him to make a good profit by the change. Though the farmer realizes as well as anyone else the importance of supplying the export bacon trade with the right kind of goods he is not governed altogether by sentiment in the matter, and unless he can see his way clear to make that kind of pork raising more profitable than what he has been accustomed to he will not change from the old method. If he raises the thick fat hog, and makes a profit out of it at \$4.25 per cwt., he is not going to change to the bacon type, which sells at \$4.60 per cwt., unless it can be proven to his satisfaction that there is more money in raising the latter kind.

The following item from Hodgson Bros' Liverpool market report of September 17th gives a fairly good idea of the prices obtained for choice Canadian bacon and the American quality, which is made from the thick, fat hog, "Singed Wiltshire, Canadian 40/55 lbs., 50s. to 56s.; American 40/50 lbs., 35s. to 40s." Here we find a difference of 15s. to 16s. in the price per cwt. (112 lbs.) paid for cuts of the Canadian and American varieties. If these figures be taken as a guide are our packers making a sufficient distinction between the prices paid for choice bacon hogs, that will produce the former quality, and thick fat hogs, that will produce the latter kind? We think not, and unless they are willing to make a wider difference between the price of the two than they are now doing it will be hard work to educate the farmer to change his methods.

The Kind of Cattle it Pays to Fatten

The following extract, taken from the Chicago Live Stock Report, will be of value to those who intend feeding cattle the coming winter:

"In nothing is the importance of a right start more vital than in the fattening of live stock, and particularly cattle, for market. Many elements contribute to success, but, unless the start is right, skill and care count for but little, and failure is stamped upon the undertaking from the very outset, unless indeed fortunate circumstances, such as a combination of high-priced beef and low-priced feed should intervene. It is of the greatest moment, therefore, that the feeder should select the right kind of cattle for fattening. We say kind and not breed, for while there are several good beef breeds there is but one beef type which is possessed by the several breeds in common. With some feeders a steer is a steer, and the idea that one animal

may be more profitable to feed than another does not seem to enter their heads, or if it does it is chased away by the delusive thought that the smaller cost of the inferior animal will offset any difference. Fortunately this class of feeders is small, and the vast majority well understand that the profitable steer to feed is the one bred and built for beef-making, the animal that repays feed and care by putting on a thick covering of rich, ripe, juicy flesh, deep and thick in the parts from whence the high-priced cuts of meat are taken—and not the animal that converts the bulk of his feed into tallow and hardly puts on flesh enough to decently cover his bones, and that of inferior quality. No argument that can be brought to bear against the scrub and in favor of the well bred animal is so potent as to show that it pays to raise and feed the latter."

Though this extract may convey the market side of the question it is nevertheless of value to every feeder. Everyone who feeds cattle is catering for some market, and if he is not able to supply that market with the kind of goods it requires he will not be able to get the highest price for his product. There is a very wide margin between the price paid for prime beef cattle and that paid for scrubs. Then why not produce the quality that will bring the highest price. It is the same with beef cattle as with any other farm product; it does not cost any more per lb. to produce a good steer than a poor one.

A Western exchange in discussing this question states that the lesson of quality in beef cattle has been learned by feeders at great expense, and farmers who profit by this experience will improve their stock by grading up to pure-bred sires. This is the correct view to take. No farmer can expect to raise a good line of beef cattle unless he gives some attention to breeding. One of the simplest and cheapest ways of improving the quality of the beef cattle on the average farm is by the use of pure-bred sires of the beef breeds. If every cattle breeder could visit the cattle markets of the country he would learn a lesson that would be of value to him ever afterwards. The cattle which command the highest prices for beef-producing purposes are almost invariably those bred from pure-bred sires, while those which bring the lowest prices may, as a rule, be traced back to scrub ancestry.

The Agricultural Experiments of Rothamstead

The Mark Lane Express in a recent issue publishes an interesting summary of the Rothamstead experiments. These experiments in manuring crops and feeding farm animals have been carried on now over sixty years, and during at least fifty-five years they have been systematized. The land, laboratory and the sum of £100,000 were conveyed by Sir J. B. Lawes to trustees for the purpose of experiment, and that they should continue as such after his death. The principal associate in the work has been Sir J. H. Gilbert. In summing up the experiments it is noticeable that in the matter of manuring alone tremendously important results have been gained. They have evidenced the immense amount of locked up fertility possessed by the soils, and they have pointed to various ways to make it available, some of them practical and some of them impractical. They have forcibly impressed upon us that manuring is not merely the putting into the ground of certain quantities of potash, phosphoric acid and nitrogen as we would put hay and oats into the manger. The importance of soil stirring and the bringing about in the soil of an action to liberate the manurial powers of the soil stand out very strongly in these experiments.

A very important action is noticed in permanent grass lands, the effect of purely nitrogenous manures being to increase the graminaceæ and to reduce almost to exclusion the clovers and other leguminous plants, while the applying of purely mineral manures greatly increases the growth, but more particularly increased the luxuriance and proportion of the clovers and other leguminous plants. This confirms the Darmstadt experiments, from which Wagner

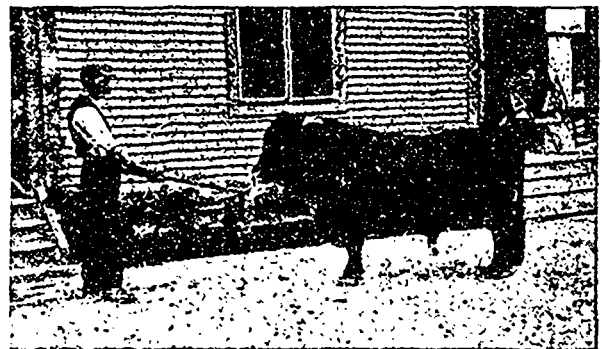
pointed out some years ago that clover resulted from the application of purely mineral manures, notably Thomas-Phosphate. The importance of the use of farm-yard manure is emphasized by the experiments, and much light is cast upon the causes of its varying character. Material, and in some cases highly important, increases in yield were noted on plots where Thomas-Phosphate was substituted for superphosphate in the experiments.

The results in fallowing experiments have been rather against the fallow, as while the land lies in the fallow there seems to be a considerable loss in the nitrogen made available during the fallow. An important, and, in the light of other recent experiments, both chemically and practically, a most important matter has been entirely neglected in these experiments, in that no record has been made of the comparative value of the various samples grown. No doubt it will in the future become a part of the experiments to prove the feeding value of every plot and crop, as other experimenters have recently shown as the result of their labors wonderfully increased feeding values in fodders, both by a chemical analysis of the crop and a comparative weighing of animals fed by it.

Ontario's Agricultural Progress

Written for "Farming" by Phillips Thompson

Some time since an address of more than usual interest from a practical point of view, on the subject of "The Development of Agriculture in Ontario," was delivered by Mr. C. C. James, Deputy Minister of Agriculture, and secretary of the Ontario Bureau of Industries to the Political Science Club of Toronto University. It appears with other papers worthy of preservation in a permanent form in the recently published appendix to the annual report of the Ontario Bureau of Industries. The address presents a



The Dexter Kerry Bull Bantam. Bred by His Royal Highness the Prince of Wales. He was champion of the Royal Agricultural Society Show at Manchester, England, and was shown at the Ottawa Fair, 1898, by Senator Drummond, of Quebec.

historical review of the growth of Canada's main industry in this province from the earliest times to the present day, noting the changes in the conditions and surroundings of farm life and the principal factors which have to so large an extent revolutionized agriculture. A few interesting figures are presented at the outset showing the transcendent importance of agriculture as a source of national wealth. The yearly produce of Canadian farms is valued at no less than \$600,000,000, as compared with \$20,000,000 from the fisheries, about \$30,000,000 from the mines, and \$80,000,000 from forest products. In Ontario the yearly value of agricultural products is over \$200,000,000; the capital invested in farms about \$900,000,000, and the number of persons employed in farming in 1891 was 292,770.

The agricultural history of Ontario is divisible into four epochs, each marked by special characteristics. During the first period, the days of early settlement from 1783 to 1812, the pioneers devoted themselves mainly to the task of building up homes and making clearings in the wilderness. They raised little more than was necessary to support themselves, and farm exports were limited to timber and potash. The

great war of 1812-14 caused a European demand for grain at high prices which the greater extent of cleared area enabled Canadian farmers to supply, and the period from 1812 to 1837 was characterized by the growth of an export trade in wheat. During the period between 1837 and 1867 there was a great rush of immigration from the Old Country. The new settlers imported improved varieties of live-stock and wheat farming began to give place to mixed farming. The raising of stock took a more prominent place in farm industry and the basis was then laid for the great development of the trade in live stock which has resulted in the ownership by Ontario farmers on July 1st, 1896, of live stock to the value of \$96,857,566, sales to the amount of \$28,750,000 having been made during the year ending at that date.

The fourth period, covering the years 1867-97, claims as a special characteristic the establishment of the co-operative cheese factory and creamery. The first cheese factory run on this principle in Ontario was started in 1864. The idea spread rapidly until in 1883 there were over six hundred in operation. In 1896 the number was 1,147, with 57,635 patrons producing 104,000,000. The co-operative creamery which has followed promises to be equally successful.

Mr. James specifies four causes as having notably aided the development of our agricultural resources. These are the increased use of machinery, the improvements in the means of transportation and communication, the applications of scientific discoveries, and the changes in methods of work and the introduction of co-operative associations. While farm machinery has resulted in greatly augmenting the total production it has enabled the work to be performed by fewer hands. During the decade 1881-91 the area of improved land in the Dominion was increased from 21,899,180 to 28,537,242 acres, but the number of farmers and farmers' sons diminished from 656,712 to 649,506. The number of people engaged in farm work in Ontario is fewer than ten years ago but the product is much larger. According to the statistics of the Provincial Department of Agriculture the development since 1883 has been as follows :

	1883.	1896.
Total farm lands.....	21,458,067	23,172,408
Acres of field crops.....	7,542,623	8,511,444
Value of farm lands.....	\$654,793,025	\$557,468,270
Value of implements.....	\$43,522,530	\$50,730,358

When the great reduction in the price of machinery is borne in mind, the extent of the increase in its use on the farm will be fully appreciated.

The writer notes with satisfaction the progress of the movement to establish cold-storage warehouses and shipment facilities, which, by placing perishable farm products in a fresh and attractive form on the European market, is calculated greatly to increase the demand for such produce. The movement for improved highways, and the extension of electric railroads into the rural districts, are referred to as present day developments, likely to introduce new social and financial conditions of agriculture of a beneficial character. One of the most hopeful signs of the times, in his opinion, is that agricultural scientific investigation is attracting more and more attention on the part of our governments. The improvement of varieties of grain and other vegetable products, owing to the researches and experiments of botanists, have been of great practical utility to the agricultural interest. An increase of 25 per cent. in the value of the Ontario grain crop, now amounting to \$50,000,000, by means of selection and cross-fertilizing, is regarded as within the range of possibility. On this point the president of the Agricultural College states, in his report for 1897, that some excellent foreign varieties have been introduced and distributed, which yield six or eight bushels to the acre more than those previously grown. In oats and barley alone the varieties introduced and distributed by the experiment stations have, within four or five years, paid to the province a good deal more than the entire cost of the college for the past ten years. Another department of science which is rendering a most important

service to agriculture is that of entomology, which is battling against the swarms of destructive insects that inflict such damage upon crops. The losses of the United States from insect ravages were estimated at \$400,000,000 during 1884, and \$300,000,000 in 1891. When the extent of these losses is considered it is difficult to over-estimate the practical importance of the study of entomology, from an economic point of view.

Agricultural co-operation has advanced from the primitive logging-bee and barn-raising of the early settlers to the methods of the cheese factory and creamery. Another form of associated effort is the formation of societies of all kinds for the improvement of agricultural conditions. It was not until 1830 that agricultural societies received legislative recognition; but since that time they have been liberally aided, and have greatly increased and prospered. In 1897 there were Farmers' Institutes in every riding or district, twelve live stock associations, two dairy associations, a beekeepers' association, and the entomological society.

The expenditure of provincial money in aid of agriculture has largely increased. Appropriations under this head in the three years 1868-69-70 amounted to \$195,969, while the outlay for similar purposes for the three years 1895-96-97 amounted to \$718,156. For the thirty years, 1868-97, inclusive, the total expenditures by the Legislature on behalf of agriculture aggregate \$4,509,090.

The Clover Question

By T. C. Wallace (Wallace & Fraser), Toronto, Ont.

It is surprising how thoughtlessly writers and lecturers on farm topics advocate practices without considering the why and wherefore of the matter.

When it was thoroughly established that clovers, and in fact all the legumes, had the power of converting atmospheric nitrogen into plant food free, immediately writers and lecturers sprang up in all parts preaching that clover growing in the grain stubble for plowing down was the secret of soil fertility. Some said clover and barnyard manure were the only manures needed. Even our better informed agriculturists fell into the error in many cases. Farmers should remember that growing clovers for a plowing down manure crop (it is often immaterial whether you plow it down or feed it off and utilize the animal manure) is not a new practice, but that until recently science had not discovered the exact nature of the benefit derived from such a method.

Professor Paul Wagner, Ph.D., the able director of the Agricultural Research Station at Darmstadt, who makes thousands of manurial experiments every year in both field and pots, carried on for several years a series of tests to discover if possible the needs of clover. He found that clovers do not bring us any important benefit, unless they are well supplied with phosphate and potash. He laid particular stress on the phosphate, partly because lands generally have a comparatively small amount of it, and what is contained is in such an unavailable form, being in great forcible combination with the bases of soil; and partly because the growing of animals and people on the farm, and in the cities, saps the soil of its phosphate, which is utilized by the bony structure and not returned by the farm manures. The potash, on the other hand, is largely returned in the manures of the farm, as, entering into the soft parts of the animal only, it is carried off daily by the ordinary waste of the system.

We are told that barnyard manure contains phosphoric acid, but particularly only from the undigested food expelled by the animal, and from the straw litter, which has a small quantity. An animal during its lifetime on a farm returns in manure nearly all the potash and nitrogen it consumes, but only about such portion of the phosphate as it fails to assimilate. Some will confidently assert that the analysis of a clover crop shows a certain percentage of phosphoric acid, but never stop to consider that it only repre-

sents the land brought up, and is not like nitrogen brought into the soil from the air by clover growing. People who particularly advocate dairying and cattle raising advise the feeding of the clover, rather than the turning of it down with the plow. Either plan is good, and only the circumstances in which we find ourselves must be our guide, for it is all-important that we adopt the most profitable method. If we plow the clover down, and it has found sufficient phosphate in the soil to satisfy it, we will get the full benefit of having atmospheric nitrogen converted into plant food and added to our soil, and all the mineral elements taken from the soil returned directly, to serve for following crops of grain, roots or grass. If we feed it to cattle they will use up most of the phosphate of the clover, and the manure will principally represent a considerable portion of the nitrogen and potash, the phosphate having been largely used for bone building and maintenance. In the matter of perfect utilization of nitrogen by plants when well supplied with available phosphoric acid, the clover only follows the ordinary law of nature, as, even with abundance of nitrogen present in a soil, grains and other crops will not make the use of the nitrogen unless well supplied with phosphoric acid, and it has been very fully demonstrated that the produce of soils most richly prepared with barnyard manure, or clover manure, can be doubled and trebled in feeding value by the application of pure phosphate.

Valuable as our barnyard manures are, and without seeking to in the least underrate them, we must now recognize that clover and phosphates are the sources by which we can most economically, and therefore profitably, add to the fertility of lands already impoverished, and keep up fertile soils.

Fattening Steers in Winter

By Prof. Thomas Shaw

This paper is a condensation of the facts contained in Bulletin No. 58, Section 1, recently issued by the Animal Industry Department of the Minnesota University State Farm. It relates to the fattening of steers reared upon the farm, and under circumstances most untoward, so far as concerns the prices of meat, as steers were selling high at the commencement of the regular feeding season, but before it was over prices were unprecedentedly low. That any profit was possible under such circumstances was surprising. It could not possibly have been secured had it not been that the prices of feed were way down also.

The feeding period commenced January 6th, 1896, and ended June 4th, thus covering a period of 150 days. The delay in entering upon the work was caused by the difficulty experienced in getting steers. It was the aim to feed three lots, consisting of Galloway, Shorthorn, and Hereford grades. Though the first lot was secured as early as September 1st, the last lot was not secured till January 1st. The average of cost was \$3.70 per 100 lbs. live weight unshrunk, and the price for which they were sold when finished was \$4.10 per 100 lbs. shrunken weight. Those who understand about feeding cattle will know that under these conditions, with feeds dear, there would have been much loss, but as it happened the experiment resulted in a small profit.

Those familiar with western feeding know very well that, in the open feed lot in the West, it is customary to feed not less than 25 lbs. or 30 lbs. of corn per day to one animal that is being fattened. But the animal is followed by a pig which would probably consume not less than 5 lbs. per day. The quantity utilized by the cattle beast, therefore, if it were all digested, would be not less than 20 lbs. to 25 lbs. This to the writer has always seemed most wasteful feeding, and the experiment was undertaken with the object of getting some information regarding the amount of meal a cattle beast can utilize per day, with suitable adjuncts. It was thought wise to use steers of different grades in the experiment, although breed capabilities were not considered an important factor of the same.

The steers were placed in stalls, those of each grade standing side by side. The animals which stood at the right, in each instance, are spoken of as lot 1. Those standing in the centre are spoken of as lot 2, and those standing at the left hand are spoken of as lot 3. There was, therefore, one steer of each grade in each lot. The steers in lot 1 were fed, what is termed, a light meal portion; those in lot 2 an intermediate quantity, and those in lot 3 a heavier meal portion. When put under experiment, the steers in lot 1 were fed 5 lbs. meal per head per day, those in lot 2, 7 lbs., and those in lot 3, 9 lbs. This was to be increased 1 lb. per animal every four weeks, but, for reasons not quite in consonance with the judgment of the writer, it was increased a little faster than that. On February 10th, a pound of oil cake was added per animal per day to the other meal, and on March 16th a second pound was added. On May 11th the maximum amounts of meal fed had been reached. These were 10, 12, and 14 pounds respectively per animal per day.

The average amounts of meal fed per day per animal throughout the experiment were, for the steers in lot 1, 8.58 pounds; for those in lot 2, 10.48 pounds; and for those in lot 3, 11.94 pounds. But it must be borne in mind that some corn was fed in the ensilage given as mentioned below, but probably not more than 2 pounds or 3 pounds per day. The meal fed consisted of bran, oats, barley and corn, equal parts by weight, until March 16th. It was then changed to bran, barley and corn, in the proportions of 1, 1 and 2 parts respectively. The fodder consisted of corn ensilage of somewhat less than medium quality, and native hay of a very inferior quality.

The feed was charged at average market values in the state, which were very low at the time. These were as follows: Bran \$6.50 per ton, oil cake \$14.00, native hay \$3.00, corn ensilage \$1.00, oats 14 cents per bushel, barley 16 cents and corn 18 cents. But the charges for grinding raised the oats to 16½ cents, the barley to 18½ cents and the corn to 20½ cents per bushel.

These prices, low as they are, are more, in some instances, than was actually paid for the feed. Bran, for example, was bought at the Minneapolis mills for \$4.50 per ton, and, in some remote parts of the state, it was being used at the same time for fuel. Market values on the feed, therefore, must have been dangerously near the line of the cost of production.

The average weights of the steers in the different lots, when put under experiment, were 1037, 1055 and 1047 pounds respectively. The average weights, at the close of the feeding period, were 1284, 1314 and 1277 pounds respectively. The maximum of gain made by the steers in lot 1 was 741 lbs., by steers in lot 2, 776 lbs., and by steers in lot 3, 692 lbs. The average daily gain made by the steers in lot 1 was 1.65 lbs., by those in lot 2, 1.72 lbs., and by those in lot 3, 1.54 lbs. These were only moderate gains but they are as much, probably, as may be looked for from feeding when the hay is inferior and for so long a period of feeding. In any event, the fact is significant, first, that the steers in lot 1 made a net increase of 49 lbs. more than those of lot 3, although the latter were fed daily 3.36 lbs. more meal per animal.

The feed fed to the steers in lot 1 cost \$2.49 less than that fed to those in lot 2, and \$3.66 less than that fed to the steers of lot 3. Had the prices of feeds been normal the contrast in the cost would have been much greater. The average daily cost of the feed fed was 5.80c. with the steers in lot 1, 6.40c. with those in lot 2, and 6.66 with those in lot 3. These figures contrast strangely with the cost of feeding steers in Ontario and certain of the eastern states as detailed in bulletins in years gone by, when, in some instances, the daily ration fed cost from 18c. to 21c. The average cost of making 1 lb. of increase was 3.55c. with the steers in lot 1, 3.72c. with the steers in lot 2, and 4.37c. with the steers in lot 3. As the selling price was 4.10c. per pound, each pound of increase made by the steers in lots 1 and 2 was worth more than it cost to make it, notwithstanding the abnormally low price obtained for the meat.

The profits made on the steers of the respective lots, with-out shrinkage being deducted, was \$16.52, \$15.68, and \$10.97 respectively. Accounting for the shrinkage it was reduced to \$10.21, \$9.20, and \$4.70 respectively.

The net profit per animal was \$2.68. Such an outcome under the conditions of sale and purchase was almost surprising. One lot of the steers, namely, Herefords, cost more per 100 lbs. than they sold for. And the mean difference between the buying and the selling price was only 40c. per 100 lbs., and had the steers been valued, when the experiment began, on the basis of shrunken weights, it would have been considerably less.

The profit was, indeed, small, but it must be remembered that it was an off year in feeding. Many of those engaged in it lost money. It is what is made in the average of years that counts, and that forms the basis of the profitable character or otherwise of a business. We will reach averages in due time. In the meantime, the great point in the experiment is not to be lost sight of; that is to say, the fact first, that the steers in lot 1 made a higher average gain per day than the steers in lot 3, although they were fed 3.36 lbs. less meal daily while making it; and, second, that because of this they made the said gain at a less average cost of .82c. per pound.

In the breed contest the Galloways stand first. The average weight of the Galloway, Shorthorn, and Hereford grades at the beginning of the experiment was 1,012, 1,114, and 987 pounds respectively. The average increase in weight per animal was 259, 240, and 238 pounds. The average cost of feed was \$9.38, \$9.91, and \$9.06. The average cost of making 100 lbs. of increase was \$3.62, \$4.18, and \$3.84, and the average net profit was \$9.52, \$6.62, and \$7.91.



Soil Humus.

This important subject is treated of in Bulletin 320, North Dakota station, which opens with the following statement:

"The matter of humus in the soil is attracting the attention of all thoughtful farmers, and many are asking for information and how to prevent its loss, or how to increase soil humus. An attempt will here be made to explain what is meant by the term soil humus, and in what way its presence in the soil is beneficial. Our statements are based in part upon our own investigations and in part upon results drawn from data of other stations." A few definitions and explanations may assist in better understanding what may follow.

That portion of the earth that is cultivated for plant growth is the soil. It is made up of mineral and organic matter. The mineral consists of lime, potash, phosphates, iron, magnesia, aluminum and various other minerals of less importance.

The organic matter includes everything that once existed as vegetable or animal matter.

Volatile matter consists of the moisture, gases and organic matter, all of which can be driven off from a spadeful of soil by heating it or burning it.

Humus is that part of the organic matter in the soil which has partially decayed, such as leaf mould, rotten roots and blades of grass, clover or peas. Rotted manure is rich in humus. Unrotted manure or green crops plowed in soon make humus by rotting down in the soil.

The opinion seems to be gaining ground that much of the available plant food is the portion in the humus, and as the humus increases in the soil the potassium, phosphoric acid and other mineral products existing in the soil in insoluble forms not suitable for plant food are taken up by the humus to form new compounds better suited to nourish the growing plants.

In eight determinations of North Dakota soils, 41 per cent. of the phosphates was found in the humus, and the proportions ranged from 10 per cent. to 91. Of the nitrogen from 46 to 80 per cent. of the total was found in the humus, and on an average 61 per cent.

What becomes of this nitrogen when the humus is destroyed by decay? It goes back into the atmosphere, or is washed into the rivers, and so carried out to the ocean. In these ways five pounds of nitrogen are lost for every pound used by the growing crops.

If, then, the mineral matter taken up by the plants and the nitrogen are drawn largely from the humus of the soil, it will be seen how important it is to maintain well the supply of organic matter in the soil, that it may be transformed into humus as needed by the plants under cultivation. Continuous wheat-growing is a process destructive of humus and of all organic matter in the soil. Not that the wheat uses up such large quantities, but, under conditions of wheat-growing as generally practised in this state, there is a rapid decay of organic matter, nitrification under these conditions being very rapid, and the products escape as gases into the air and are washed out of the soil, or, in case of the mineral products, phosphates, etc., they combine in such forms as to be no longer readily available for feeding the plant.

An acre of soil to the depth of one foot weighs about 3,225,000 pounds, or 1,600 tons, and some soils as much as 1,800 tons per acre. Experiments have shown that soils containing the most humus hold the most moisture, are warmer, looser, mellow, most easily worked, and most fertile.

Following is a summary of this important bulletin on soil humus:

1. By twenty years of wheat-growing from 40 to 60 per cent. of the organic matter of our soils have been lost.
2. For every pound of organic matter that has gone to furnish its nitrogen to wheat five pounds have been lost.
3. Many of our soils that originally contained from 8,000 to 10,000 pounds of nitrogen per acre to the depth of one foot now contain from 3,000 to 6,000 pounds.
4. By the loss of humus our soils have become less retentive of moisture, and give it up by evaporation sooner than when they were well supplied with humus.
5. Bare summer fallowing and burning of the wheat stubble destroys large quantities of organic matter and humates.
6. To keep the supply of humus in the soil we must imitate nature and grow for the present at least one year in five a grass crop on our land.
7. By keeping up the supply of humus in the soil, the crops will feel the effects of drouths less than in soils poor in humus.
8. Clover would be an ideal crop to maintain the humus in the soil and to aid in collecting nitrogen from the air, but any grass will serve the purpose of supplying humus, and Bromus inermis has done well in this state, and may be used.



Danish Tuberculosis Law

The Board of Agriculture have received through the Foreign Office a translation of a law passed by the Danish Government with the object of combating tuberculosis in cattle. Under this law provision is to be made in the annual budget for £5,555, to be placed at the disposal of the Ministry of Agriculture, in order to assist proprietors of beasts who wish to make use of tuberculin as a diagnostic means of combating tuberculosis among their cattle, provided that the injections are given in accordance with the regulations fixed by the Ministry. Part of the grant may also be given as a supervision to cattle-breeding associations with the same view. Live cattle can only be imported *via* certain stations fixed by the Ministry of Agriculture. Immediately after importation the cattle are to be tested at quarantine stations with tuberculin by the veterinary police, such tests to be completed within five days of landing at latest. Animals which show no reaction may then be handed over to the owners for their free use; animals which have reacted must either be refused admittance or slaughtered under the direction of the veterinary police. The expense of establishing the neces-

sary quarantine stations and the cost of the tuberculin test will be defrayed by the Government. Animals imported exclusively for slaughter need not be subjected to the tuberculin test nor placed in quarantine, but must, after being marked, be taken to a slaughter house. They may, however, with the permission of the Ministry of Agriculture, and after marking, be taken direct to a cattle market under the control of the veterinary police, from the market they must be taken to the slaughter house. Slaughter must follow within ten days of their arrival in Denmark. The above provisions regulating the importation of cattle came into force on June 1st, 1898. Cows attacked by tuberculosis of the udder must be slaughtered in accordance with the law. The proprietor receives as compensation one fourth of the value of the carcase, calculated according to the current price and its weight. If any portion of the meat is declared by the veterinary officer to be unfit for human food, the owner further receives one half the value of such part.

Dairies will not be allowed to deliver milk or butter-milk as food for animals unless it has been previously heated to a temperature of 185 Fahr.: but exceptions may be allowed if unforeseen accidents prevent such heating, though the customers must in that event be warned. This provision does not come into force until June 1st, 1899. When the churns are cleaned all slime must be burnt. Milk and butter-milk may be imported from abroad only after satisfactory proof that such products have been heated to 185 deg. Fahr. The Ministry of Agriculture may dispense with this prohibition under special conditions.

Infractions of the law are punishable by fines which go to the State. In the case of milk and butter-milk sold in contravention of these provisions the goods are confiscated, and the proceeds of the sale of these products go to the treasury of the Commune at Copenhagen, if the case is within the limits of that town, and to the poor-box in other localities.—*The Dairy, London, England.*

Prince Edward Island Column

(By Our Regular Correspondent)

The wheat crop of Prince Edward Island is a total failure, and the causes are attributed to the *weevil* and *rust*. Never before in the history of the island was such a quantity of land put under wheat, and the prospects of an abundant yield were never better; but such was not to be. About a month ago the *weevil* attacked it and then the *rust*, and its sway seems to have included the whole island, and, with the exception of a few fields, it is fit for nothing. Fully one-third of the loss can be assigned to the *weevil* and the remaining two-thirds to the *rust*. Wherever White Fife was sown it appears to have not been so badly affected, but the White Chaff will not yield a grain to a sheaf. It is said that the rust arises from spores which grow on a plant called the ivy, and in wet weather these germinate and attack the wheat. However true this is, your correspondent cannot vouch for it. But the damage has been done, and it means that every farmer, to a man, will have to buy his flour for the next twelve months; indeed, some are even now contracting for their year's supply, and they are in the right of it, as it will doubtless be more expensive later on.

Agricultural News and Comments

In Great Britain parti-colored horses seem to be becoming more common than formerly. Piebalds and skewbalds are now frequently seen in the teams of the various driving clubs, as well as in the tradesman's vans for purposes of advertisement. They seem to give a "flashy" air to the equipment. Should there be a distinct call for parti-colored horses, it will be a severe task for the breeder to keep up the supply. He will not only have to study form and action, but also markings.

Exhaustive experiments made at the Manitoba Government Dairy School last winter goes to show that the average per cent. of fat lost in the skim-milk by deep setting cans is .09 per cent., while the loss by the separator was but .9 per cent. Now, take a herd of ten cows milking 300 days, and giving on an average fifteen pounds of milk per day, which is not large, and equals 45,000 pounds milk. A loss of .9 per cent. fat in the skim-milk means 405 pounds of butter-fat. Add one-tenth for over-run from churn equal 449 pounds of manufactured butter, which can be sold for at least fifteen cents per pound, and would come to \$67.35. There are many separators that can be purchased for that amount of money, and if the separators are taken care of they will last many years and save money every year, at the same time saving labor and insuring a better quality of butter, whether made at the farm or at the creamery. Manitoba is an excellent dairy country; there is not better in America, and we are looking forward to great results for the future.

CORRESPONDENCE

What a Prominent Western Breeder Thinks of "Farming"

To the Editor of FARMING:

I venture to congratulate you on the improved appearance of FARMING. Your Exhibition Number was a decided success. Such a valuable collection of articles is rarely seen in an agricultural publication. The editor who knows that his readers want such articles, and also knows how to get them, should be voted a genuine success in his line of work.

FARMING seems to assume that the farmer is a man of intelligence and sense. It treats him and his business seriously. This is the proper attitude. It is better to write "up" than "down." Kindergarten methods may do for some farmers, but it seems to me that your method is much better. Your readers are at once business and professional men.

Again I congratulate you, and wish you hosts of subscribers and abundant success in all ways, worthy your best ambitions.

D. W. WORKING.

Denver, Colorado, Sept. 24, 1898.

NOTE.—Mr. Working is a prominent rancher and stockbreeder of the Western States who has been a reader of FARMING for some time.—Ed.

What They Think of It

The Exhibition number of FARMING is a sixty-page edition replete with valuable matter touching upon all phases of agricultural affairs. FARMING is one of the best exchanges that reach our table.—*The Outlook, Middleton, N.S.*

The Exhibition number of FARMING is one of the finest issues of this or any farm publication which has yet made its appearance in Canada. FARMING is a weekly publication, devoted to the interests of farmers and stock-raisers, and is a reliable and useful periodical. The issue now on our desk contains sixty pages and cover, gotten up in a different form from that which has been issued for the past year. The front cover page of this issue is one of very striking design, and the entire contents are gotten up in attractive style. The advertising is liberal and useful and the articles full of interest. There are many illustrations in this number which make it a handsome one. We congratulate the publishers upon getting up this magnificent number.—*Midland Free Press.*

A Creditable Number.

FARMING for last week was a number of special interest and unusual excellence. This ably edited agricultural journal was never in a better position to serve the farmers of Ontario than at the present time—a fact which the special "Exhibition number" issued last week amply proved. This number contained sixty pages in addition to a handsome illustrated cover. It was filled with a great variety of useful and interesting information concerning every department of the farm—the articles being handsomely illustrated. FARMING, as an agricultural paper, is a credit to the Province of Ontario, a credit to its editor, and equally a credit to its publishers.—*Owen Sound Sun.*



AN ONTARIO COUNTRY ROAD.

THE SOUTHERN FAIR.

(Reported by H. C.)

The Brantford Southern Fair of 1898 will leave behind it many favorable impressions upon the minds of those who had the pleasure of attending it. On the whole it was a decided success, the weather was all that could be desired, with the exception of the last day, when a very heavy rain prevented people from attending and reduced the receipts to about \$90 when it should have been \$1000.

The board of directors may well feel proud of the exhibition of live stock. No finer parade of animals could be found at the great exhibitions. In the horse line, there were carriage horses that were prize-takers at Toronto, both in the single and double classes. From Woodstock, Galt, Simcoe, and Guelph, came some splendid specimens of horses. Because of the policy of the directors in selecting expert judges to award the prizes, there was no complaints. I think Mr. S. B. Fuller, of Woodstock, had his share of work to do in judging so many classes as were allotted to him, but he was equal to the task and acquitted himself with honor.

In the cattle department the Shorthorns were well represented in the herds of R. & S. Nicholson, Sylvan, and Capt. Malloy, and Galloways in the herd of A. M. & Robt. Shaw, and a few head from T. L. Jones, of Burford, both of which were at the Industrial. One fine herd of Polled Angus was shown. Holsteins, Ayrshires, and Jerseys were out in full force, and were well represented by J. Rettie, N. Dymont, T. Brooks & Son, W. M. & J. C. Smith, D. G. Hanmer & Son, M. E. Stratford, J. H. Smith & Son, and E. J. Wesley. Cattle exhibitors may well feel satisfied with the accommodation which has been provided for them. New stables have been erected, equal to any in the Dominion. The society intends, another year, to erect as good accommodation for horses, sheep, and swine as their means will admit.

The exhibit of sheep was good in every class. In Shropshires D. G. Hanmer & Son were out in full force, as was also Capt. Malloy. In Oxford Downs J. H. Jull, Mount Vernon, was to the front with a lot of imported ones. He made his mark at the Industrial and London fairs before coming here. Our old esteemed friends, John Jackson & Sons, of Addington, were present with their excellent flock of Southdowns, winning honors wherever they go. Associated with him were the Telfer Brothers, of Paris, who showed a very good lot of Southdowns. In Cotswolds J. Park & Sons, of Burgessville, who won laurels at Toronto, exhibited here. The exhibitors of Leicesters at Brantford were not at

the Toronto fair, but, at the same time, would have shaken the old timers up pretty well had they shown there. They were John Wright & Son, of Oakland, and John Orr, of Galt. We hope to see them to the front in the near future.

In the swine department we found T. A. Cox, Brantford, with his Berkshires, who had just arrived home from the Quebec and Toronto fairs, winning his share at Toronto and carrying off nearly all the prizes at Quebec; J. E. Brethour with his Yorkshires was there fresh from London and Toronto laden with honors; and Norman M. Blain, a new exhibitor, but with lots of pluck and energy, who showed for the first time this year at the Industrial, but not without honors, in the largest class of swine shown there, namely, the Tamworths, capturing two red tickets. Better results followed him at London. T. Brooks & Sons, and R. & J. Laurie, Wolverton, were also strong exhibitors in the Tamworth classes. In Chester Whites, Brooks and Jarvis were competitors for honors, the latter winning a number of prizes. He is also a young exhibitor, who deserves credit for pushing himself to the front. There was a large exhibit of what is termed by the pork-packing firms "singers," young hogs most suitable for the bacon trade, and that weigh about 180 lbs.; lengthy pigs with thin shoulders.

Liberal prizes were offered in this section, which brought out a large number of exhibitors, about fifteen in all. The judges were from Ingersoll and Toronto packing firms, and the prizes in each case going to cross-bred hogs.

The poultry building was well filled with choice birds, many of them being winners at Toronto. A fine collection of fowls was shown by T. A. Cox, but arrived too late from Quebec to compete for prizes. The machinery hall was well filled with all up-to-date machinery. Carriages, buggies and cutters in abundance were exhibited by the McLaughlin Carriage Company, A. D. Perly, agent; and A. Spence & Sons, of Brantford. The latter have been exhibitors for nearly forty years, showing work in all stages.

Brantford can boast of its manufacturing establishments, the Massey-Harris firm, with all kinds of farm machinery, the Verity Plow Co., the Cockshutt Plow Co., the Waterous Engine Co., the Buck Stove Works, the Courtland Carriage Co., the Gould, Shapley & Muir, windmills, etc., the Gould Bicycle Co., and, last, but not least, the Farmers' Binder Twine Co. They are a host in themselves.

The Southern Fair Board have reason to be elated over the success of the fair for 1898, and the exhibitors had no reason to complain

in the manner in which they were treated in the awards. In every class good, practical men were selected as judges, and mostly from a distance. Many visitors, however, and especially farmers, were not used right, I think, in being deprived from seeing the horses shown, unless they purchased tickets for the grand stand. The true principle of an agricultural fair should be that all the judging should be done where the interested parties can witness it without paying anything extra. Then let the board charge what they like for the attractions. Unless this grievance is removed it will, to some extent, tend to injure the fair. People who are interested in the judging of stock are, as a rule, not favorable to the attractions, and, consequently, they are prevented from witnessing the most interesting part of the show to them, unless they pay extra to see it, which they are very loth to do sometimes. This could be remedied by having the grand stand and ground in front of the stands open while the judging is taking place and by not having the attractions and judging going on at the same time.

OTTAWA EXHIBITION.

(Continued from last week.)

Clydes.—Five aged horses paraded before the judges, who were Geo. Moore, Waterloo, and George Grey, Newcastle, and a better lot have not been in any ring in Ontario this fall. The public were specially interested in this class and lined the ring for hours watching them and speculating on the probable winners. Graham Bros., Claremont, got first prize for Simon Yet [2390]; he is a big chestnut with white markings, and while his walking is but medium, when he trots he takes the eye at once. His gay, free style is very attractive. He is a big horse with a great top—well ribbed and thoroughly finished. He has good bone, especially behind, but is a trifle plainer below the knee in front. Second place went to Robert Ness, Howick, for Fullerton, recently imported. He is by the great prize horse, Prince of Kyle, and his dam by Go Ahead—the horse imported by Galbraith Bros. long ago and again exported to Scotland, where he was worth more money than in America. Fullerton is a good all-round horse with broad chest and grand legs and feet. He is extra good at the ground. He is a brown horse with very little white—and some might think a trifle bare of feather. Third prize went to Erskine McGregor, a horse imported by N. P. Clark, of St. Cloud, Minnesota, and shown at the spring show in Toronto two years ago. He is a big-bodied, thick horse with dark points, and while not nearly in such condition as the winner, was preferred by some of the on-lookers. He moves well and is a capital horse but not as gay at the trot as the winner. Robert Ness got fourth place for Lawrence Again, the champion of last year at this show. He was winner as a two-year-old at Edinburgh, Scotland, and has worn well. He is still a clean legged show horse which can be said of very few horses at his age. He moves well and has made his mark as a sire. Graham Bros. had the fifth horse—well made and of good form, but badly marked and not equal in size to the others shown. For three-year-olds Robert Ness showed Ploughboy, well named, a chunky, thick horse with heavy bone, but plain as becomes a tiller of the soil. A good sort of horse but lacking the superior style of the crack winners. He is by Darnley Erskine and his dam is rich in Prince of Wales blood. W. C. Edwards, M.P., had the winning yearling, with James McGee second. Graham Bros. had the winning mare and foal, with Robert Ness winning in the other female classes with some good ones. In yearling fillies W. R. McClatchie, Gatineau Point, had the only one shown. Geo. Clark, Ottawa, had the first prize team of mares—big heavy-draught ones that were shown in late years while the property of the McKay Milling Co. They were bred east of Toronto. A smaller pair were shown by Robt. Ness and got second place. The yearling filly was given the gold medal as best mare any age, and

Robert Ness won with Lawrence Again for stallion with three of his get. The class as a whole was not equal to the Clydes shown at London and strange to say none of the London owners came to this exhibition. Had they done so there would have been a grand show of Clydes.

CATTLE.

The exhibit of cattle at Ottawa was not as large as at Toronto, but exceeded the numbers at London and was of a specially select quality. The Toronto stock divided; the bulk going to London, but several very good herds went to Quebec. The best from London met the Quebec exhibit again here and in some cases the Toronto awards were reversed and put where they should have been at first. *Shorthorns* were a small class. Capt. T. E. Robson, of Ilderton, near London, had his herd headed by the Cruickshanks bull, "Moneyfuffel Lad," the winner everywhere this year. He is in great shape and going well, carrying gayly his immense size. His white 3-year-old heifer, "Mysie's Rose," was the best in his herd. She is a sweet, evenly-fleshed heifer of great substance. J. T. Routledge, of Georgeville, Que., had the winning Shorthorn cow from Sherbrooke, but she got only third place, she is a good sort from the old well-known Sanspariel family. Jas. Leask had a promising youngster in the yearling bulls class. *Herefords* were shown by H. D. Smith, Compton, Que. His has been the winning herd this year. His aged bull is a noble animal and the whole herd the best in Canada. *Galloways* were a stronger class in numbers than any other of the beef breeds. Here met D. McCrae, of Guelph, and John Sibbald, of Owen Sound, who had parted at Toronto, the former going to London and the latter to Quebec. The former had the best of the prizes. The veteran bull, "Canadian Borderer," put back to third place at Toronto, was adjudged first place here, easily beating the Toronto winner. He is much better haired than his rival, has a good head and fine quarters, a heavy rib well fleshed and with much shorter legs. His rival is fatter but has a very plain head and inferior quarters, but has a good barrel and back. In cows John Sibbald won first and third with "Adela of Flamboro," a three-year-old, sandwiched between. A good well-shaped two-year-old, *Semiramis* 26th, won the sweepstakes and the gold medal went to D. McCrae for the best herd. *Pilled Angus* were also a well-contested class between Walter Hall, Washington, and James Bowman, Guelph. The latter won with his young bull and the former cleared the decks with first, second and third for a grand trio of cows, 3, 4 and 5 years old. The younger animals were not so good. Wat. Hall won the medal for best herd. In *Devont* W. J. Rudd and his son, Ralph R. Rudd, were the only exhibitors in the once popular South of England reds.

Grade Beef Cattle had a good lot out, shown by James Leask, Greenbank, all high-grade Shorthorns. In all these classes the awards were made by the well-known Shorthorn breeder of Glengarry—R. R. Sangster.

Ayrshires were the class of this cattle show. There were seven herds, and in the long line all the animals but two were light in color—white mostly, with red spots. The judge—W. W. Ballantyne, Stratford—had a hard task in making the awards, but he took great pains to examine every animal carefully, and, while not pleasing everybody, his awards were conceded to be just, and made in such a way as in very few cases to leave any ground for adverse criticism. In herds, D. Drummond was 1st, R. Reford 2nd, W. Stewart & Sons 3rd, J. N. Greenshields 4th, R. Ness 5th. The well-known Steacy herd of Brockville was not represented, but Mr. Steacy was an interested spectator, and had strange stories to tell of the judging at Syracuse at the New York State Fair. In cows there was a large exhibit; ten were drawn, and then half of these sent in, and ultimately the awards went—1st to J. N. Greenshields, 2nd to W. Stewart & Sons, 3rd to R. Reford, 4th to D. Drummond, and 5th to R. Reid & Co., Hintonberg, Ottawa. These were all light-colored

cows, with specially good, well-set vessels. The three-year-old cow class gave the first prize to D. Drummond for a very good, typical, white-spotted cow, with deep flank and good udder. Second went to R. R. Ness for a dark cow—almost black, the old-fashioned color, but modern type of frame, with well-set udder and black teats. Mr. Stewart had third for a cow of a different class—a wider, rougher, roomier cow, down in the back, but carrying a vessel well placed, and of good shape. The class for the two-year-old heifers was a "record" one. Such a lot of beautiful young cows has very seldom been seen in any ring. First and second went to the Reford herd. In the new class for dry cows there was a good turnout. This is a very popular class in Scotland, but one that has not been much tried here. Robert Ness was first with a splendid specimen of the breed, not large, but with beautiful lines both above and below—short-legged and wedge-shaped. R. R. Ness had eighteen head, and won first for his two-year-old bull. Wm. Wylie, Howick, Que., had out a herd of ten head, and, looking them over in the stalls, one would say that they were a fine lot and likely winners, but they were not able to capture a prize, though a likely serviceable herd. R. Reid & Co., Hintonberg, had fifteen head, and won several prizes. D. Drummond, by winning the herd prize, came to the front in this show. At Toronto he was beaten by the Reford herd, his bull, "Kelso Boy," only getting fourth place. He was out of sorts then and not feeling well; here he was in fine fettle, and won first and sweepstakes. He is by Silver King, out of Maggie Mitchell of Barcheskie. Drummond has a grand yearling heifer in young Nellie Osborne, first everywhere both last year and this. She promises to rival her mother in her show-yard record. James Yuill & Sons, Carleton Place, had out a most useful looking herd, and won several prizes, while Wm. Stewart & Sons, Menie, and J. N. Greenshields, Danville, Que., had herds that have already been mentioned fully in report of former shows. There were some new exhibitors out with one or two animals, but none did much better than Jas. Callander, North Gower, who brought out two young bulls and won two prizes—a second and a third. Altogether the Ayrshire exhibit was the best in the cattle department. In the class for Grade Dairy Cattle, Ayrshire grades were first, and others nowhere. In this class R. R. Ness was a strong first, with J. G. Clark, Ottawa, a good second. Last year Mr. Clark was the winner with a beautiful herd of Ayrshire-Shorthorn grades, but he had the misfortune to have an outbreak of tuberculosis, and promptly slaughtered suspected animals. The sweepstakes cow of last year was here, but did not win this time. R. Reid & Co. had the winner—a good cow red and white, showing much Ayrshire, though her dam was a Shorthorn grade. Mr. Clark had several winners in the younger classes—one heifer, beautifully mottled with red, black and white, is very promising.

Jerseys brought out the herds of Miller & Sibley, Franklin, Pennsylvania, and W. E. H. Massey, of Toronto. The former were most fortunate, winning several events in better style than at former shows. Mr. Massey came first for two-year-old bull, but his beautiful imported cows were not so fortunate here. It was a surprise to many to see the cows which won places at Toronto, and which seemed to be of beautiful type, placed behind the same animals which were beaten at Toronto.

Guernseys.—J. N. Greenshields, of Danville, Que., had out a fine lot of Guernseys, the same shown in Toronto. These include part of his recent importation from the Channel Islands. W. Butler & Son, Dereham Centre, was also an exhibitor.

Holsteins were out much as they were at Toronto. G. W. Clemons, St. George, A. & G. Rice, Currie's Crossing, and C. J. Gilray & Sons, Glen Buell, having their herds here same as in Toronto. There were not many changes in prize list till the cows were reached. In aged cows A. G. Rice came

first, while at Toronto he did not get beyond fourth place. There were some other minor changes in the list, and a few outsiders came in for a prize or two, J. Drummond, Kilmaurs, getting third for aged bull and R. W. Sheppard, Como, getting several prizes. There was a good deal of interest shown in the contest in the dairy test. As will be seen by the table, A. Hoover, Jr., was an easy winner with his cow, Emery Queen, seven years old, three weeks calved. She is not a show cow, but is a great performer. Her sire was Bailey 2nd Artis Clothilda. Others started in the contest, including one from G. W. Clemons' winning herd, but these were withdrawn before the close of the contest. The official figures given were:

	Lbs.	Solids.
A. Hoover, Jr.....	72½	8.19
Gilroy & Sons.....	60½	6.80
A. & G. Rice.....	60½	6.45
J. Drummond.....	44	4.54

Prizes were here given for Quebec Jerseys, or "La Race Bovine Canadienne." These had to be registered in the Herdbook of the Quebec Government. Two herds competed. They are dark-colored, black with brown stripe down back and brown markings. Not large, and of a somewhat Jersey type, but lacking the fullness of eye of the Island breed. They may prove, however, to be capital milkers, but do not show the udder development of some of the other milking breeds. There was also a very interesting exhibit of Dexter Kerry Irish cattle. They, too, are a dark-colored cattle. "Not much bigger than donkeys, they yield a surprising quantity of milk which is of superior quality. They are mostly kept in the hilly counties of Ireland, and chiefly in County Kerry." These cattle are for Huntlywood Farm, and are shown by Senator Drummond, Beaconsfield, Que. The red bull, Bantam, was bred by the Prince of Wales, and was champion of the breed at the Royal Agricultural Show at Manchester. He is a two-year-old, and in appearance is true to name. One has almost to laugh at first sight. He is a bantam in beef. This breed may be either black or red, with a little white. With the bull four heifers and two calves were shown, nearly all black, and making a quaint little herd. They are recently imported, and will give an added interest to our cattle shows. Senator Drummond has shown commendable enterprise in importing this stock.

The trend of popular favor still seems to be with the dairy breeds of cattle. They are steadily increasing in numbers, while the beef breeds are hardly holding their own. Shorthorns have done well for their owners the past year, but are not as many as they were twenty years ago. Ayrshires have taken their place in many sections, and are still steadily spreading. This because of the advance in dairying in Canada the past few years. Galloways seem to be holding their place, and sell well for the North-west. Herefords and Angus are almost stationary. Jerseys have had a considerable addition during the past year. The many imported animals shown are an evidence of this. Holsteins seem unrivalled for quantity of milk, but have hard work to hold their own with the Ayrshires in popular favor for cheese-making, but they certainly take the lead for abundant milk-production, as shown by various dairy tests.

PIGS.

The pens were all filled and additional ones had to be made on short notice to house the exhibit. Berkshires were well brought out by George Green, Fairview, who got first and second in almost all the classes. Geo. Robb, Gatineau, won for best litter of 5 pigs. In improved Yorkshire, Joseph Featherstone, M.P., of Streetsville, was the leading owner, but A. W. Ross, Douglas, was able to capture several prizes from such a noted exhibitor. He got first for aged boar, second for boar under 6 months, and first for best litter of 5 pigs under 3 months old and suckling. In Chester Whites W. Butler & Sons, Dereham Centre, were exhibitors, and in Poland Chinas W. H. Jones, Mount Elgin, was the winner.

In Duroc Jerseys, Tape Bros., of Ridgetown, were the largest winners, but W. Butler & Sons captured the red ticket both for aged boar and sow. There was a great show of Tamworths. A local paper called them "the long-snouted, slab-sided, red-haired porkers." There were many exhibitors. R. & W. Conroy, Deschenes, Que., had four firsts. This included the best litter and the best pen. W. Butler & Sons, Dereham Centre, had three firsts and several seconds and thirds. J. A. Richardson, of South March, had first for aged boar. R. Reid & Co., Hintonberg, the Ayrshire breeders, had two firsts and some other prizes in this class. Tamworths seem to be spreading over the country and winning admirers in many parts. This, perhaps, because the pork packers favor so much the long sides and mottled meat which they yield and which is needed to make the best quality of export bacon. Canada should keep to the front in this growing export trade.

SHEEP.

The pens were full and the overflow had to be housed in temporary pens put beside the track. The longwools made an extra good exhibit headed by the Cotswolds, which the judge, Richard Gibson, of Ilderton, said were the best Cotswolds seen for years. A. J. Watson, Castlederg, was the leading exhibitor, and he had out some of the royal winners in England this year. His pen of English-bred lambs were very superior; they were from the flock of Russell Swanwick, Cirencester, bred on the college farm there. Arsine Denis, St. Norbert, Que., had a pair of aged rams good enough to get first and second places. He had also the second prize shearing ram, but his exhibit was not at all equal to that of Mr. Watson.

Leicesters were shown by John Kelly, Shakespear, who had the only flock shown, but he has been one of the leading exhibitors in the white-faced border breed for many years, and is still very near the top, especially with his lambs, which are always brought out in fine style as if they had been fed on more than their mothers' milk.

Lincolns.—Captain T. E. Robson, the well-known Shorthorn breeder of Ilderton, Ont., showed the only Lincolns on the ground. In Southdowns there were two flocks and some fine specimens of the hardy grey-faced beauties of the English downs. Senator G. A. Drummond, Beaconsfield, Quebec, a leading exhibitor in this class, divided the prizes with R. Shaw & Sons, Glandford Station, Ont. In Shrops, the well-known show flock of John Campbell, Woodville, was here and had to meet a flock from Quebec Province shown by Albert Chartiers, St. Paul's. The latter captured several tickets. Smith Evans, Gourock, Ont., had all the Oxford Downs shown. He is specially pleased with his ram lamb recently imported, bred by Wm. Arkell in England, and a winner at the last Royal Show there. This lamb is a grand one—level and good, with a back seldom equalled in any breed. Dorset Horns were shown by James Bowman, of Guelph, who won 1st for aged rams, and by J. A. MacGillivray, Temple Building, Toronto, who is the leading breeder in Canada of these hardy sheep. His Uxbridge flock is well known all over America where Dorset Horns are bred. His shearing imported ram was a winner at the Royal Show in England this year. His ewes were specially good. There was a good turn out of Merinos. These sheep have never become popular in Canada and are confined to a very few breeders. They are hardly ever seen but at the fairs. Robt. Shaw & Sons, Glandford Station, won most of the prizes, with D. Cummings, Russell county, coming in for a few thirds.

There was a great show of poultry—the best ever seen on the Ottawa grounds—say some of the exhibitors. Victor Fortier, St. Therese, Que.; W. H. Reid, Kingston; J. W. Neilson, Lyn; C. J. Daniels, Toronto; G. S. Oldrewe, Kingston, and R. B. Millard, London, were exhibitors. There was a very large display of pigeons and pet stock,

the largest that has been seen for a long time. Many local men made good displays.

The weather the first part of the week was clear and cool, a trifle over-cool for a large attendance in the grand stand. By Wednesday it had improved, and that day was a great record-breaker, the grand stand alone yielding \$3,500, while the takings at the gates were the largest in the history of the show. Thursday was a good farmers' day, and the stock exhibit had a great many visitors, several sales being made. In the evening rain threatened, and before the performance was over in the evening a steady drizzle had set in. Rain continued all Friday, and practically spoiled the show for that day. A few straggling visitors, water-soaked, meandered about, and the main building was well filled, but the day was spoilt for the show. Even with one day off the gate receipts equalled those of last year. There were a number of side-shows, some of them fairly good and others much the reverse. These latter hailed mostly from the United States, and were in Canada only for this show. Many of them did a rushing business the busy days. The dairy building was well filled, and there were many entries of butter, both dairy and home-made. The Experimental Farm had a building well filled with products very tastily arranged. Samples of grasses, wild and cultivated, grains, vegetables, etc., etc. The Red Fife wheat of the west was quite an attraction to the farmers. The oats grown on the Experimental Farm were shown, with records of the yield per bushel. A strange feature of this was the White Siberian oat, which in this list was given a very low record, and yet has proved itself the best white oat at the Guelph Agricultural College and by members of the Experimental Union all over Ontario, including those in the Ottawa region. The closing in a downpour was not at all agreeable. Most of the stockmen did not attempt to ship in the rain, but remained over till Saturday. The various vendors of sundries outside had a hard time of it. Tents soaking wet cannot be packed safely, and, while the grounds were not at all muddy, the water was in pools all over the grounds. No special attractions could be utilized, and the directors did the wise thing in leaving Friday a blank day, and making the best of cold water closing to the show. One feature of the show that should be specially mentioned is that there were no races of any kind; not even an agricultural horse trot. The cattle and horses that won prizes paraded before the grand stand, and special attractions were provided, but no races were permitted.

EXPORTING APPLES.

Special attention is directed to the advertisement of Eben. James, Board of Trade building, Toronto, in this week's issue. In an interview with Mr. James our reporter learned the following in connection with the history of the apple-exporting business: Messrs. Woodall & Co. are credited with receiving the first shipment of American apples into Britain. This occurred some sixty years ago and the stock was shipped in a small sailing vessel very unlike our modern steamers; results at that time proved satisfactory and as far as we know this was the beginning of the great trade now carried on in that line. This firm never seems to have lost its prestige and they are now credited with receiving one-third of all American apples imported into Liverpool. A few years ago the business was handled on this side entirely by large speculators, principally from Boston and New York, but Woodall's agent on his annual tour now calls on several thousand growers in the New England States and New York State, who for some years have been shipping their own fruit direct. This firm, until last season, was represented in Canada through their Boston agent who had a man here only during the export season, but Canadian trade has increased with them to such an extent that they have found it necessary to make other arrangements, and for the past year Eben. James

has been their Canadian agent; their methods seem to have appealed strongly to shippers here, and this year their head office has been established in the Board of Trade building, Toronto, not Montreal, as formerly.

Publishers' Desk.

Brantford Business College.—Attention is directed to the advertisement of above college in another column. The principal, Mrs. M. L. Rattray, has had an extensive experience as a teacher and is admirably adapted to the profession. The college has two large class rooms with all modern equipments of a first-class school. The curriculum taught is of a high standard and students may rest assured of receiving all there is to know in book-keeping, arithmetic, commercial law, shorthand, typewriting etc. The fall and winter term is now on.

Practical Education.—When a private institution organized and equipped for the purpose of giving a special course of practical training along educational lines passes the century mark in its registration of new members at the beginning of any session it may safely be regarded as a reliable school worthy of the liberal support it enjoys. Such is the condition of affairs prevailing in the Central Business College of Toronto, and it is most gratifying to note that many of the members of this excellent school from term to term are farmers' sons, who after a few months training along practical lines return to the farm prepared to season their labors with business ideas and to conduct their affairs with greater financial success. No young man should undertake to run a farm without a better knowledge of the commercial affairs of his country than can be obtained in our public and high schools, and no Canadian institution seems to offer better inducements to young people than the school above named, which, with its regular staff of eight teachers and its splendid equipment, is doing so much to impart a sound practical education to its numerous patrons.

Stock Notes.

PROFESSOR J. A. CRAIG, of the Iowa Agricultural College, Ames, intends showing ten fat steers at the Trans-Mississippi Exposition at Omaha this month. These are out of cows with butter records that will average over three hundred pounds. The average weight of these steers is fourteen hundred pounds, and they are not yet two years old. It is among the probabilities that Prof. Craig, after visiting Omaha, may bring this exhibit to the Provincial Fat Stock and Dairy Show at Brantford on November 20th and December 1st and 2nd.

MESSRS. H. GEORGE & SONS, of Crampton, Ont., report that, owing to the large number of sales made from their herd this season, they did not exhibit any of their Improved Chester White swine, showing only a few Tamworths at the Toronto Industrial Exhibition, that being the only fair at which they appeared. They say: "Our herd is in good form, and we do not remember ever having so fine a lot of boars, fit for service, of the true bacon type. Our fall pigs are coming strong and hardy, and we have sixty little fellows ready to ship in pairs not akin."

THE announcement of the twentieth annual sale of purebred stock and poultry at the Ontario Agricultural College, Guelph, on October 29th, has been received. It gives a record of the pedigrees and breeding of the stock advertised. The sale list includes eighteen head of cattle, representing nearly every pure breed; fifteen lots of swine of different breeds, and seven sheep, besides a large number of high class fowls. With one or two exceptions, all the animals offered have been bred by the Ontario Agricultural College, which is a guarantee of their good qualities. Persons desiring to secure good stock should attend this sale.

THE HON. JOHN DRYDEN has recently made some valuable importations of live stock for his farm at Brooklin, Ont. Among these importations, which are now in quarantine, is a Shorthorn bull, nine months old, of a beautiful red color, and of great flesh and substance. Mr. Dryden will place this bull at the head of his herd of Shorthorns, and has named him Collynie Archer, retaining the name of his ancestry. He is got by Scottish Archer, dam Mysia, with a pedigree the same as the noted bull, Marengo, being out of a sister of the dam of Marengo. Among the importations is a shipment of Shropshire sheep, consisting of ten ewes and two rams, from the noted flock of T. Bowen Jones, which is considered to be the best flock in England.

Stock Notes.

STOCK NOTES FROM THE FAIRS.

BY R. R. S.

MR. GEORGE GREEN, of Fairview, Ont., the genial President of the Dominion Swine Breeders' Association, and one of the largest breeders of Berk hirs in Canada, if not in America, was one of the foremost figures at all the Fairs. His record as a prize winner would be hard to beat, and his herd attracted as much attention as any other live stock exhibit shown anywhere. Everyone seemed interested in the Berkshire and remarked on the beauty and symmetrical proportions of the various animals shown. The Berkshire is undoubtedly a favorite with all classes of people. Mr. Green's winnings this year include eleven prizes at the Toronto Industrial, six firsts, four seconds and one third, thirteen at London, comprising seven firsts, including two medals, five seconds and one third, and at Ottawa he was still more successful than at the other shows, securing the first and second prizes in nearly all the classes. This is a record of which Mr. Green may well feel proud.

Mr. J. C. NICHOL, of Hubrey, Ont., had one of the best exhibits of Tamworths at the Toronto Industrial and the Western Fair, London, we have ever seen. He secured the bulk of the prizes at Toronto; at London obtained five firsts and the bronze medal for best herd, besides other prizes. Three of his first and second prize sows under six months were out of the prize sow, Elm-dale Beauty, bred by Mr. Nichol himself. He also had the heaviest three pigs of all herds exhibited. His boar, Amber Luther, 215, got first at Toronto and first at London. This boar has been in active service all his life and is now four years old. Some of his stock have been noted winners, taking first last year out of a class of twenty six. Mr. Nichol is to be congratulated on his success as a breeder of pure-bred Tamworth swine.

MR. SMITH EVANS, of Gourock, Ont., had a fine exhibit of Oxford Downs at the fairs this year and deservedly won a large number of prizes. At Toronto he got seven prizes and at London nine. One of the peculiarities of the show ring was brought out in connection with his shearing ram. This ram was the pick of the first prize pen at the Royal Show at Birmingham, England. It was only given third place in Toronto, but got first at London in his class and also first for the best ram of any age against an imported shearing and an aged ram, both of them taking first in their respective classes. Mr. Evans has a few lambs and aged ewes to dispose of.

MR. G. W. CLEMONS, of St. George, Ont., was the winner of a number of good awards at all the fairs this year. The prize lists show him well to the front as a breeder of pure bred Holsteins. It may not be generally known that Mr. James Kettie's three-year-old cow, Antis Peer's Poem, which won first prize at the Toronto Industrial this year, was bred by Mr. Clemons, as were also the second prize bull calf and the fourth prize heifer calf over six months.

Messrs. JOHN HORN & SON, of Parkhill, also had a fine exhibit of Tamworth, Yorkshire, and Suffolk swine at the Western Fair. In the former class they took the medal for best sow and four of her produce and third on aged sows. In Yorkshires they only had one entry and got one prize, 3rd, for sow under six months. Their Suffolks took all the prizes awarded, including two medals.

MR. FRANK COOK, of Parkhill, Ont., was a new exhibitor of Berkshires at the London Fair this year and had some very good stock. Mr. Cook is a young man, but he is evidently an expert breeder of purebred swine, and will yet make his mark at the Canadian shows.

MR. JAC. McENZIE, of Wanstead, is another of those comparatively new at the business. This year he exhibited Berkshires at the London Fair for the second time and his stock succeeded in carrying off three prizes, one of which was a first. All things come to those who persevere.

MR. E. A. GARNHAM, of Strathfordville, Ont., advertises his valuable farm in Blayham township for sale in this issue. His reason for wishing to dispose of the place is that, being a bachelor, he finds life on the farm monotonous, and he would like to make a change. The farm is an excellent one and offers an opportunity for investment not often met with.

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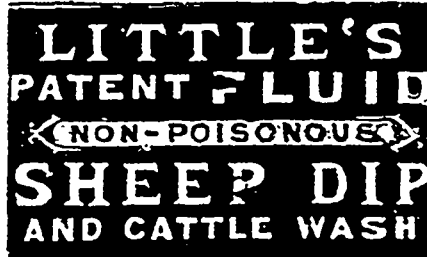
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Canadian Agent for—Woodall & Co., Liverpool; L. & H. Williams & Co., Glasgow; M. Isaac & Sons, Ltd., London. Reference, T. W. H. Dempsey, Bay of Quinte Apple Experimental Station, Trenton.

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FARMER AND STOCK-BREEDER

The best, most complete and attractive Agricultural and Live Stock newspaper. Enlarged to 36 pages weekly; frequent special issues 40 to 48 pages. Illustrations are a specialty, each number containing many of the leading prize-winners, etc. Brilliant and practical articles on the Farm, Dairy, Horses, Cattle, Sheep, Pigs, Poultry, Veterinary, etc.

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Intending purchasers of British Purebred Stock should send us particulars of their requirements, large shipments and extensive connections having given our staff of expert buyers the experience which is indispensable in live stock transactions.

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In the Maritime Provinces devoted exclusively to the interests of the 100,000 farmers in that part of the Dominion. It's a neatly-printed, sixteen-page semi-monthly, officially adopted and endorsed by the New Brunswick Farmers and Dairymen's Association, the Nova Scotia Farmers' Association, and the Maritime Stock Breeders' Association. An advertisement in it will be read by more progressive agriculturists in the three Lower Provinces than can be reached by any other single medium.

Free Sample Copy and advertising rates on application to

CO-OPERATIVE FARMER, Sussex, N.B.



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The Home Repairing Outfit. A complete set of tools for Boot, Shoe, Rubber, Harness and Tinware Repairing. 44 articles packed in a neat, strong box; weight, 18 lbs. Every family needs one. They sell like hot cakes. Price for the complete outfit, \$1.75.

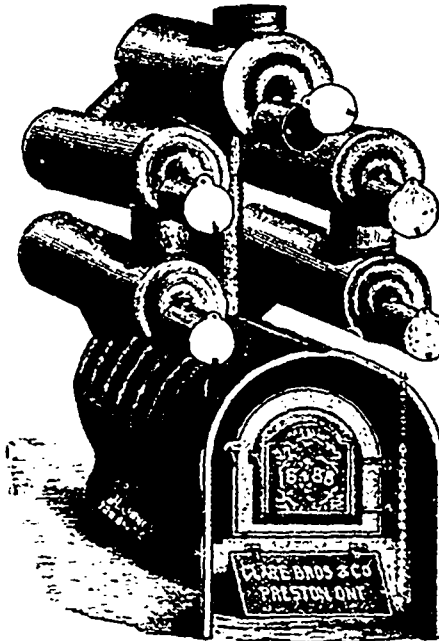
The Bailey Donaldson Co. Montreal, Quebec.

TO SAVE ONE CENT A POUND

on your butter, use the Maple Leaf Churn. It saves time, work and cream, and makes the finest butter.

Butter-makers should study it. Ask your dealer to show it, or write for descriptive circular to the manufacturers.

WILSON BROS., COLLINGWOOD, ONT.



The Hilborn Wood-Burning Furnace. Our Catalogue explains.

WE MAKE A Specialty of Heating

And have placed many thousands of our "Hilborn" Wood Furnaces in country homes. Farmers use only rough and unsaleable wood, and in this way soon save cost of a furnace, to say nothing of the comfort.

We can also give you furnaces suitable for coal or coal and wood, or if you want to heat with hot water we refer you to the

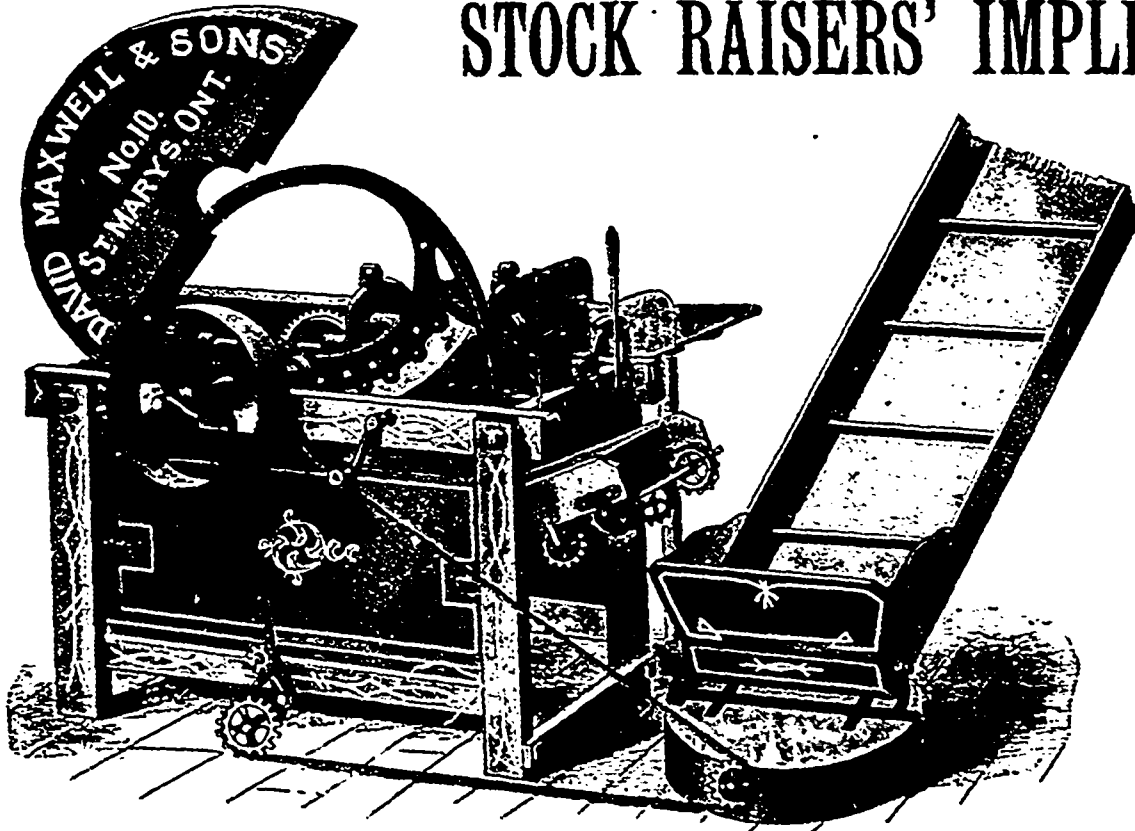
PRESTON HOT WATER BOILER AND STEEL RADIATOR

We guarantee every furnace to work satisfactorily. Would you like to see a list of the homes that we are heating?

We prepare free estimates, send catalogues and full information upon application, and invite correspondence.

CLARE BROS. & CO. PRESTON, ONT.

Branch at WINNIPEG, MAN.



STOCK RAISERS' IMPLEMENTS

Power Ensilage Cutter No. 10

The latest and most modern manufactured.

Unsurpassed for **POWER, DURABILITY, and CAPACITY.**

Made in two sizes, 14 and 12 inch.

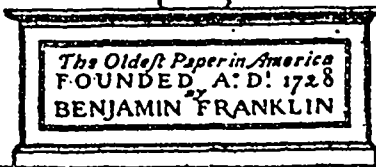
We are also placing on the market new and improved Pulpers and Slicers.

Send for catalogue, giving full description.

DAVID MAXWELL & SONS

St. Marys, Ontario, Canada

THE SATURDAY EVENING POST



A high-grade illustrated weekly magazine, equal in tone and character to the best of the monthlies. In addition to the best original matter obtainable, the Post will present each week the best in the newspapers, periodicals and books of the world. It will aim to be to contemporary literature what a Salon exhibit is to art, bringing together the choicest bits of literature from all modern sources and giving them a deserved place together, 'on the line.' We have the literary resources



of the world to draw upon. The best writers of the world are practically a retained corps of contributors. It would be impossible for any magazine, no matter how boundless its wealth, to obtain, as

original matter, the wealth of literature we have to offer weekly. The handsome illustrations in the Post are original.

To introduce it into your family, it will be mailed every week from now to January 1, 1899, on receipt of

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THE CURTIS PUBLISHING COMPANY, Philadelphia

Write for special terms to agents. FARMING requires a representative in every county. You can make money by securing an agency at once. Address
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The Ontario 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 20,000 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.

SHIPMENT OF LIVE STOCK via ASSOCIATION CAR.

The Association car of pure-bred live stock is this week leaving for Manitoba. Shipments are being made at Guelph, North Toronto, Myrtle, and Carleton Junction. At Guelph two Clydesdale colts are being shipped by Messrs. Sorby Bros., of Guelph, to John Turner, of Calgary. Mr. John Kelly, of Shakespeare, is shipping a ram lamb to Alex. B. Gambly, Brandon, Man. Mr. Geo. Green, of Fairview, is shipping a Berkshire sow to W. Kitson, Burnside, Man. At North Toronto five ewes and one ram are being shipped by Mr. F. G. Morton, of Allandale, to J. T. Wilkinson, Chilliwack, B.C. R. Shaw & Son, of Glanford Station, are shipping ten sheep to A. B. Smith, Moosomin, and a Tamworth boar is being shipped by Mr. John Bell, Amber, to A. Polson, Stonewall, Man. At Myrtle a ram is being shipped by Hon. John Dryden to Peter Fargey, Manitou, Man. At Carleton Junction two bulls are being sent out from the Central Experimental Farm to the Experimental Farm at Brandon and Indian Head.

OCTOBER CAR.

Space is already allotted for a portion of another car, which, it is expected, will leave the latter end of October. Any person having stock they wish sent in this car will communicate with F. W. Hodson, Secretary Live Stock Associations, Parliament Buildings, Toronto.

AN ABRIDGED REPORT OF ENGLISH AND EUROPEAN EXPERIMENTS WHICH ARE OF VALUE TO CANADIAN FARMERS.

POTATO DISEASE.

Every year since 1892 experiments have been carried on at the Woburn

Experimental Farm, England, into the spraying of the potato crop with Bouillie Bordelaise—a mixture of sulphate of copper, lime and water in the following proportions;

Sulphate of copper, 20 lbs.
Lime..... 10 lbs.
Water..... 100 gallons.

The result of these investigations has been to prove clearly that the use of this mixture is a considerable check to the disease, and even when no disease appears, the sprayed crop gives a heavier yield than the unsprayed one. The sprayed portion of the crop also remained green longer than the unsprayed part, the prolonged growth resulting in the heavier yield.

FINGER AND TOE IN TURNIPS.

The prevalence of finger and toe in turnips sown on a portion of the Woburn farm in 1895 was so excessive that scarcely a single root was left. It was, therefore, decided to set apart a portion of the ground, and test the effect of different applications as a remedy for the disease. In order to make sure that the land should be infected, a strip was further inoculated by spreading on it some of the diseased roots of the 1895 crop.

Lime, gas lime and basic slag were applied some months before the crop was sown in 1896; the other applications were made just before sowing. The results were not very conclusive as to the comparative merits of the different applications as preventives of the disease, owing to the fact that hares and rabbits destroyed a good deal of the crop; but, apparently, the plot with the largest number of sound roots was the one on which four tons of gas lime per acre had been used. The next best was that with the basic slag, and after that the kainit plot. Two tons of gas lime per acre did

good, and the two limed plots were also fair, four tons of lime proving more effectual than two tons per acre. Sulphate of copper, sulphate of iron, caustic soda, bleaching powder, and common salt were, apparently, ineffective. On the strip inoculated by diseased roots the inoculation was so thorough that the new roots were almost entirely destroyed. The only portions of this strip that had any sound roots on it were the plot on which were applied four tons of gas lime, and the kainit plot.

ORCHARD.

Effect on young apple trees of keeping an orchard in grass during a dry season.

The first report of the Woburn Experimental Fruit Farm, England, contains some striking results of the very common practice in that country of keeping orchards in grass for long periods.

The reduction in the size of leaves of young apple trees thus grown was thirty-five per cent. for dwarf trees and forty-one per cent. for standards, as compared with trees in cultivated ground; the loss of wood growth being eighty-seven per cent. for dwarfs and seventy-four per cent. for standards; in the case of the dwarf trees, too, there was a reduction of seventy-one per cent. in the weight of the fruit crop. The ill effect of grass round the trees was much greater than that of weeds. The report states, however, that in a year of greater rain fall the ill effects of both grass and weeds would, probably, be considerably less than in the dry seasons in which these investigations were held.

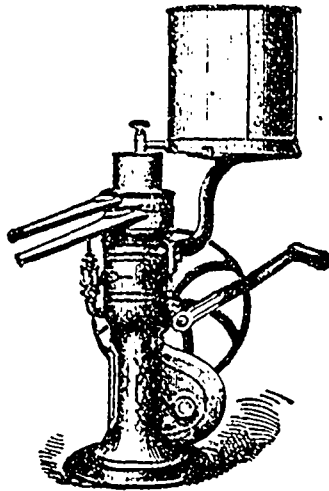
DISTRIBUTION OF ALCOHOLIC FERMENTS IN NATURE.

It has long been known that the yeast plant is found upon the grape and other fruits containing sugar, and that it is from the skin of these fruits that the yeast enters into the juice when the fruit is crushed, and brings about the fermentation therein which results in the production of alcohol.

It has also been discovered that the yeast-plant can be found in the soil during a portion of the year, but hitherto it was not known how the yeast got on to the fruit. Some light has been thrown on this subject by some recent investigations made by an Italian, Amedeo Berlese. He found several varieties of yeast in the soil from April to June; in the vineyards they were traced to a depth of four inches and in woods as far down as twelve inches. In June they were

rarely found in the soil of the vineyard, and in July they had quite disappeared. One variety was, up to June, found distributed equally in the soil, in both sunny and shady places; but, later on, where the soil was exposed to direct sunlight, it gradually disappeared. Numerous yeast cells were found on the thick and rough bark of oak and olive trees, the kind of tree and the distance from vineyards being, apparently, immaterial as regards the number found. Some yeasts were most numerous on the shady side, others on the sunny side of the tree, the former being, apparently, the best varieties for wine production. No alcoholic ferments were discoverable on the grapes until June, nor were any found in the atmosphere during April and June.

The investigations showed conclusively that the yeasts are carried to the grape by flies, ants, and other insects which resort to the grape for the sugar which it contains. Among these insects the most important in this work is the cellar fly, or gnat (*Drosophila cellaris*). The alcoholic ferments are consumed by insects (especially two-winged ones, such as flies) in their food and pass in a living state through the digestive organs of these insects without suffering any injury; in fact, they increase rapidly in the intestines of the insects if the temperature and food are suitable, and are deposited by the insects upon grapes and elsewhere. The author believes that some of the ferments actually exist through the winter in the bodies of insects.



National Cream Separators

No. 1—330 lbs. \$75
No. 2—600 " \$125 **HAND or POWER**

Perfect Skimmers

Easy to Run and Clean.

Saves Labor—Makes Money

The Best and Cheapest in the Market.

SOLD BY

The CREAMERY SUPPLY COMPANY
Guelph, Ontario.

N.B.—We furnish all kinds of Creamery and Dairy Supplies. Send for Catalogue.

HELDERLEIGH FRUIT FARMS AND NURSERIES —400 ACRES—

Situated at the base of the Mountain in a warm and sheltered valley where trees arrive at full maturity. Having over 125 acres planted in fruit, I have unusual facilities for knowing the value of the different varieties and establishing their purity. Everything is **GUARANTEED TRUE TO NAME** or purchase price refunded. I have for the fall of 1897, and the Spring of 1898, a complete line of Trees, Shrubs, Vines, etc., both fruit and ornamental. Write for a Catalogue which is furnished **FREE**, and which contains over ten pages of closely written matter about the various **PESTS** that trouble fruit growers and means of preventing their ravages.

Buy **CANADIAN GROWN STOCK** only, and thus escape the dreaded San José Scale so prevalent in the States. There is no more reliable, healthier, hardier, or more complete assortment than mine.

Good reliable salesmen wanted in a number of fine townships, to start work at once. Complete outfit free.

Address **E. D. Smith, WINONA, Ont.**

 **There Is No Doubt** About the **MERIT** of **THE KEYSTONE DEHORNER KNIFE**. It cuts both ways, does not crush. One clip and the horns are off close. Write for circular. **The Keystone DeHornor Mfg. Co., Picton, Ont., Can.**

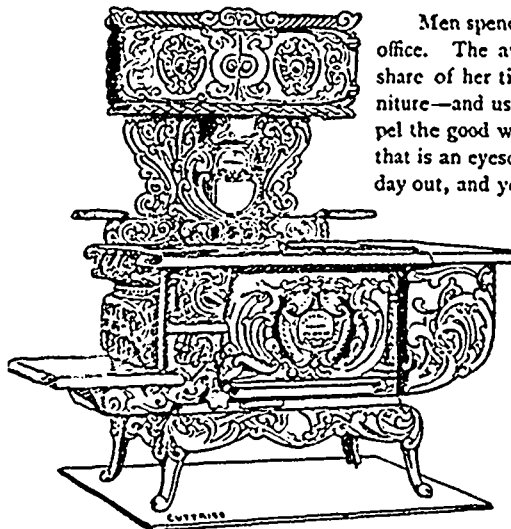
Religion in the Kitchen

Wife's Got a Souvenir Range

\$155

in Five Prizes

We want to influence Canadian housewives to tell their sisters the good time they have with a Souvenir range, and are offering \$155 in prizes for those who will write the best essay on the Souvenir range and its aerated oven. Circular giving particulars of contest and a booklet describing very fully all the good points of the Souvenir will be given free on application to any of the agencies of Souvenir anywhere in Canada, or will be sent direct on application to the manufacturers.



Men spend the larger part of a lifetime in store or office. The average woman must needs give a generous share of her time to the kitchen. The chief article of furniture—and usefulness—in the kitchen is the stove. Compel the good wife to worry along with a fifth-rate range, that is an eyesore as well as a mental anxiety day in and day out, and you are fast cutting short her lifetime.

When a **SOUVENIR** range is installed in the kitchen it is a thing of beauty and a joy for ever. These stoves are beautifully finished and an ornament to any kitchen. Best of all—the only stove with the celebrated

AERATED OVEN

they perform every detail of kitchen work with a completeness that makes life in the kitchen a source of joy and happiness.

The GURNEY-TILDEN CO., Limited

HAMILTON, CANADA

FARMING

AN ILLUSTRATED WEEKLY JOURNAL DEVOTED TO FARMING AND THE FARMER'S INTERESTS.

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All communications should be addressed to "FARMING, 44-46 Richmond Street West, Toronto, Canada."

Representative for Great Britain and Ireland, W. W. CHAPMAN, Fitzalan House, Arundel St., Strand, LONDON, ENG.

MARKET REVIEW AND FORECAST.

Office of FARMING,

44 and 46 Richmond street W., Toronto.

Oct. 3rd, 1898.

Business in fall trade circles continues active. Money, though plentiful, is worth more, and borrowers have to pay more for it, which is a good sign of trade activity. The number of business failures, so far this year, is very much lower than last year, and the lowest for the past ten days. Across the line the situation is spoken of as hopeful in all directions.

Wheat.

The wheat situation does not show any great change. Until the middle of the week the London market ruled firmer and higher, with a good demand for spot stuff at an advance of 3d. to 6d. per quarter. Towards the end of the week, however, a weaker feeling prevailed, owing to more liberal offers from this side. One of the surprises in the trade on this side is the decrease of 880,000 bushels in the visible supply. This is accounted for by the large requirements for home consumption and the low ebb of the reserves of old wheat. Combined with the large export demand is a heavy draft to meet the requirements on this side of the Atlantic, and until these are satisfied it is not likely that there will be any material lowering of prices.

New Manitoba wheat has begun to move more firmly, but comparatively little Ontario wheat has begun to go forward yet, and the receipts, so far, are barely sufficient to meet the requirements of the millers, though during the past few days there has been a greater desire on the part of Ontario farmers to market their wheat, and, consequently, larger receipts of this may be looked for soon. Prices throughout Ontario are considered to be above an export basis, as there is an easier tendency from that quarter. Until the middle of the week there has been a good export demand at Montreal, but this has fallen off some, and the market is a little easier. The prices west of Toronto during the early part of the week were well maintained at 66c. to 67c. No. 1 Manitoba hard is quoted at Fort William at 71c. to 71½c. afloat for first half of October shipment. The Chicago market has fallen off several cents, as also New York. The offerings here have been fair, with a slow demand, and red and white West quoted at 64c. to 65c. Manitoba wheat is quoted at 79c. for No. 1 hard Toronto, and 76c. for No. 1 northern.

Oats and Barley.

Owing to a good demand at an advance of 2d. per quarter, a more active business for oats has transpired on the London market. The Montreal market is a little easier and about ½c. below last week's quotations, the ruling figure being 29c. afloat. This easier feeling is due to more liberal receipts. This easier feeling is prevalent here and the ruling price during the week has been 23½c. for white west.

The Montreal barley market is quiet at 48c. to 52c. for malting grades, and 38c. to 40c. for feeding. The market here is dull at 45c. for choice No. 1 east and 41c. to 42c. west.

Peas and Corn.

The London market is firm and under a better enquiry and light stocks, holders have been able to establish an advance of 6d. per quarter. The Montreal market is a little easier and the quotation now is 61½c. afloat. The Toronto market is also easier, and 50c. was the highest quotation at the end of the week north and west. Owing to the advance in freight rates exporters have been compelled to lower prices a couple of cents.

Corn here is rather easier at 33c. a bushel for Canadian yellow west, and American at 38½c. Toronto. At Montreal the feeling is stronger, and American is quoted at 36c. afloat.

Rye and Buckwheat.

The Montreal rye market is firm at 50c. to 50½c. afloat. The Toronto market is unchanged at 41c. to 42c. west. The market for buckwheat continues nominal.

Bran and Shorts.

At Montreal Ontario wheat bran is in good demand at \$11.50 and Manitoba bran is quoted at \$10.50 to \$11, and shorts at \$14.50 to \$15. The market here is dull at \$11 to \$13 for shorts and \$8 for bran west.

Eggs and Poultry.

The slight decline in the London market a week ago has made the market more active. There is a good demand reported for Canadian eggs both here and at Liverpool, and the market has a steadier tone all round owing to lighter imports, and prices are now quoted at 6s. 6d. to 6s. 9d. in Liverpool. At Glasgow there has been an advance of 3d. per 120 with a good demand for Canadian. The Montreal market is steady and sales are reported of choice straight candled eggs at 14c. to 14½c. Strictly new-laid eggs are steady at 17c. to 17½c. The receipts of strictly fresh eggs here are not large and these are in good demand at 15c. to 16c. Held fresh are quoted at 13c. to 14c.

There seems to be a good demand at Toronto for poultry, and the market is steady at 40c. to 50c. for chickens, 50c. to 60c. for ducks, 7c. per lb. for geese, and 10c. to 11c. for turkeys.

Potatoes.

The Montreal potato market is firm at 50c. to 55c. for car lots on track, and in a retail way at 60c. The market here was a little

easier towards the end of the week with quotations at 65c. to 68c. for cars on track. Potatoes out of the store are quoted at 80c.

Hay and Straw.

The London hay market is somewhat better, and late arrivals of Canadian have met with a good demand at 61s. to 62s. 6d. c.i.f. At Liverpool, owing to large supplies of Canadian, the market is easier, and sales are reported at 52s. 6d. to 55s. c.i.f. At Montreal the situation is not very encouraging. Freight room on ocean vessels is scarce, and the preference is given to other goods, and the consequence is that large quantities are being stored up there which must have a depressing effect upon the market. This is the more serious because just at present the British market is in a position to take large quantities of Canadian hay which could be worked off, thus relieving the market later on. The Montreal market is over-supplied, and quotations are: Clover, \$4 to \$5; No. 2, \$5.50 to \$6; No. 1 straight timothy, \$6.50 to \$7. The demand here is slow, and the market quiet at \$7.50 for cars on track. Baled straw is dull at \$4 for cars on track.

Fruit.

The export apple trade this fall will be much larger than last year, though reports of a failure in the crop continue to come from several quarters. The total shipments from Montreal for the week ending September 24 were 23,000 bbls., which will be found to be considerably larger than for the same time last year. There have been sales of late fall apples during the week at Montreal at \$1.80 to \$2.10, in good-sized quantities. Greenings have brought \$2 to \$2.10, and new fancy \$2.20 to \$2.25. These figures mean from \$1 to \$1.50 in the farmer's orchard. It is reported that the bulk of the winter apples in the northern part of Western Ontario have been purchased at \$1.80 to \$2.05 per bbl. on cars. Apples on the local market here are quoted at \$1.25 to \$2 per bbl.

Cheese.

Though the London cable reports an inclination on the part of buyers not to meet the advance of the last week or two, the situation is good for holders, and there is no doubt that the present prices, if not higher ones, will be well maintained for the balance of the season. The old English stock which affected the market early in the season has been worked off, and this, together with the fact that the drouth has curtailed the English make very much, has improved the situation very much. The total shipments from Montreal up to Sept. 24th show a falling off of 226,867 boxes as compared with the same time last year, and the total exports from New York and Montreal a falling off of 460,481 boxes. The New Zealand and Australian supply is expected to be large, but past experience shows us that this only has a temporary effect upon the market.

One of the special features of the week is the large amount of business done in June and July goods. These have changed hands readily at from 8½c. to 8¾c., and is an evidence of the upward condition of the market. A large volume of business has been done in

The same thing over and over again. Read what the AMERICAN has done this time.

WILL PAY ITSELF IN 4 MONTHS

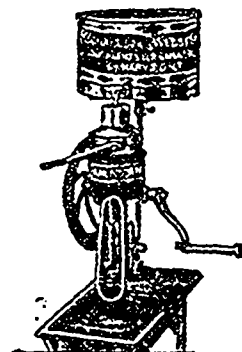
BLYTHESWOOD, ONT., JUNE 8TH, 1898.

MESSRS. RICHARDSON & WEBSTER,
St. Mary's, Ont.

DEAR SIRS,—Enclosed find settlement for the Separator and oil received from you on May 28th. I placed the Separator on trial with Mr. S. D. Wilkinson, Leamington, and after 4 days he bought it. He is perfectly satisfied. I have tested the skim milk several times for him and it has never shown more than a trace of butter fat. I consider it a perfect machine in every respect and would like to act as your agent in this part of the county. Mr. Wilkinson is one of the most prominent dairymen around here. He says he will save enough in butter to pay for the Separator in 4 months. Yours truly, (Signed) F. A. LEAK.

Write RICHARDSON & WEBSTER, St. Mary's, Ont., for Catalogue and Prices. It will pay you to have a Separator as well as others.

W. G. GLENN, Agent for Owen Sound and vicinity



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ST. MARY'S, ONT.

LEADING COLLEGES OF CANADA

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Central Business College

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28 Eight regular teachers. Splendid Equipment.
Reasonable Rates. Get particulars.

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is a commercial school of the highest type. Read its Annual Announcement, be convinced, and attend it.

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Fall and winter term now on. Book-keeping, arithmetic, commercial law, shorthand, typewriting, etc.

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Farmers who require an

Economic Power

TRY THE

Canadian Steel Air-Motor

Do not pay dear for your experience by experimenting with Gasoline Engines etc., etc.

Galvanized or Painted

Ask for copy of testimonial from F. W. Hodson, Esq., Sup. Farmers' Institutes.

PUMPS, TANKS, GRINDERS, ETC.

Ont. Wind Engine & Pump Co. Limited
LIBERTY ST. - TORONTO

Western Septembers during the week at Montreal, finest colored bringing 9½c. to 9¼c., and white 9¼c. The Liverpool public cable is quoted at 42c. colored. The ruling prices at the local boards have been from 9c. to 9 5-16c., the bulk of the offers being below 9¼c.

Butter.

Finest Canadian creamery is quoted in London at 98s. to 99s., with 100s. made in some cases, and fine at 94s. to 96s. Buyers, however, seem determined not to advance on these prices, and consider the offers from this side too high. The total shipments from Canada and the United States up to Sept. 24th have fallen off 138,984 packages, as compared with the same period last year. Values on this side are considered to be above an export basis. The make is now large, owing to the advance in prices, which may create an easier feeling later on. It is now felt that the summit of prices have been reached for the present, with a less active demand for the finest. Sales of fresh September creamery are reported at Montreal and in the Eastern Townships at 20½c., but 20c. considered to be the top price. Western dairy seems to be scarce, and sales of selected are reported at 15c. to 15½c., while other qualities are reported at 14c. to 14½c. Creamery here continues in good demand at 20c. to 21c. for prints, and 17½c. to 18½c. for packed. There seems to be a scarcity of choice dairy tubs on the Toronto market, which is firm at 15c. to 16c. for the best, and inferior at 11c. to 13c.

Wool

Offerings are more liberal and buyers and sellers are apart. The situation, as a whole, has not changed since last week. Fleece for combing is quoted at 15c. to 16c.

Cattle.

The cattle situation is about the same. At some of the western markets supplies have not been so large though sufficient to meet the demand, with poorer stuff lower in value. At Toronto during the week business has, as a rule, been quiet.

Export Cattle.—Offerings have been light but those offered have been of very good quality and the demand fair at prices ranging from \$4 to \$4.40, with \$4.50 for selections.

Butchers' Cattle.—There have been in fair demand, though offerings have been small. Choice butchers' cattle bring from \$3.75 to \$4 per cwt.; common cattle bring from \$3 to \$3.50. A lot of inferior and common cattle were held over from Friday's market.

Bulls. were in fair demand on Friday. Heavy bulls brought \$3.25 to \$3.75 per cwt., and light bulls \$2.25.

Stockers and Feeders.—There has been nothing doing in these on Friday's market. Stockers sold at \$3.25 to \$3.50 per cwt. Feeders were slow at \$2.50 to \$3.

Calves.—Offerings have been light, and all were bought quickly. For good to choice veals the quotations ruled from \$3 to \$6 each. Calves are a little easier at Buffalo, with choice to extra quoted at \$6.75 to \$7, and good to choice at \$6 to \$6.75.

Milk Cows.—There have been only a few on the market lately. Good cows bring from \$35 to \$45 each.

Sheep and Lambs.

On Friday these were a little easier under heavy offering. Sheep for export and butchers' use bring from \$3.30 to \$3.60 per cwt., according to quality. The demand was fair. Bucks bring \$2.75 per cwt. Spring lambs are in fair demand at \$4 per cwt. Lambs at East Buffalo are quoted as follows; Choice to extra, \$5 to \$5.30; good to choice, \$4.75 to \$5; and common to fair \$4 to \$4.75.

Hogs.

There has been a pretty fair demand at Montreal at \$4.75 for the general run, with \$4.85 to \$4.90 paid for light bacon hogs. There has been a very good trade here during the week, with the market a little weaker, owing to large supplies. Choice bacon hogs bring about \$4.50 per cwt., and light bacon hogs, \$4.13 per cwt. Thick fat hogs sold on Friday at from \$4.25 to \$4.38 per cwt. Sows bring from \$3 to \$3.25. The East Buffalo market was weak and lower at the end of the week.

Owing to sale of farm I am
instructed to advertise . . .

UNRESERVED AUCTION SALE

of

Pure-bred Shorthorns, Registered Shropshire Sheep, Brood Mares, Young Horses and Farm Implements

the property of T. C. Patteson, P.M., Toronto, at the farm, opposite Eastwood Post Office, 4 miles east of Woodstock, at one o'clock.

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TERMS. Six months' credit on approved notes.

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UNDER instructions from the Minister of Agriculture, the

TWENTIETH ANNUAL SALE OF PURE-BRED STOCK

including Poultry, the property of the Ontario Government, will be held at the Ontario Agricultural College, Guelph, on **Wednesday, 19th October, 1898**, commencing at one o'clock, sharp.

For further information, apply to Wm. RENNIE, Farm Superintendent.

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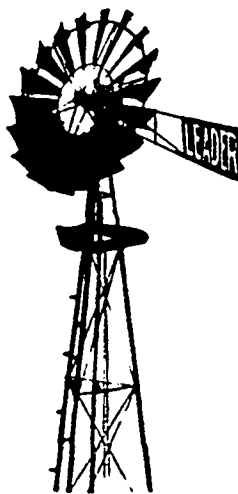
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Exeter, April 6th, 1898.

The Leader Windmill, Ridgetown, Ont.
The Steel Windmill purchased from you last fall has given good satisfaction. It does its work easy and well as any mill could do.

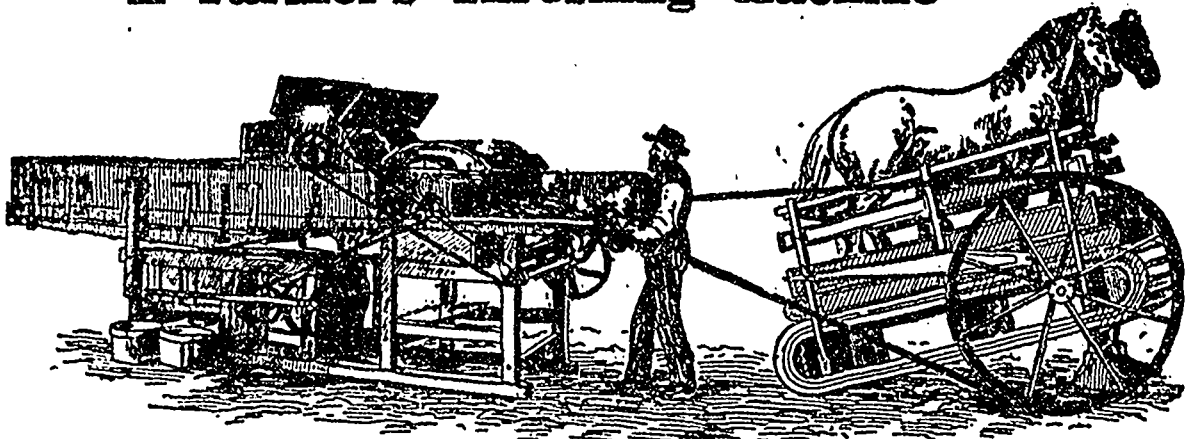
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WE have lately placed one of these machines with Mr. F. W. Hodson, Superintendent of Farmers' Institutes, Toronto. Our Tread Powers are justly recognized as being the best machines of their kind. The machines under good conditions will thresh and clean fit for market, with two horses, from 40 to 60 bushels of oats per hour, and other grains in proportion. Our Tread Powers are built to develop power and to last. Send for Catalogue. We manufacture also Feed Grinders, Feed Cutters, Hay Presses, Circular Saw Machines, Etc., Etc.

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"I am bound, and indeed pleased, to confess that I was never more astonished in my life than when noting the effect of Alberts' Thomas-Phosphate Powder upon pastures, clover, roots and corn fields, especially upon the harsh, cold and almost intractable clay lands. The effect in numerous cases was simply marvellous; poor, heavy pastures after being dressed with it were simply redolent in clovers and wild vetch, and similar valuable fodder plants. One field especially, of some thirty acres, apparently poverty-stricken to a last degree, had been dressed as to five acres with a ton of Alberts' Thomas-Phosphate Powder, which was one beautiful sheet of white clover in flower, fit to mow, while the remainder of the field scarcely afforded a bite of coarse grass." W. GODWIN, in the *Lincoln Chronicle*, April 2nd, 1897.

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"We have seen old meadows, which were unremunerative previously, become covered, after application, with white and crimson clovers, excellent alike for hay or grazing purposes. Like all manures which exert a continuous effect over a period of years, it is a little slow in showing the beneficial effects of its actions, and it is for this reason that we recommend its use during Autumn and winter, so that sufficient time will have elapsed for its effects upon the crop to be seen by the summer following." *Farmers' Gazette*, July, 1898.

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"Agriculture cannot fail to benefit when a cheap and readily available manorial agent is at hand, which of itself can change a poverty-stricken pasture field into a bed of luxuriant cattle food while every one of the million leaves of white clover and trefoil, and other kindred plants developed by its action, is drinking in from the boundless stores of the atmosphere the most costly and one of the most important of all of the sources of fertility." *Mark Lane Express*, 12th Sept., 1898.

We call these few extracts from the many in reference to

ALBERTS' Thomas-Phosphate Powder

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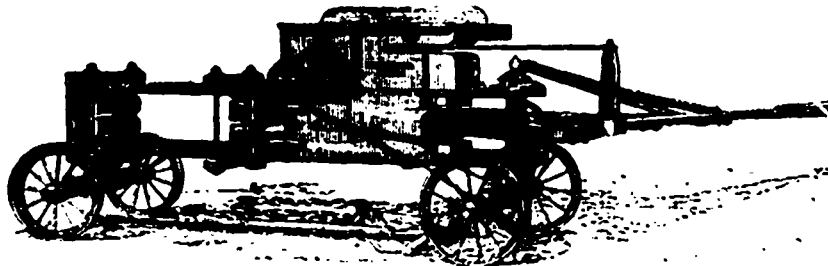
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